

Caught in the Widow's Web

Or

A Preliminary Survey of the Recognition that the P-61 Northrop has

Received Since 1940

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To all the P-61 pilots who braved the night skies and stormy weather....



Caught in the Widows Web By Jack Fellows, the artwork for which this thesis derives its title.¹

¹ Jack Fellows, *Caught in the Widows Web*, *Ebay.com* (Ebay.com), accessed April 17, 2020, <https://www.ebay.com/itm/322531086658>

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ABSTRACT

This Honors Thesis consists of two chapters. In the first chapter, a brief history of the World War II P-61 Northrop “Black Widow” Night Fighter is laid out, briefly discussing the reasons for its creation; its construction; its service during and after the war; and its legacy, namely the advances it made in aircraft radar technology and meteorology. Chapter 2 focuses on the research for this Honors Thesis, answering the question, “What recognition has the P-61 Northrop ‘Black Widow’ Night Fighter received since its inception in 1940, especially when compared other contemporary aircraft [specifically the P-51 North American Mustang and the P-38 Lockheed Lightning]?” The research clearly shows that the P-61 Black Widow has received less recognition than the P-51 Mustang and the P-38 Lightning. It also gives data on that difference in recognition, specifically that any source in a subject related to the P-61 Black Widow [namely sources on World War II or Aircraft] will likely have, overall, about a 50% of mentioning the aircraft [as compared the P-51 Mustang (about an 88% chance) or the P-38 Lightning (about a 76% chance)].



INTRODUCTION



When the two words, “Black Widow” is said I am reasonably sure that most people would likely think of one of two things; either that red-headed Marvel superhero or the tiny poisonous red and black spider. They likely would not, however, think of an aircraft, which is exactly what this thesis [which henceforth, shall be stated as “this work”] is about.

I was like most people who never heard of the P-61, only learning of this aircraft’s existence three years ago when the cafeteria staff at my high school gave me a model for an aircraft called the “P-61 Black Widow” as a graduation gift. The instructions did not give much historical detail about it save that a company called Northrop built it as a night fighter, a few basic physical details, and that a person named “Major Carroll C. Smith” was the premiere night fighting ace.² Not caring about the history much more than that at the time, I tore into the box and decided to build the *Time’s A Wastin’* version (as the other version was more sensual).

² Revell Inc., “Model Kit Instructions” (Elk Grove Village, Ill, n.d.), 1

Fast forward a year later. Now a freshman in college, I was searching for ideas for my upcoming thesis project that I hoped would involve my hobby, model building. After thinking about some other ideas, I thought about the idea of using that P-61 model as the project. I would do a little bit of research, build a historically accurate diorama using the P-61, and write the thesis about it. It sounded simple and easy, which was perfect for my freshman self.

Now, two years later, at the end of my thesis journey, I can confidently state this work was not that simple or that easy. First, the diorama was difficult to construct to “historical accuracy.” The model itself was full of historical errors and required almost a complete rebuild. The ease of the build was destroyed by all the reference work, picture hunting, and sheer frustration at all the changes that I had to make. The diorama itself was as difficult as the research, for the information to guide me in building it was difficult to find and implement.

Second, the diorama itself holds little academic value as no academic or researcher will get enthusiastic about some diorama someone made unless the person who made the diorama or the conditions that it was made in were historically important. However, the research used to create the diorama has much more academic appeal because it shows why the subject of the diorama is important. Ultimately this academic aspect of the P-61’s importance would surpass the diorama and lead to the final form of this work.

The academic value of studying the P-61 is important because of what it was designed to do, fly at night. In the course of research for this work, I came across several of the published writings of Carrol C. Smith, who flew the P-61 *Time’s A Wastin* and became the first night-fighting ace of WWII.³ Not only does he discuss why the P-61 was different, but also why it was a good airplane.

In a 1945 edition of “Popular Science,” Smith wrote:

³ Carroll C Smith, “My Sweetheart Is a Black Widow,” *Popular Science Monthly*, July 1945, pp. 116-208), 116

With more than 100 night missions behind me, I long ago had overcome my dread of lack of vision. You [do not] fly these killers by the seat of your pants. You trust to your many instruments. I placed utmost confidence in both the plane and the instruments. You've got to trust [them] when the radio's silent, and you're up there in a void weaving around the sky three and four hours. It's a monotonous, lonely job—but fairly safe if you keep a cool head. The job, as the British say, calls for ‘dash with discretion.’⁴

Fifty years later, he would write:

I had modest success flying the Widow, but more importantly, I had more confidence in this aircraft than any of the other fifty-seven I flew spanning thirty years from the PT-13 biplane to the Mach 2 F-106.⁵

The story of American night fighters, and indeed P-61's story, is one that Smith calls “a very valuable contribution” to aviation history.⁶ But the P-61's influence reaches far beyond the simply “aviation history” and, as will be shown in this work, into our everyday lives, specifically its contributions to aircraft radar technology and meteorology.

How then, does no one seem to know about this aircraft? For being so famous, it appears to be so lost in the dusty annals of history. From all the people that I have had (social network) connections with, only two appear to have known about the massive night fighter [and it was massive, having two engines and a 66-foot wingspan] before I told them about it.

Answering the question of why there is lack of knowledge of the P-61 is an enormous question as it touches all realms of the humanities. This is because helps to answer the historical theory question, “Why are some historical events/objects remembered more than others?” However, by breaking it down, multiple projects can attempt to answer this question.

⁴ Ibid, 207

⁵ Garry R. Pape, John M. Campbell, and Donna Campbell, *Northrop P-61 Black Widow: The Complete History and Combat Record* (Atglen: Schiffer Pub., 1995), 6

⁶ Ibid, 6

This work is the first of those projects. In attempting to show how much recognition that the P-61 has received from published sources, I can say that a foundation has been laid down for the understanding the P-61's place in history. By looking at this topic, one can then begin to move away from the archives and into the field, seeing how the ideas discussed this work fit into the larger story of the historical theory.

But this work's research is a type of research that I do not think has ever been used before. I "blazed a trail," as it were, in this area of historiography. Looking at exactly how researchers have recorded the P-61 and cataloging its appearances is something I have never seen before in historiography. This helps to open a whole new door in the type of research that can be done, both by academic and popular researchers.

In all, this work is wholistic in how it approaches the subject of the P-61, interesting both general and academic readers alike. It is not written simply for the academic, though that is its main audience, as its writing is easy to understand. It is a work designed to expose those who read it to the first true night fighter that built by the US, one that not only was designed to fly well, but hunt its prey in the dark of night. I hope that with this exposure, mostly directed towards the academic community, that the P-61 will be dusted off by others and recognized for what it has done.



CHAPTER I

The History of the Black Widow



Before understanding the level of recognition the P-61 Northrop Black Widow has received, one must know its history. This section outlines this history by starting with a short history of night flying and fighting, as well as technological advancements necessary for the P-61 to be developed, before moving onto the development of the P-61, its wartime history, several of the P-61s variants, and the warbird's post-war uses. The section ends with a discussion on the P-61's legacy and arguments for why the aircraft should be remembered.

What has Come Before: The History of Night Flying, 1910 – 1940

In 1903, the Wright brothers paved the way for man to conquer the skies. However, it would be another seven years before man attempted to fly in darkness.⁷ This was due to the obvious problem with flying at night; it is dark outside. Things like landing strips, the ground

⁷ Jeff Kolln, *Northrop's Night Hunter P-61 Black Widow* (North Branch, MN: Specialty Press, 2009), xviii

itself, or other aircraft are hard to see, especially when the moon is obscured. “Many pilots [flying at night] were killed while landing because they misjudged the altitude and distance from the field.”⁸

The military saw no use for night flying as “night flying did not fit into the preliminary mission” that it had for its flying programs, battlefield reconnaissance. However, by 1913, the infant Royal Flying Corps’ (RFC) pilots began flying at night.⁹ This was a good decision because with the onset of World War I, night fighting became a necessity for the British as Germany began bombing England using zeppelins.¹⁰

With the end of World War I and the beginning of the roaring 20’s, scientists began experimenting with a new idea that would eventually become the P-61’s “eyes.” Almost by accident, scientists discovered that by sending a pulse of electrical energy through the air towards a specific object, that electrical energy bounced off the object and returned to the sender.¹¹ Because these radio waves travel at the speed of light, the distance between the two objects could be determined by how long it took electrical energy pulse to return to the sender.¹² By 1930, this new technology, known as radar, had advanced to the point where an aircraft could be detected from the ground. By 1939, radar could detect other aircraft from the air, giving birth to airborne interception, or AI, radar.¹³

By the start of World War II, the Royal Air Force (RAF) had 15-night fighters.¹⁴ As World War II and the bombing of England began, night fighter pilots began protecting the skies against German bombers. However, the problem was that by the time an enemy aircraft had

⁸ Ibid, xviii

⁹ Ibid, xviii

¹⁰ Zeppelins were dirigible airships (not unlike today’s blimps). Ibid, xviii

¹¹ Pape, 10

¹² Kolln, 1

¹³ Ibid, 1-2

¹⁴ Ibid, 2

been spotted (usually by ground radar) and a British aircraft arrived at altitude to intercept, the bombers had already dropped their payload.¹⁵

It was at this time that the US, still neutral, entered an agreement with Great Britain to begin cooperatively working on radar equipment (as the US had made some progress since World War I) to create a better type of AI.¹⁶ The ultimate result of this cooperation was the SCR – 720, which was the combination of the best parts of the American and British designs,¹⁷ which would be the AI that would become standard for the P-61.

One of the aspects of this cooperation between the US and Britain was that US personnel were sent to Britain to observe their night fighting program.¹⁸ These observers noted that the conventional day fighter aircraft that had been converted to night fighters were not adequate for the job and “made it evident that the Air Corps¹⁹ needed a night fighter— a designed-for-the-job night fighter.”²⁰

The Widow is Born: 1940-1943

The British were the first to approach Jack Northrop of the Northrop Aircraft Company about building a purpose-built night fighter.²¹ This new aircraft needed to have long loitering time, multi-engine design, ability to reach bomber altitude, slow circling speeds, and a specific type of armament.²² In late October, 1940, the United States asked Northrop to build a very similar type of aircraft.²³ Over the next few months, the design of the night fighter was finalized

¹⁵ Pape, 10-14

¹⁶ Ibid, 11; Kolln, 2

¹⁷ Kolln, 3

¹⁸ Pape, 4

¹⁹ The branch of the military we know as the United States Air Force was not founded until after World War II. Until that time, it was the Army Air Corps under the United States Army.

²⁰ Warren Thompson, *Evolution of the P-61 Black Widow* (Carrollton, TX: Squadron/Signal Publications, 2009), 3; Pape, 11

²¹ Ibid, 13

²² Ibid 14

²³ Ibid, 15

and on January 30, 1941, a contract was signed “for two experimental XP-61 airplanes and two wind tunnel models,”²⁴ which was followed up by a contract for 13 service test YP-61 aircraft identical to the first two experimental aircraft.²⁵

Over the next few months several changes were made to the proposed aircraft. Perhaps most important of these changes was moving the proposed 20mm cannon from the wings to the underbelly of the crew nacelle.²⁶ Not only did this change allow for better air flow over the wings, but also provided the guns with stronger mounts, allowed for the P-61 to carry more fuel, and also removed the problem of convergence.²⁷

Convergence was a fact-of-life problem for those who flew fighter planes that had their guns mounted on the wings.²⁸ (See Figure 1.1²⁹) In order to prevent a large safe zone where

maximum damage could not be inflicted (*blue lines*), the guns were adjusted in such a way that the bullets being fired would intersect, or converge, at the aircraft centerline. However, in order to

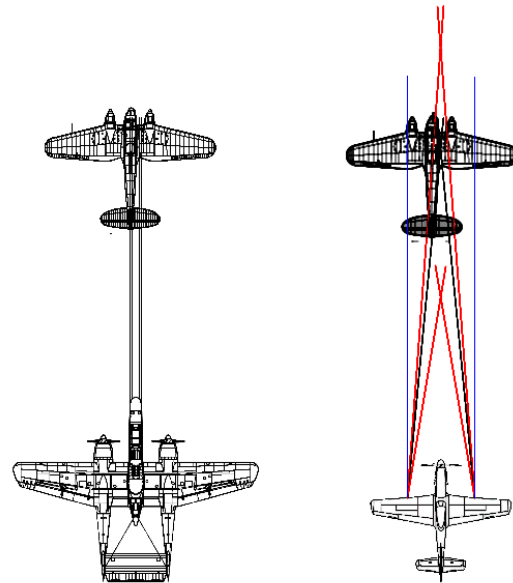


Figure 1.1: Convergence problems when trying to shoot down an enemy aircraft.

²⁴ Ibid, 16-17

²⁵ Ibid, 17

²⁶ Kolln, 7

²⁷ Ibid, 7

²⁸ Ibid, 7

²⁹ This figure represents both a P-61 and a P-51 shooting at a German Heinkel He 111 H-1. I created the image using parts of the following three images; Kaboldy, "Northrop P-61B Black Widow," digital image, https://en.wikipedia.org/wiki/Northrop_P-61_Black_Widow#/media/File:Northrop_P-61B_Black_Widow.svg, October 3, 2012, accessed August 7, 2019. Kaboldy, "Heinkel He 111 H-1," digital image, https://en.wikipedia.org/wiki/Heinkel_He_111#/media/File:Heinkel_He_111_H-1.svg, September 7, 2012, accessed August 7, 2019.

Tom Tschida, "Orthographically Projected Diagram of the P-51D Mustang," digital image, https://en.wikipedia.org/wiki/North_American_P-51_Mustang#/media/File:North_American_P-51D_EG-0068-01.svg, February 3, 1998, accessed August 7, 2019.

inflict maximum damage, the enemy aircraft had to be the set convergence distance (*black lines*). If the airplanes were too close or too far away, the bullets would either miss wide or not inflict maximum damage (*red lines*). By moving the machine guns close to the center line, not only was it easier to aim, but maximum damage was limited only by the range of the gun.³⁰ This made the P-61 a much more accurate and deadlier weapon.³¹

The Widow in Action: The P-61 in Combat.

Starting in 1943, the P-61 began making its way to the frontlines and to several night fighting units, both in the Pacific and European theatres. It has a very simple job, which it did very well, as described by P-61 pilot, Maj. Carrol C. Smith, who fought in the Pacific theatre.

Night fighters are primarily a defensive weapon, though they are sometimes used for train-busting and strafing ground installations. Our real job is saving airstrips and convoys from damage in the dark. As I said, few [Japanese] planes have escaped once they blundered within range.³²

It did its job well, as P-61 pilot Alvin E. “Bud” Anderson would later record:

When the P-61 Black Widow and its crews became operational, these problems [enemy bombing of Allied facilities and supplies] virtually ended, thus saving the lives of untold number of our troops and much-needed supplies and equipment.³³

³⁰ Kolln, 7

³¹ It must be noted that some P-61s did have a 50-cal. turret and others did not. This was due to early problems with the turret designs causing the turret to be deleted. Pape, 16-17, 20; Ibid, 17-18

³² Smith, 208

³³ Kolln, iv

Into the Storm: The Thunderstorm Project.

After World War II, the P-61 found itself as “a stop-gap that did not survive long in the post war era,” being phased out due to the new technology of jet propulsion.³⁴ Even so, the P-61, and its variants did have some uses after the war, especially with experimentation. However, the most important project that the P-61 took part in after WWII was the Thunderstorm project.

Since the dawn of aviation, pilots had known about thunderstorms and their dangers. However, as new air technology came about, it was becoming increasingly unavoidable for aircraft to avoid storms. As such, the federal government allocated money for the research into thunderstorms to understand how they operated. For this project to work, an aircraft was needed that was midsized, able to carry the necessary equipment, durable, able to fly fast or slow, long range. The P-61 (and F-15) was more than capable to do the job. As such, several P-61s and F-15s³⁵ were procured and refitted to house the necessary equipment.³⁶

When a thunderstorm was spotted, the P-61s would be prepared to take off. Once in the air, the P-61s would penetrate the thunderstorm at 5000-foot intervals ranging from 5000 feet to 25000 feet.³⁷ A set of instruments would be photographed (filmed in Phase II) during flight for later study on the how the P-61 was disturbed in its flight pattern and the corrective measures the pilot applied. Meanwhile, lighting tests were occurring on one F-15. In these tests, oscillographs were connected, via insulated wire, to six of the most likely areas to be struck by lightning (the tail fins, the wing tips, the nose, and the cockpit canopy) and tested. Experiments showed that having lightning rods attached to these points would prevent the lighting severely

³⁴ Warren Thompson, *Northrop P-61 Black Widow*, vol. 15 (North Branch, MN: Specialty Press, 1997)., 88

³⁵ This was a photographic version of the P-61. It had the crew nacelle chopped down (removing the R/O's position) and replaced by a bubble canopy. It also had all the armament removed. Kolln, 40-47

³⁶ Ibid, 116-117

³⁷ Ibid, 113

damaging the aircraft. This F-15, now tested and appropriately modified, was sent to the field to fly with the rest of F-15s and P-61s to be the unlucky test subject of real lightning strikes in thunderstorms. The project finished flight tests in September of 1947, having brought in much data that would then be viewed, recorded, and analyzed.^{38 39}

The End of the Line: From the 50s to Today

By 1950, all P-61s had been phased out of service with the F-15s following a few years later. While five P-61/F-15s were sold to private owners, they were all scrapped or destroyed in accidents. Indeed, of the 742 P-61/F-15 airframes built and sent into service, only four P-61 airframes remain.⁴⁰ The first P-61 still surviving is in Beijing, China; the second surviving P-61 is owned by the National Museum of the United States Air Force; the third is a P-61C owned by the National Air and Space Museum.⁴¹ The final P-61 is undergoing restoration to airworthiness at the Mid-Atlantic Air Museum [MAAM]; it is a P-61B from the 550th NFS that crashed in Indonesia during the war.⁴²

Remember the Widow: The P-61's Legacy

The P-61 had an important legacy, despite its apparently small role in the history of aviation. It played a role in keeping the night skies of World War II clear, that much is obvious, but what is not so obvious is its mark on modern life. The P-61, perhaps more than any other American World War II fighter, had a major influence, not just on aviation, but on everyday life of American citizens.

³⁸ Kolln, 118, 120, 122; US Department of Commerce and NOAA, "The Thunderstorm Project in Ohio - 1947," National Weather Service (NOAA's National Weather Service, October 9, 2016), <https://www.weather.gov/iln/ThunderstormProject> [see video]

³⁹ For more information, see: Kolln, 116-122; Pape, 111-114; US Department of Commerce and NOAA

⁴⁰ Pape, 121-128

⁴¹ Kolln, 128-129

⁴² Ibid, 129-131; MID-ATLANTIC AIR MUSEUM, MID-ATLANTIC AIR MUSEUM - THE WIDOWS WEB - P-61 - THE RESTORATION, August 20, 2019, http://www.maam.org/P-61/P-61_rest.htm

The P-61 was specifically built for night fighting and was the first American aircraft to have that distinction. However, more importantly, it laid the groundwork for later fighters to follow. It was the first aircraft in the US, if not the world to be designed to fight with one goal in mind, to fly when (and eventually where) the pilot could not see. The P-61 was designed to be flown by instruments as well as with eyesight. “It was actually the precursor to today’s all-weather fighters.”⁴³ Its ‘descendants,’ the modern aircraft of today, carry the legacy of technological advancements that it made that allowed mankind to conquer the skies. Anyone who has flown at night can thank the P-61 for the legacy of purpose-built night/all-weather fighters that it began as many of the techniques perfected by those P-61 pilots are still used in military and commercial aviation.⁴⁴ While the Black Widow was phased out after the war, its technological legacy has lasted long after it.

But what makes the P-61 so special is its superior design. Any aircraft could theoretically have housed the SCR-720, but the P-61 was not only specifically designed to fly at night but also to fly well. Marrying a good radar with a good plane meant that the P-61 could do its job well. Pilots praised it for its good design. Maj. Carrol C. Smith’s quote in the introduction of this work is just one example. After veteran test pilot Vance Breese took to the skies and the P-61 Black Widow for its inaugural flight, he told Jack Northrop, “Jack, you’ve got a damn fine airplane!”⁴⁵ Iris Critchell, a WASP who flew the P-61 would later state, “I loved that airplane, because it really was designed by a pilot for a pilot.”⁴⁶

⁴³ Lloyd S. Jones, *U.S. Fighters* (Fallbrook, CA: Aero Publishers, Inc., 1975), 161

⁴⁴ Kolln, iv

⁴⁵ Pape, 20

⁴⁶ Sarah Bryn Rickman, *Wasp of the Ferry Command: Women Pilots, Uncommon Deeds* (Denton, TX: University of North Texas Press, 2016), <http://web.b.ebscohost.com.ma.opal-libraries.org/ehost/ebookviewer/ebook/ZTAwMHhuYV9fMTIwMjkwOV9fQU41?sid=91f107d6-d1a5-4435-9195-68e136043e5c@sessionmgr101&vid=10&format=EB&rid=4>, 2 Steven D. Ellis, 2016. “WASP of the Ferry Command: Women Pilots, Uncommon Deeds.” *Air Power History* 63 (3): 55. <http://search.ebscohost.com.ma.opal-libraries.org/login.aspx?direct=true&db=a9h&AN=118904983&site=ehost-live&scope=site.>, 317

The P-61's influence is not just confined to aviation. Anyone can see the P-61's legacy every time they fly or listen to a forecaster. The Thunderstorm Project's had a massive role in the understanding of meteorology. The government realized the importance of the Thunderstorm Project as its priority was second only by the Bikini Atoll atomic bomb tests.⁴⁷ This project sought to understand cloud physics⁴⁸ and how they effected aircraft flight.⁴⁹ Because thunderstorm turbulence was one of the worst hazards to flight, it needed to be understood so that air travel would not be hindered by bad weather.⁵⁰ The project was the first time that detailed information about thunderstorms was collected in the US⁵¹ and it was the technology of radar that made it possible⁵² as observations the radar created allowed for the integration of all the data into a single picture of what a thunderstorm was and how it worked.⁵³ It helped to create the picture of the three chronological stages of the thunderstorm (based on its operation): the cumulus, mature, and dissipating stages⁵⁴ and was foundational to the modern understanding of how thunderstorm "and other weather phenomena works."⁵⁵ The Thunderstorm Project also showed pilots how to mitigate the turbulence of thunderstorms, allowing them to safely fly through thunderstorms without endangering the plane, crew, cargo, or passengers. This information, gathered by the P-61, has made modern air travel much safer.

⁴⁷ US Department of Commerce and NOAA

⁴⁸ James Rodger Fleming, *Inventing Atmospheric Science: Bjerknes, Rossby, Wexler, and the Foundations of Modern Meteorology* (Cambridge, MA: MIT Press, 2016), 200

⁴⁹ U.S. Department of Commerce, *A Report on Thunderstorm Conditions Affecting Flight Operations* (Washington, DC: United States Government Printing Office, 1949), 1

⁵⁰ U.S. Department of Commerce, *The Thunderstorm: Report of the Thunderstorm Project, a Joint Project of Four U.S. Government Agencies, Air Force, Navy, National Advisory Committee for Aeronautics, and Weather Bureau* (Washington, DC: United States Government Printing Office, 1949), 3

⁵¹ U.S. Department of Commerce, *The Thunderstorm*, 3

⁵² US Department of Commerce and NOAA

⁵³ R. R. Rogers and P. L. Smith, "A Short History of Radar Meteorology," in *Historical Essays on Meteorology 1919-1995*, ed. James R. Fleming (Boston, MA: The American Meteorological Society, 1996), pp. 57-98), 63

⁵⁴ Harold D. Orville, "A History of Research in Cloud Dynamics and Microphysics," in *Historical Essays on Meteorology 1919-1995*, ed. James R. Fleming (Boston, MA: The American Meteorological Society, 1996), pp. 225-259)

⁵⁵ US Department of Commerce and NOAA

The P-61 has a rich history and an even richer legacy, expanding the knowledge of night flight and weather phenomena. Maj. Carrol C. Smith sums up the work of P-61's work well when he says, "Our work was most valuable overall, I expect, in leading the way toward our very effective all weather capability we have today. I guess we were pioneers, at least we would like to think so."⁵⁶

⁵⁶ Stanley E. Logan, David O. Sullivan, and Millie Sullivan, eds., *History of the 418th Night Fighter Squadron: from New Guinea to Japan in World War II: Activated, 1 April 1943, Deactivated, 20 February 1947* (Santa Fe: S.E. Logan Books, 2001), 135



CHAPTER 2

A Survey of the Recognition that the P-61 has Received.



If indeed the P-61 is important, a logical question would then be, “has it been remembered?” While this work will not answer this question directly due to the amount of research required, it will lay down the foundation for answering that question by answering a related question: “What recognition has the P-61 received since its inception in 1940?”

This research complete in this work is, to my knowledge, one of a kind. While on a generic level, the study and surveying of works is quite common, historiography of the P-61 is non-existent. However, it is necessary in knowing whether the P-61 should be recorded more in future works. While this research is preliminary, it sheds light on the extent that the P-61 has been recorded, especially in relation to other aircraft.

Methodology

The method of research was based on this question, “If a high school or college student were to pick up a book on a topic related to the P-61, how likely would it be that book would actually have the P-61 in it and to what extent would that book discuss the P-61?” The

methodology of this research can be broken down into several section, including types of aircraft surveyed, information collected, and the types of sources surveyed.

One Hypothesis and Two Assumptions

The research for this work started with a simple hypothesis: that the P-61 would not be in many of the sources reviewed. This hypothesis is derived from two assumptions. The first, made long before the research for this work was undertaken is that many people (including World War II enthusiasts) do not know about the P-61. This assumption is based on casual conversations that I have had with students, professors⁵⁷ and even several enthusiasts at MAPS Air Museum. In all, I have spoken to one only person (a volunteer at MAPS) who knew about the P-61.

The second assumption was created to better understand the first. This assumption is that other aircraft have had more exposure to the public than the P-61. Logically, it makes sense. If many of sources (and museums) do not mention the P-61, then people would not be exposed to it. This assumption led me to the creation of my hypothesis as a possible answer to the question arising from the assumptions, “Why would the P-61 have less exposure to the public?” Answer: because P-61 has received less recognition in print than its counterparts.

Types of Aircraft Surveyed

The first aircraft this work will be comparing the data on the P-61 is the North



Figure 2.1

American P-51 Mustang (*see Figure 2.1*⁵⁸). Most World War II enthusiasts will know the P-51 Mustang, at least by name. This single engine aircraft was perhaps one of the most famous allied aircraft of the war. Originally underpowered, the P-51B and later models were some of the most successful aircraft of the war. The

⁵⁷ At Malone University.

⁵⁸ USAF, *P-51 Mustang*, photograph, *P-51 Mustang* (USAF), United States Air Force, accessed March 29, 2020, <https://www.af.mil/News/Photos/igphoto/2000593917/>

P-51s were used in a multitude of positions in the war and became the “highest scoring US fighter” in the European theater.⁵⁹ Its fame is the reason that this work will be comparing the P-61's data to the same data collected on the P-51.



Figure 2.2

The second aircraft this work will be comparing the data on the P-61 to is the Lockheed P-38 Lightning, a twin-boom, tricycle landing gear fighter like the P-61 (See Figure 2.2⁶⁰). The P-38 was one of the first twin boom aircraft to be presented to the Army Air Corps and receive a contract for production.⁶¹ This is spectacular as most twin-boom aircraft proposals were rejected. However, the P-38 proved itself to be worthy as its performance was so great that the Army Air Corps revealed the aircraft to the public while it was still in the development stage. It also proved itself on the battlefield as well. “The P-38 had enough firepower to sink a ship— and often did.”⁶² The fact that it looked like the P-61 and the fact that it saw a lot of action is why this work will be comparing it to the P-61

In addition to these two aircraft, this work will look at several other aircraft that would have been considered night fighters in some compacity during the war. While the category of night fighters would include many aircraft, I narrowed it down to a certain number of aircraft before reading about them in the actual text of the book.⁶³ In order for an aircraft to make it onto the list, it had to meet several criteria:

1. The aircraft cannot be a prototype; it must have made it to the field of war.

⁵⁹ Jones, 127-130

⁶⁰ US Air Force, *P-38J Lightning YIPPEE*, photograph, *Lockheed_P-38_Lightning* (Dayton: Wikipedia, September 13, 2017), USAF Museum, https://en.wikipedia.org/wiki/Lockheed_P-38_Lightning#/media/File:Lockheed_P-38_Lightning_USAF.JPG

⁶¹ To my knowledge, the second twin-boom aircraft in the Army Air Corps was the P-61

⁶² Jones, 91-93

⁶³ Robert Jackson, *Air War at Night: the Battle for the Night Sky since 1915* (Shrewsbury, England: Airlife Publishing, 2000)

2. It had to be flown by a major player of the war [which I said were United States, Great Britain, France, Germany, Japan, Russia, and Italy].
3. It must have a closed cockpit.
4. It must have been used by the nation's air force (or facsimile of it).
5. It must be mainly used as a night fighter (not a simple modification, but a different designation) or be the nation's main night fighter.⁶⁴

After going through the list, I narrowed it down to nine aircraft⁶⁵, all of which met the requirements:

1. Boulton Paul Defiant (NF MK II) [British]
2. Bristol Beaufighter [British]
3. Bristol Blenheim (MK IF) [British]
4. De Havilland Mosquito [British]
5. Douglas P-70 [American]
6. Heinkel He219 [German]
7. Kawasaki Ki-45 [Japanese]
8. Messerschmitt Me/Bf110 [German]
9. Potez 630/631 [French]

This work will not discuss the history of each of these aircraft as they only relate to one minor part of the research.

Information Collected

One of my goals when planning the research for this work was to create an easy-to-use survey sheet to fill out when going through each source. A large part of the first semester of the

⁶⁴ On this last point, I added "or be the nation's main night fighter" as it appears that the US was the only country of the war to have different designations for major modifications of an aircraft.

⁶⁵ Ten, if the P-61 is included.

two-semester process that yielded this work was to create a functioning “source information sheet” (which I will abbreviate SIS). Even with the final SIS, there were several guidelines that had to be created as the research continued due to the wide variety of sources creating problems for “one-size-fits-all” SIS.

The final version of the SIS which was used for this work included several parts. The first part was general information about the source, including citation information and the “genre” of the source.⁶⁶ The second section asked whether or not the book mentioned in any capacity the P-61, P-51, or P-38. The third section asked how many paragraphs the source used to discuss the P-61, P-51, and P-38

The next section simply asked if the P-61 was recorded correctly according to the four main sources used in detailing the history of the P-61 recorded in Chapter 1 of this work. This required the section on the P-61 in the source to be read in order to determine whether the information presented was accurate (as based on the four sources). If there were problems, I would record them. The findings from this section are in this work’s appendices.⁶⁷

The final section asked whether any other night fighters on my list were mentioned. This required looking up the aircraft in the book’s appendix to see if it was mentioned. If it was, it would record it. However, it became quite apparent that the night fighters on my list had other roles in air war of WWII like day fighting or bombings. To counteract this, if an aircraft was mentioned, it would be recorded. If the fighter’s night fighting capabilities were not mentioned, it would be noted. It will appear on the graphs later in this work.

An entire blank SIS can be found in the Appendix, as well as a sample of a completed source sheet (the Jones source).

⁶⁶ See “Types of Sources Surveyed” section for a description of source “genres.”

⁶⁷ I made the mistake of not recording page numbers for these errors, resulting in that particular data not being entered into the many body of this work.

While this simple SIS created a path for the research to be completed, it created problems as the wide variety of sources and ways the aircraft were mentioned caused confusion as to what to look for, how to look for it, and what should be counted. To combat this, I created rules to help guide the research, taking into considered the time constraints of an undergraduate thesis when creating these rules.

Three of the rules dealt with what could be considered a paragraph in questions 6-8. These rules stated that for a paragraph to be counted it required the following:

1. Not to be description of a figure or an italicized text that was complementary content of a figure.
2. To have its subject be the aircraft in question.⁶⁸
3. To be a bullet point within the margins of the main text of the book.⁶⁹

The final rules determined what sources would be counted and how I would look for the aircraft in the source.

4. If the book is excessively long (100+ pages) and/or has large amounts of text in small fonts and does not have the aircraft in question in the index, then an exhaustive search the for that aircraft would not be completed.⁷⁰
5. Books that resemble children's books will not include in the research.

This SIS was the first of two phases of research. The second phase of research is secondary in nature because it was designed to get more sources for the main chronological graph. The research for it was done by filling out a sheet that included bibliographic information

⁶⁸ Stories involving the aircraft in question were allowed if the focus of the paragraph was on a pilot's personal story or a story that the aircraft took a large role in. The writing of the story also had to be done in such a way as to clearly show the aircraft's involvement in the story. Paragraphs that gave background information to the story were allowed, but at the researcher's (my) discretion.

⁶⁹ Any time the word "paragraph" is used in relation to the results of the research, it will be the main text.

⁷⁰ This was due to time constraints

and three questions asking if the source mentioned the P-61, P-51, and P-38. This phase followed the (applicable) rules for that had been set during phase one. A sample sheet from Phase II is included in the appendices.

Types of Sources Surveyed

There a wide range of sources that could have been sampled in this research. However, this work will focus on four types of sources (which will be henceforth called “genres”) as they would be the most likely to mention the P-61. The “genres” are as follows:

1. Sources discussing the general history of World War II.
2. Sources discussing the general history of aircraft and aircraft technology.
3. Sources discussing specifically aircraft used in World War II
4. Sources discussing specifically fighter aircraft.

These four types of sources fit into the P-61's story because the P-61 was the first American aircraft to be built specifically to fly at night (aircraft history and technology) as a fighter (fighter aircraft) and was built and flown during World War II (WWII fighters and history of WWII).

In all, this work will look at the research done on sixty-seven sources, done in two phases of research. In Phase I (the major part of the research) had fifty sources and in Phase II (the minor part of the research) had seventeen sources. Of the fifty sources surveyed in the first phase of the research, twelve of them fit into the category of “General History of World War II”; seventeen fit into the category of “General History of Aircraft and Aircraft Technology”; twelve fit into that of “Aircraft Used in World War II”; and nine into “Fighter Aircraft.”

Looking at the Data: The Results, Part 1: All the Sources

After finishing both phases of research, the information was entered into data charts from which graphs were extrapolated. These graphs are the basis of the arguments made later in

this work. When all the graphs are viewed, a picture starts to emerge of how the P-61 has been recorded in the different genres of literature discussed in this work. Finally, enlargements of all graphs presented in this work can be found in the appendices.

This graph (*Figure 2.3: Number of Sources that Mention Aircraft Based on Chronological Timeline*)

is

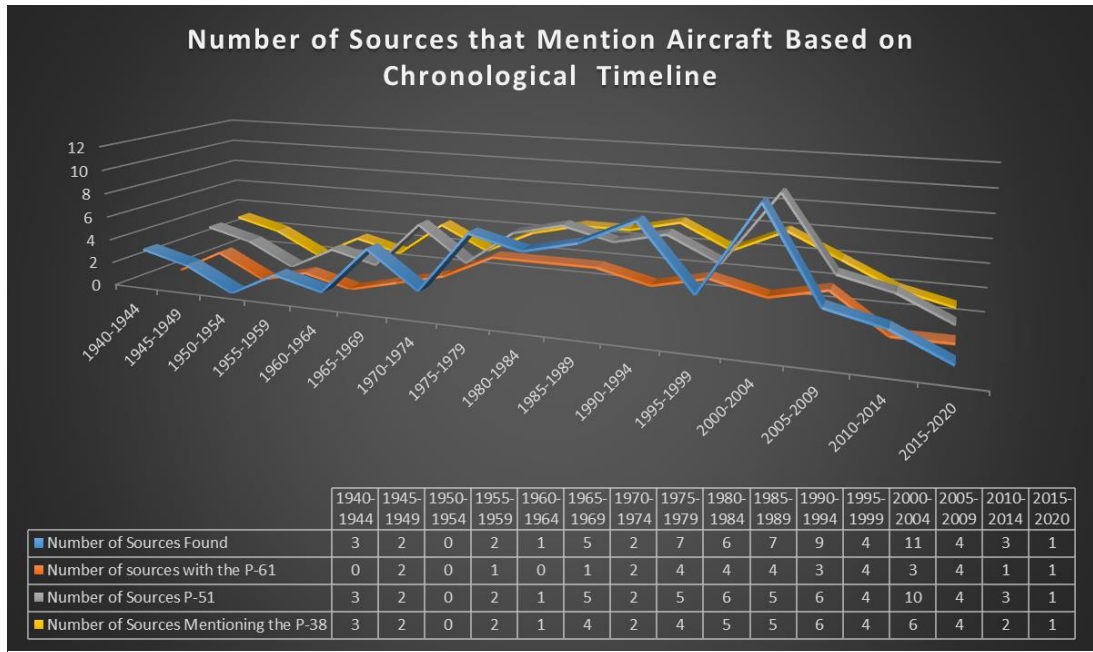


Figure 2.3

perhaps the most important of the graphs in this work for several reasons. First, it has the most sources. Phase two of the research was specifically designed to add more sources to this graph. It indeed

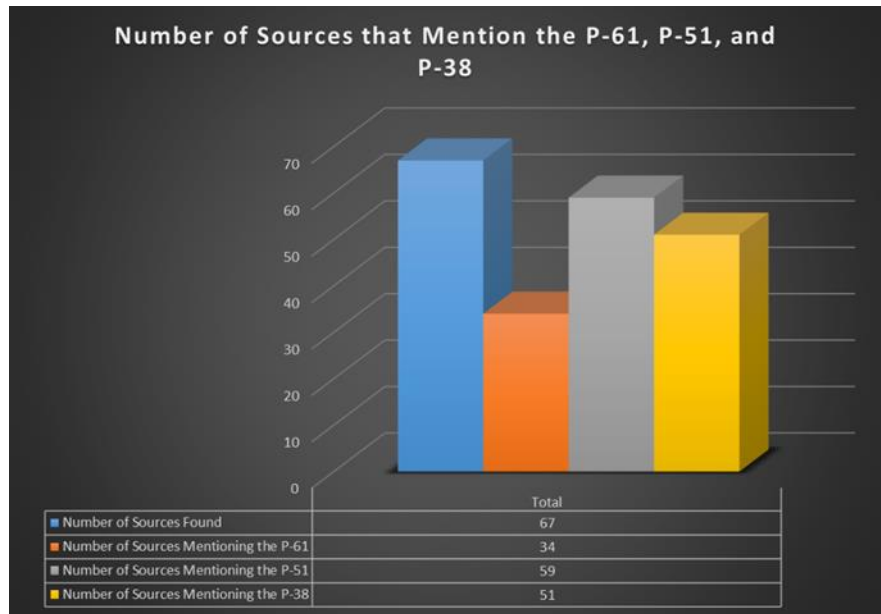


Figure 2.4

tells an interesting story as the P-61 is the least mentioned aircraft while the P-51 is the most

mentioned aircraft (See Figure 2.4: *Number of Sources that Mention the P-61, P-51, and P-38*). The second graph gives the totals number of times each aircraft is mentioned.

There are a few interesting things about the Figure 2.3. First the number of times that the P-61 is mentioned remains the same throughout the years, despite having a wide fluxuation of the number of sources, especially during the period from 1975-2009, even though the other aircraft fluctuate more with the number of books presented. Second, there is an apparent drop off on the number of times that the P-61 is mentioned in the sources looked at from 2005-2009. Out of eleven sources, only three mentioned the night fighter. This might be, in part, due to the loss of “the consistently high interest in that the USAF once could take for granted” that has long since passed as the Cold War had either brought into reality or destroyed the dream of flights that abounded after World War II.⁷¹ Finally it is apparent that there is a lack of sources that mentioned the P-61 during 1940-1944. This half-decade is the only one that has more than two sources and does not have a single mention of the P-61. This is, I believe, because of the secrecy of the P-61 during its development and that the P-61 did not make it onto the field until 1943; the authors of these sources from this period would not have had access to much information on the P-61.

However, while figures 2.3 and 2.4 give an excellent picture of how often the P-61 was mentioned, it does not give a complete picture. Indeed, just because a source mentioned an aircraft does not mean that it discussed much, if at all. The aircraft could be simply mentioned in relationship to something, a footnote in the book’s annals that provides an interesting fact of information that has no truly important relation to the larger subject at hand. By looking at how

⁷¹ Alan J Vick, *Proclaiming Airpower: Air Force Narratives and American Public Opinion from 1917 to 2014* (Santa Monica, CA: RAND, 2015), xii-xiii

many paragraphs⁷² each source used to discuss the aircraft, we can truly see how much recognition the P-61 has received.

Looking at this graph (see Figure 2.5: Average Number of Paragraphs Used to Discuss the P-61, P-51, and P-38), the first thing that one can notice is that there are fewer paragraphs discussing the P-61

overall than the P-51 or P-38. This difference is seen when

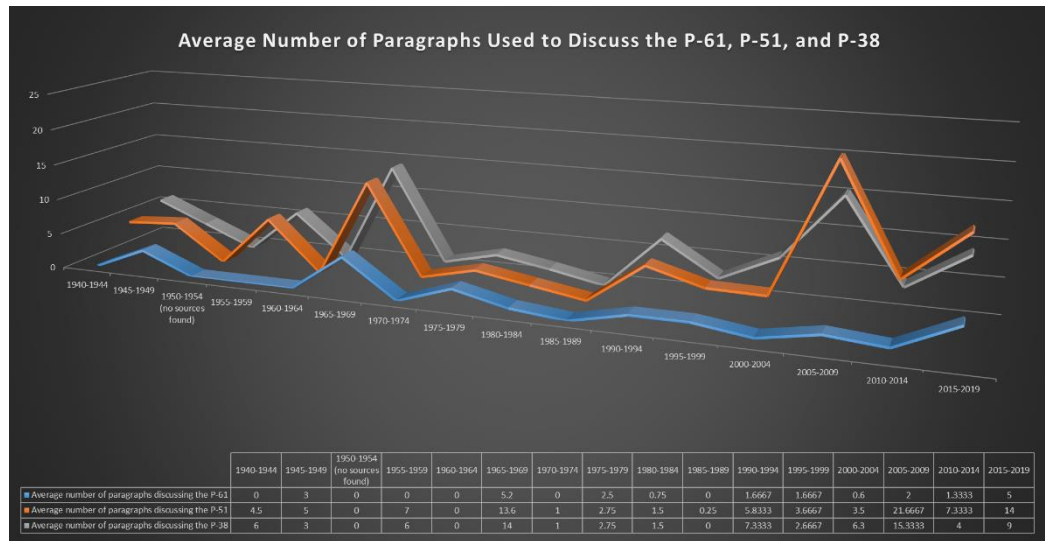


Figure 2.5

looking at

the total number of paragraphs that all the sources used to discuss the aircraft (see Figure 2.6: Total number of Paragraphs Used by all of the Sources Collectively Discuss the P-61, P-51, and P-38).

Both the P-51 and P-38 have about 300 paragraphs over 50

sources (an exact average of 5.9 and 5.88 per source, respectfully). However, the P-61 only has

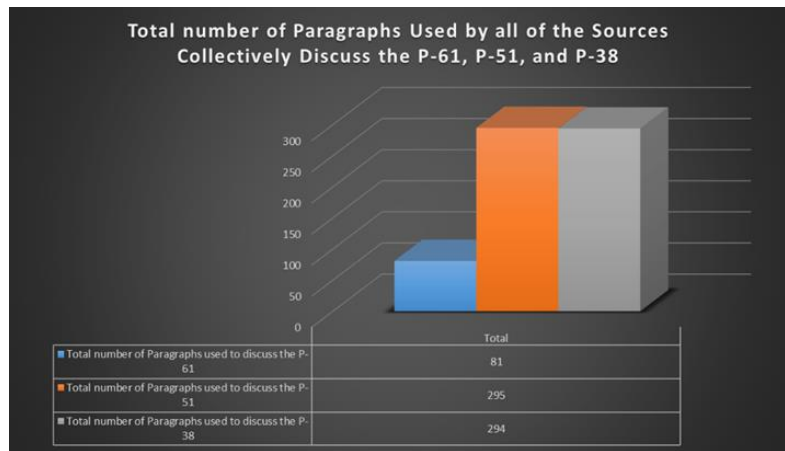


Figure 2.6

⁷² It is at this point where the data moves from all 67 sources to the 50 sources that were part of the in-depth research.

81 paragraphs, which leads to an average of 1.62 paragraphs per source over 50 sources. This is a huge difference.⁷³

Looking at the Data: The Results, Part 2: The Several “Genres”

While an interesting picture arises when looking at the overall data, looking at the individual genres provides an equally interesting picture. The

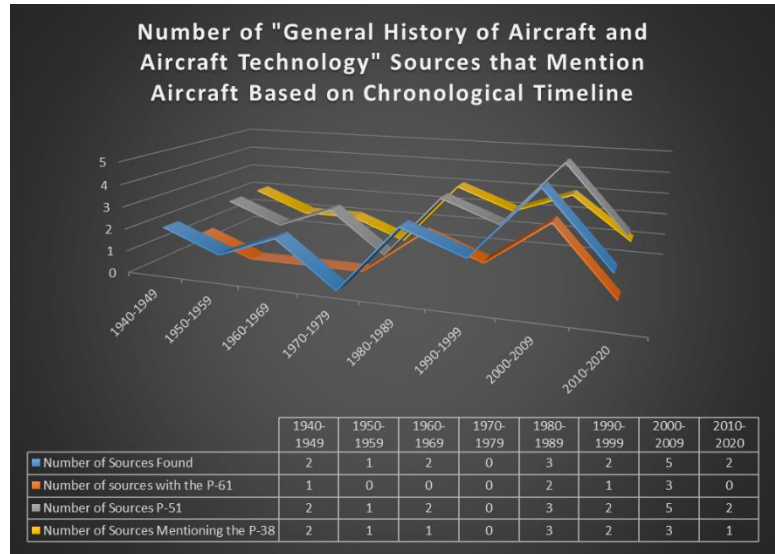


Figure 2.7

numbers of the graphs that focus on all the sources do not represent the wide variety of the

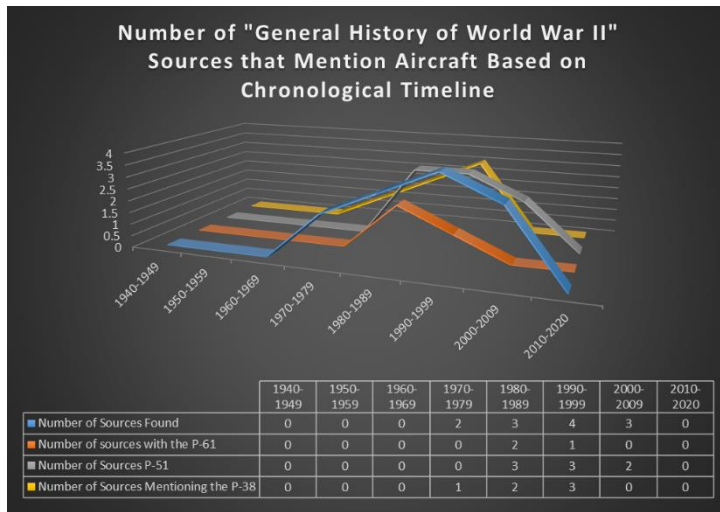


Figure 2.8

sources that exist. Indeed, this is one of the reasons for breaking down the sources into genres, to show if there are certain genres that had extremes in the data.⁷⁴

Chronological Timelines

In looking at the chronological timelines for each genre (See Figure 2.7: Number of

"General History of Aircraft and Aircraft Technology" Sources that Mention Aircraft Based on Chronological Timeline, Figure 2.8: Number of "General History of World War II" Sources that Mention Aircraft Based on

⁷³ Now it must be understood that this data is overall. There were sources that gave equal, if not more page space to the P-61 than the other aircraft. However, overall, the P-61 received less page space than the other aircraft.

⁷⁴ Due to the limited space devoted to each group of graphs, blowups of the graphs are in the Appendices.

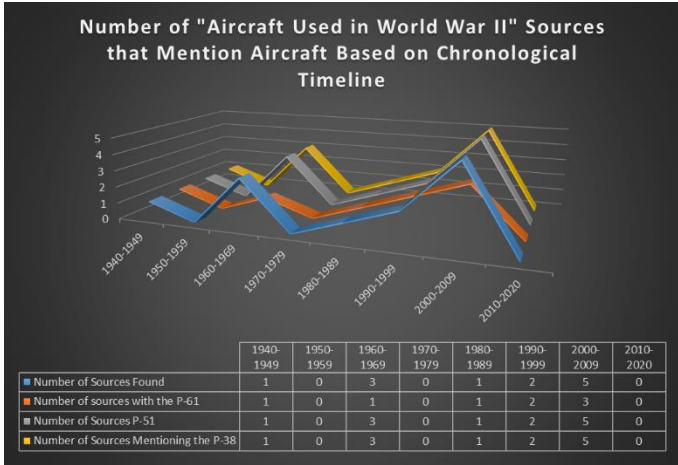


Figure 2.9

Chronological Timeline, Figure 2.9: Number of "Aircraft Used in World War II" Sources that Mention Aircraft Based on Chronological Timeline, and Figure 2.10: Number of "Fighter Aircraft" Sources that Mention Aircraft Based on Chronological Timeline), it becomes clear which sources affected the main chronological timeline seen

earlier as well as how the recognition each aircraft receives in each genre differs. Now it must be understood that not every genre has sources for all eight decades looked at in the research for this work.⁷⁵

In looking at figures 2.7-2.10 for the genres, something becomes apparent; namely, the type of source one looks at has a

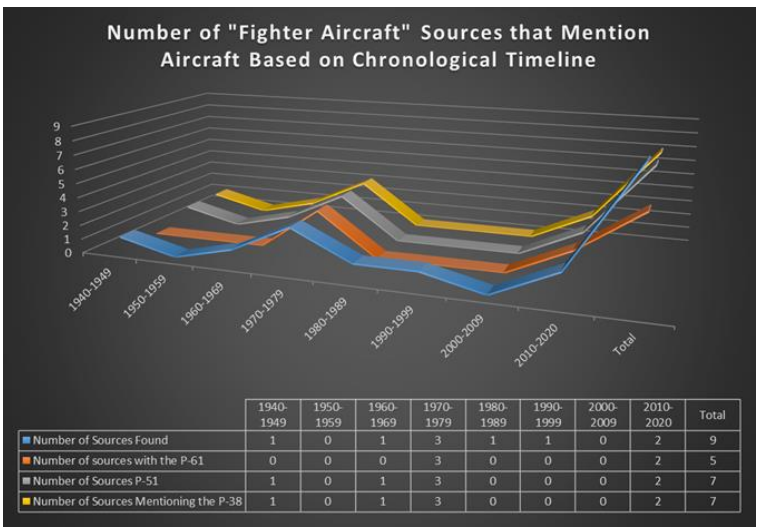


Figure 2.10

large influence on whether the P-61, P-51, or P-38 will be in it. It also becomes apparent (*see Figure 2.11: Number of Sources that Mention the P-61, P-51, and the P-38; Based on Type of Source*) that the P-61 (lightest grey line) is consistently mentioned less than that of the P-38 (black line) and especially the P-51 (light grey line) across all the genres.

⁷⁵Every genre has at least one decade where there were no sources found. This is due to the time constraints of the research discussed previously. While there would have been more sources available for research, I was not able to access them in the timely manner needed for their inclusion in this work.

Paragraph Distribution

In looking at the distribution of each genre in relation to the number of paragraphs used to discuss the P-61, P-51, and P-38 (see Figure 2.12: Total Number of Paragraphs used by all of the

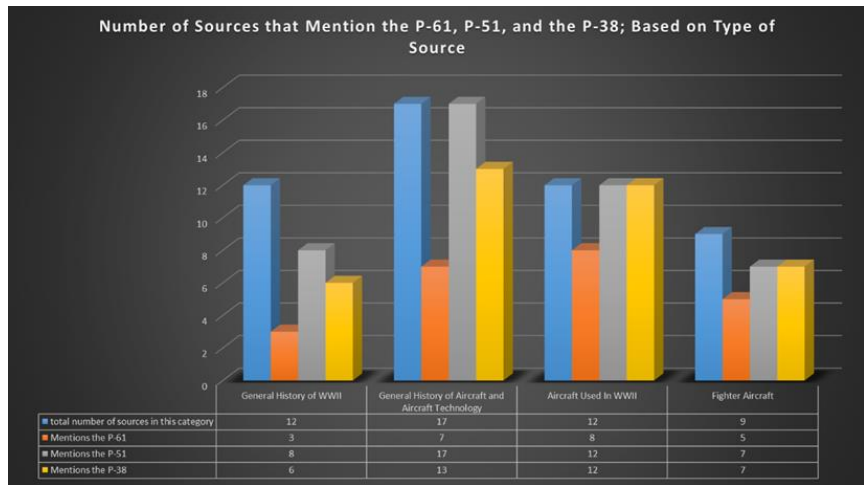


Figure 2.11

sources to discuss the P-61, P-51, and P-38), it becomes apparent that type of genre has a huge influence on to what extent an aircraft will be discussed. This can be seen in the multiple genres. “Aircraft Used in World War II” sources are more likely to have individual sections discussing each aircraft, leaving room for the book’s author to spend more time discussing its development

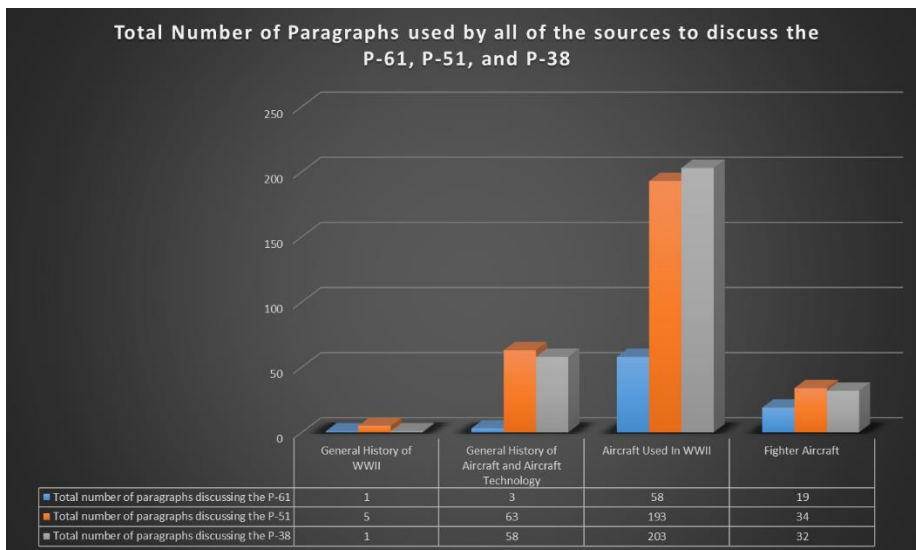


Figure 2.12

and service history, translating into more paragraphs used to discuss each aircraft. “General History of WWII” has barely any paragraphs discussing any of

the aircraft, most likely because WWII is a historical large subject that individual aircraft are not likely to be mentioned outside the role they played in larger military actions.

This difference seen in figure 2.12 translate into how many paragraphs on average that each source in each genre spend discussing each aircraft (see Figure 2.13: Comparison of Source Types

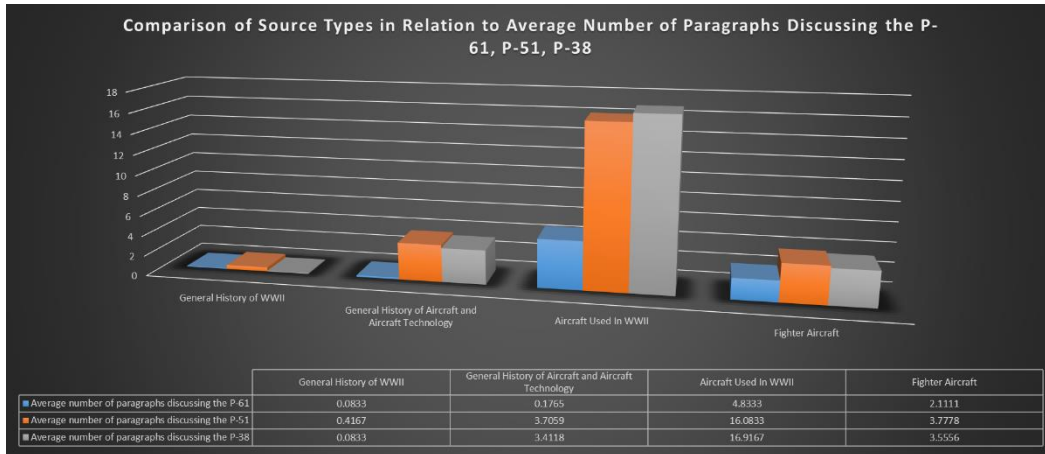


Figure 2.13

in Relation to Average Number of Paragraphs Discussing the P-61, P-51, P-38). This

is important because it shows what the likely number of paragraphs about an aircraft that are going to be in a source. The difference between the average number of paragraphs used to discuss the P-61 and the other two aircraft is pronounced; possibly even more pronounced than in figure 2.11.

Night Fighter Distribution among the Types of Sources.

Now that we have seen how each source mentioned the P-61, P-51, and P-38, we need to look at how the genres look at night fighters. This is helpful as these fighters are closer to the type and use of aircraft that the P-61 was during the war. As such, they show how to what extent other night fighters were mentioned in the sources.⁷⁶

⁷⁶ Upon calculating the data for this work, it was brought to my attention that one source, *Fighters, 1939-45: Attack and Training Aircraft* by Kenneth Munson [Kenneth Munson, *Fighters, 1939-45: Attack and Training Aircraft* (New York, NY: Macmillan, 1969)], did not have the night fighters recorded. However, I was unable to reacquire the source before the time that this work had to be completed due shutdown associated with the coronavirus pandemic of 2020. Therefore, this section only looks at 49 sources as I cannot guarantee that Munson did not mention other aircraft on the list.

In looking at the specific categories (See Figures 2.14: Night Fighters Mentioned in the Category of

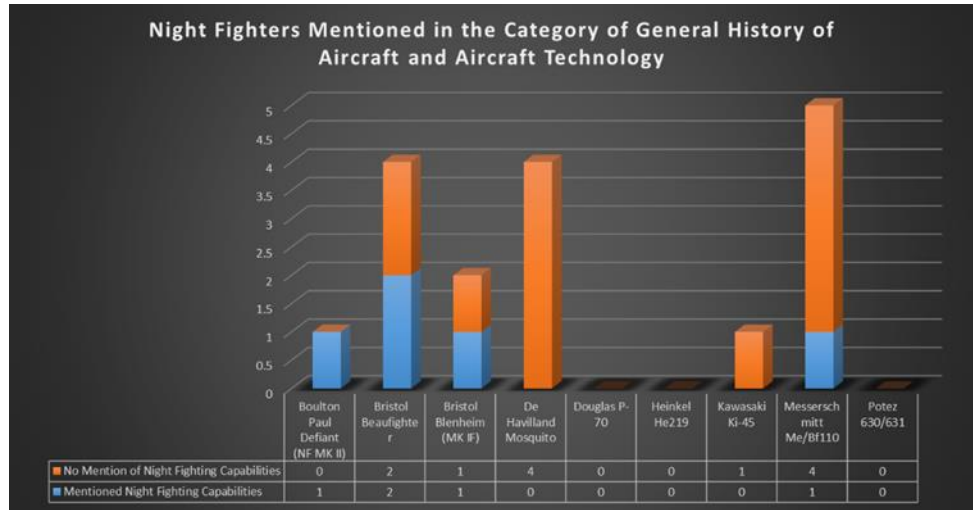


Figure 2.14

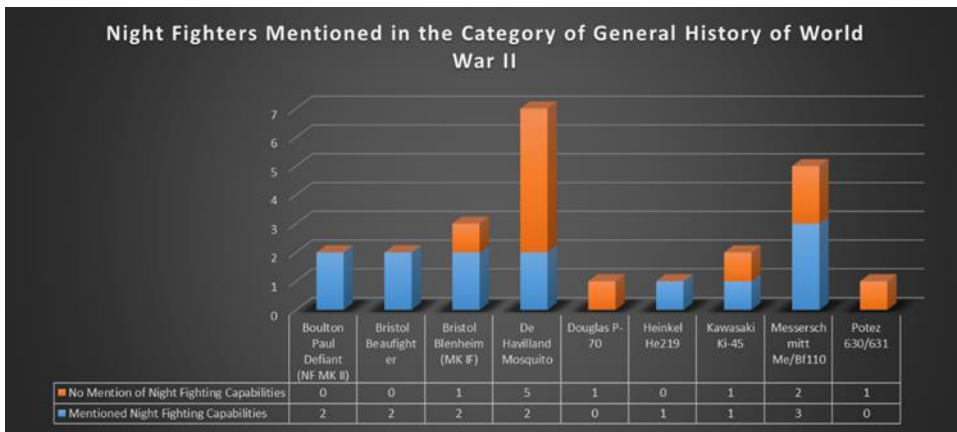


Figure 2.15

General History of Aircraft and Aircraft Technology, Figure 2.15: Night Fighters Mentioned in the Category of General History of

World War II, Figure 2.16: Night Fighters Mentioned in the Category of Aircraft used in World War II, and Figure 2.17: Night Fighters Mentioned in the Category of Fighter Aircraft), it becomes apparent that while all of the aircraft were mentioned in almost all of the genres, in what capacity the aircraft are mentioned varies greatly I would believe that this is due to the direction that each genre of sources follows. It is also interesting to note that the Bristol Beaufighter, De Havilland Mosquito, Messerschmitt Me/Bf 110 that are mentioned just as much or more than that of the P-61 in several individual genres (See Figures 2.15 and 2.17).⁷⁷ This appears to show that in these

⁷⁷ The P-61 is not shown on figures 2.14-2.17. See previous graphs for information.

two genres, the Mosquito, Me/Bf 100, and the Beaufighter are just as, if not more important than the P-61 to the authors in their writings.

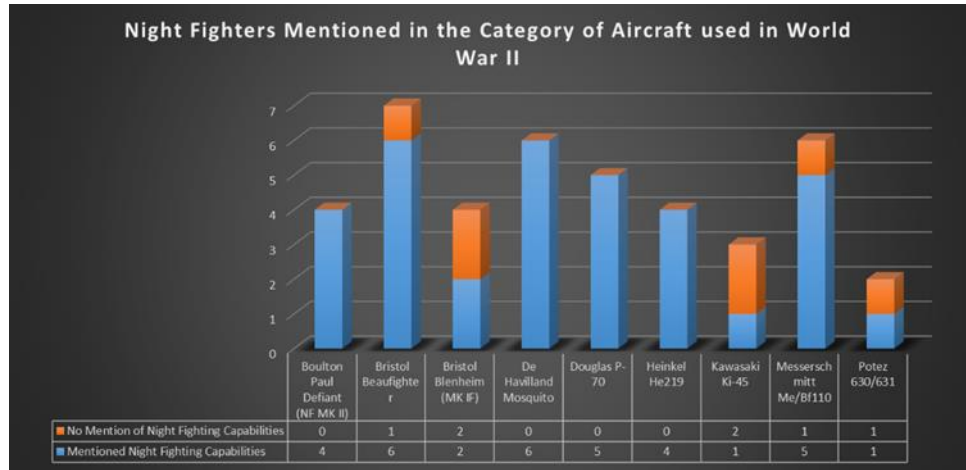


Figure 2.16

However, in looking at all the sources (save the Munson source) combined, a picture emerges that shows how the P-61 has been discussed compared to other night fighters (See Figure

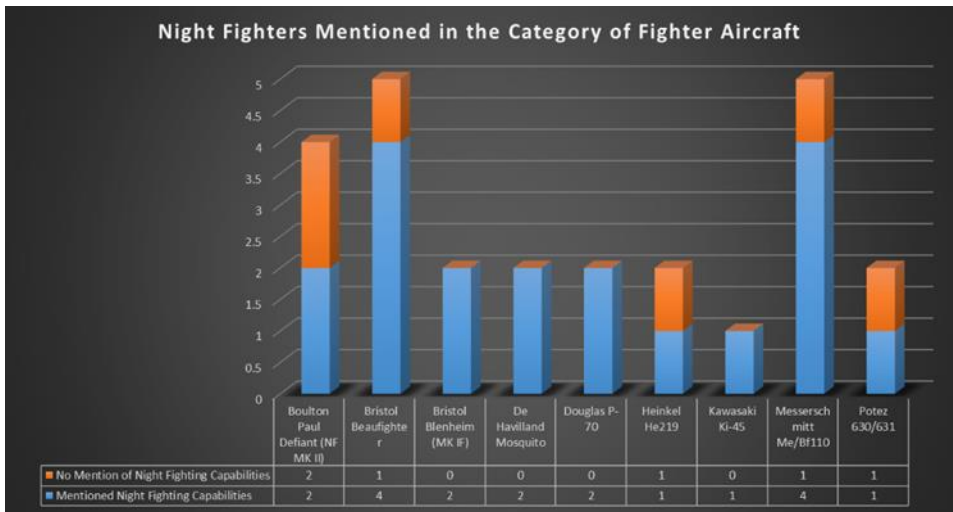


Figure 2.17

2.18: Night Fighters Mentioned in all Sources).

Across the 49 sources, these nine aircraft were mentioned 107 times. Of those times, 71 of them

(≈66%) mentioned the aircrafts night fighter capabilities and 36 (≈34%) of them did not mention the aircraft. However, what is more surprising is the overall lack of times that these aircraft are mentioned at all. In all, no aircraft beat the number of times that the P-61 was

mentioned⁷⁸ (mentioned in 23 sources⁷⁹) with the Messerschmitt Me/Bf 110 being the closest

(mentioned in 21 sources). One of the reasons I think that this is happening goes back to subject of the particular source. During

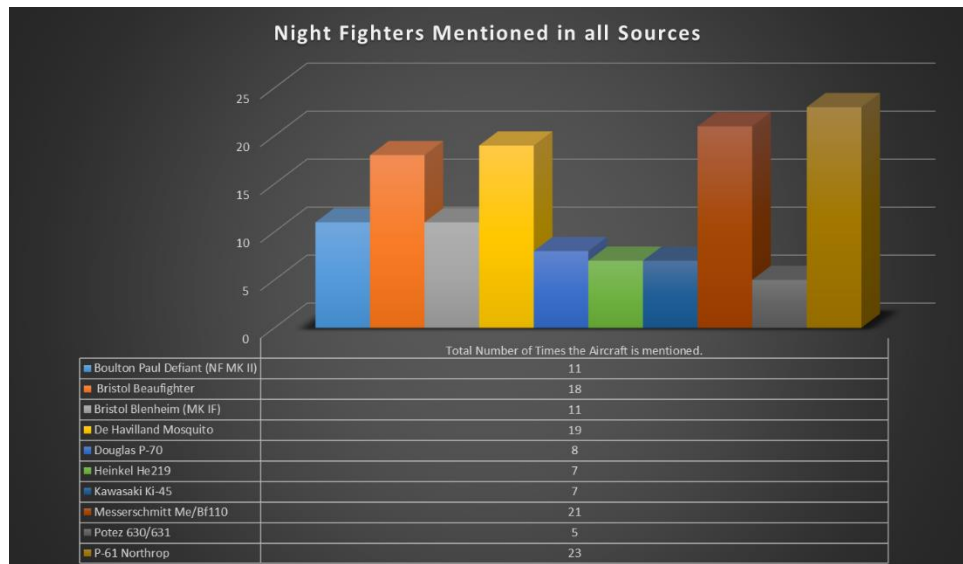


Figure 2.18

World War II,

there were numerous types of aircraft used in the war, let alone developed and tested. An author must sift through all these aircraft and pick which aircraft he/she thinks is worthy to be in his/her book. The fact that ‘night fighting’ aircraft is not mentioned at much as other aircraft like the P-51 or P-38 is a telling sign of the lack of recognition night fighting has received overall.

Understanding the Data: Drawing Conclusions

In looking at the data, it can be clearly seen that the P-61 consistently has received less recognition than the P-51 and the P-38. This data answers the question that this work set out to answer: What recognition has the P-61 received, especially when compared to its contemporaries the P-51 and the P-38?

However, to what extent has the P-61 received less recognition? In general, there is about a 51% chance of the source mentioning the P-61, compared to the P-51 (about 88%

⁷⁸ Out of the 49 sources.

⁷⁹ Munson did not mention the P-61.

chance) and the P-38 (about 76% chance). This means that overall, the sources discussed the P-51 and P-38 about 264% more than the P-61 (when looking at the total number of paragraphs). Simply put, if a person were to pick up a source on a subject related to the P-61, there is about a 50/50 chance that the aircraft will actually be in it.

Possible Reasons

So then, what might have caused this lack of recognition? There are several reasons that I believe, in part, have contributed to this lack of recognition. While these reasons will be discussed here, they will not be discussed fully. The realm of this work does not extend to concretely judging the validity of these reasons, but only extending them as possibilities.⁸⁰

The first reason is the difference in the number of airframes that were built of the P-61, P-51, and P-38. The P-61 had 742 airframes built, including F-15 variants [See Figure 2.19:

Number of Aircraft Produced

(Including Variants)].⁸¹ The P-38 and its variants had about 1,234 % more airframes built (about 9,900).⁸² The P-51, however, had 1,895% more airframes built (about 14,800).⁸³ This difference is significant. If an aircraft has

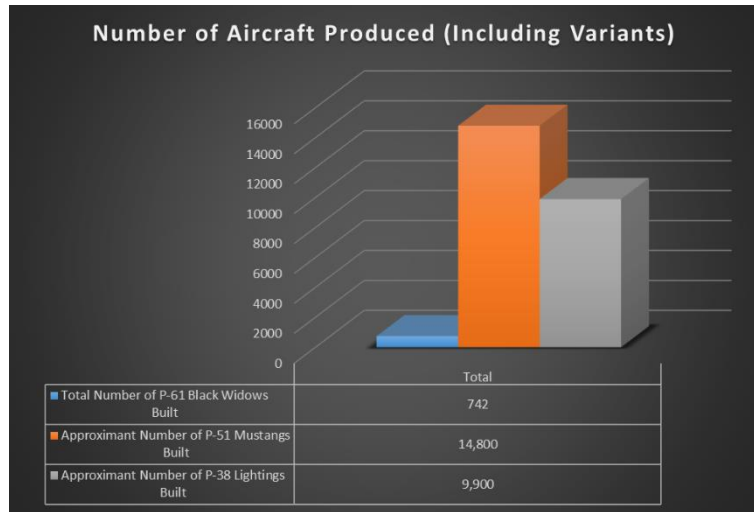


Figure 2.19

had more airframes built, it is more likely (by sheer statistics) to get into the hands of pilots. The more pilots that fly an

⁸⁰ The job of proving these possible reasons is relegated to a future work built off this work.

⁸¹ Kolln, 22

⁸² John F. Guilmartin, "P-38," Encyclopædia Britannica (Encyclopædia Britannica, inc., June 14, 2019), <https://www.britannica.com/technology/P-38>

⁸³ John F. Guilmartin, "P-51," Encyclopædia Britannica (Encyclopædia Britannica, inc., July 18, 2019), <https://www.britannica.com/technology/P-51>

aircraft, the more stories there are of that aircraft circulating to write down as history or to make the aircraft better known.

The second possible reason for the lack of attention that the P-61 has received is the number of airframes still in existence today. This is important because the more airframes there are in existence, the more likely people will be exposed to them, know about them, and write about them, allowing the aircraft to be recognized.

At this point, the P-61 only has four non-airworthy airframes [although the Mid-Atlantic

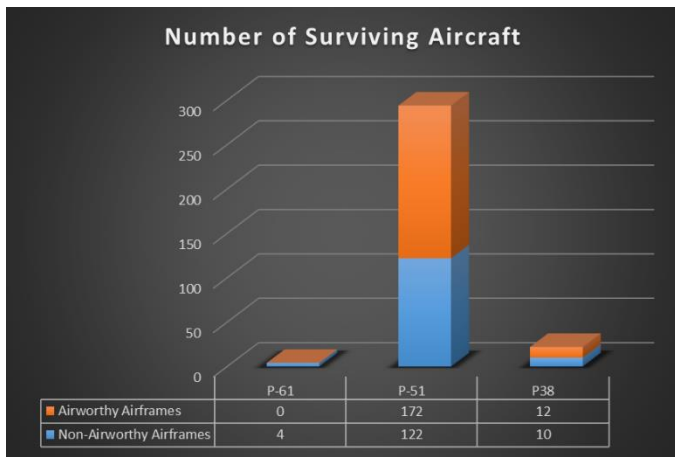


Figure 2.20

Air Museum is restoring a P-61 to airworthiness], the P-51 has 172 airworthy airframes and 122 non-airworthy airframes,⁸⁴ and the P-38 has 12 airworthy airframes and 10 non-airworthy airframes (See Figure 2.20: *Number of Surviving Aircraft*).⁸⁵ Because

both the P-51 and P-38 have aircraft

that are not only airworthy, but actually fly,⁸⁶ these aircraft can be exposed to more people as they can fly to people in different locations. Because the P-61 only has four non-airworthy airframes, people have to go somewhere and see it, drastically decreasing the P-61’s exposure to the public.⁸⁷

A third possible reason for the lack of attention that the P-61 has received may be that the P-61 did not do anything spectacular. If an aircraft does something considered “famous” in

⁸⁴ P-51 Mustang Survivors - MustangsMustangs.com, accessed March 28, 2020, <https://www.mustangsmustangs.com/p-51/survivors/>

⁸⁵ Surviving P-38 Lightnings, accessed March 28, 2020, <https://www.p38assn.org/surviving.htm>

⁸⁶ Some of the airworthy airframes are not actively flying.

⁸⁷ To complicate matters, one must go to China or to the eastern United States to see a P-61.

the public's eyes, then it is more likely to be remembered and be recorded. In the course of researching for this work, I found no individual wartime event that was spectacular enough to be written about in the history books for the P-61 or the P-51. While neither aircraft took part in a specific famous action of the war, the P-51 was the highest-scoring fighter in the European theatre with almost 5000 kills.⁸⁸ And the P-38 was fighter responsible for the death of Admiral Yamamoto, "commander in chief of the Japanese combined fleet,"⁸⁹ something that would have certainly hurt the Japanese, both with strategy and morale.

The final possible reason for the lack of attention that the P-61 has received to be discussed in this work is the changing culture and society. While this reason is too complicated to discuss in any depth in this work due to the number of factors that are too interconnected and complex to break down and focus on, one factor, the extreme shift in how the public has viewed the USAAF, will be briefly discussed here.

In 2014, the Air Force Commissioned the RAND Project in order to understand several things related to the Preparedness and Public relation of the Air Force. From this report, Alan Vick focuses on how "USAF public narratives and popular attitudes towards airpower [have] evolved over the past century."⁹⁰ Vick argues that the Air Force had a social currency, brought on by the newness of airplane technology⁹¹ and its role in ending WWII.⁹² After WWII, "airpower was strongly associated with the Japanese's surrender and the emerging concept of strategic nuclear deterrence."⁹³ However, as the newness of the technology or its impact on WWII waned, so did the public's interest in the air force.⁹⁴ This loss of interest in the Air Force

⁸⁸ Jones, 130

⁸⁹ Walter J Boyne, *World War II Aircraft* (San Diego, CA: Thunder Bay Press, 2006), 31

⁹⁰ Vick, iii-iv

⁹¹ Ibid, xii

⁹² Ibid, xiv

⁹³ Ibid, xiv

⁹⁴ Ibid, xiii-xiv

by the public was also caused by a rise in the belief that there was no one military branch that was better than another.⁹⁵

These four reasons help to create a possible picture as to why the P-61 has received less recognition than the P-51 and the P-38. They are not concrete, but simply theories. However, they are plausible enough to warrant further research.

Moving Forward: Further Research

Research is never completed, and this work is no exception. However, the idea of looking at the historiography of how something (like an object or a historical event) has been recorded in published works has been, from my research, very rare.⁹⁶ There are many ways that one could do research, with this work as his/her foundation, both horizontally (the same type of research) or vertically (different research built off of this work). Graduate and doctoral students may wish to focus on the “vertical” research while undergraduate students may wish to focus on the “horizontal” research. This work provides several possibilities to inspire readers and researchers to go and do their own research.

Moving Out: Horizontal Research

There are several different research projects that one could do based off the research for this work. These works would be surveying in nature, just as this work was. Since the vastness of sources (including books, electronic and visual) is seemingly infinite, no one project or group of projects could ever hope to cover all the sources. However, this type of research is vast enough to enable research that answers questions such as the following:

- How does the P-61 compare to other aircraft such as transport aircraft, bombers, and/or other types of fighters?

⁹⁵ Ibid, xiv

⁹⁶ So rare, in fact, that I have not come across it.

- How does the P-61 compare to modern day fighters? Early (c. 1900-1920) fighters?
- How do multiple aircraft of types of aircraft compare in amount of recognition?

Moving Upward: Vertical Research

In continuing the research presented, a specific avenue of study and academic work is needed, namely using the P-61 as a case study to see how and why certain historical events/artifacts receive less recognition. This work is foundational for that project as it has looked at whether there is any basis (in the printed word) to support the validity of the idea that the P-61 has received less recognition. This would first require a survey showing that both academics and non-academics in general do not know about the P-61. Then several of the hypotheses presented in this work would need to be tested through the use of other historical events/artifacts that relate to P-61's situation. This would require focusing on cultural change as that factor affects multiple disciplines. It would show a more complete picture of how a changing culture has affected the view of any one discipline, specifically [for that future work] history. Finally, all the information then collected would be used to create the final work (of this thread of research), answering the question presented above. That work would be comprehensive, most likely based on years upon years of research. It would matter as it would allow historians to better understand how, in our modern era, society interacts with history and how to use that interaction to bring back into focus important historical events/artifacts.



CONCLUSION



The P-61 Northrop “Black Widow” Night holds a rich legacy that has been largely forgotten. This work shows that it has received less recognition than other contemporary aircraft and lays the foundation for future research. This can be used by future writers, historians, and researchers to shed more light onto the P-61 and its importance. In presenting the P-61 in an academic way, there is hope that this fighter, and other aircraft will enter the academic world.

There is still much work to be done on this subject, and this work covers just a small fraction of it. This work has laid down a foundation that can be used by researchers and historians in the future to do more work in the field. There is hope that others will “take up the torch,” as it were, and continue work on this line of research, both with the P-61 and with other aircraft. The more academic work that is done, the more likely it is that the Black Widow will be recognized for its importance during, and especially, after the war.

But this work has shown more than just the fact that the P-61 has been largely forgotten. It has given a snapshot of technological innovation during the war. It has taken that snapshot

and given it a three-dimensional form. It has added to the voice of the brave pilots who flew those dark skies, fighting for freedom in what could be considered one of the greatest wars that this planet has ever experienced. Through this work, their work will not be forgotten.

I shall end this work with a poem that was a favorite of Maj. Carroll C. Smith and that I think it sums one of the main groups of people this work is dedicated to, the pilots of the United States Army Air Corps who braved the dark of night in the P-61 Black Widow.

Combat Pilot

The story is now over, the chapter's closed and yet...

written in my memory is a place I can't forget.

Where all my boyhood dreams met the light of day

and long forgotten values refused to fade away.

This place of men and heroes, the finest I would meet

whose actions spoke of virtue and whose courage stood concrete.

Where love took on new meaning, where friendship did, too,

while the serious side of life shouted 'attention' at you.

A time for nerves of steel, when shakin' to the core,

knowing all my limits—I learned to push for more,

'cause beneath my trembling hand that mighty bird could shine,

but it was living, not power that was always on my mind.

Every call a close one, any time of day—

and every flight out was another time to pray.

*Another mission over and I'd be worn to the bone
adding hope to weary hope that I might make it home.*

*I never dreamed back then standing face to face with fears
someday they'd be behind me; all those war-torn years.
And the medals still remind me every birthday is a friend
'cause I lived to read that story, from its beginning to its end.⁹⁷*

⁹⁷ Logan, 135



APPENDIX



Appendix #1: Graphs Presented in this Work

The graphs presented in this work are also placed here for closer inspection of data.

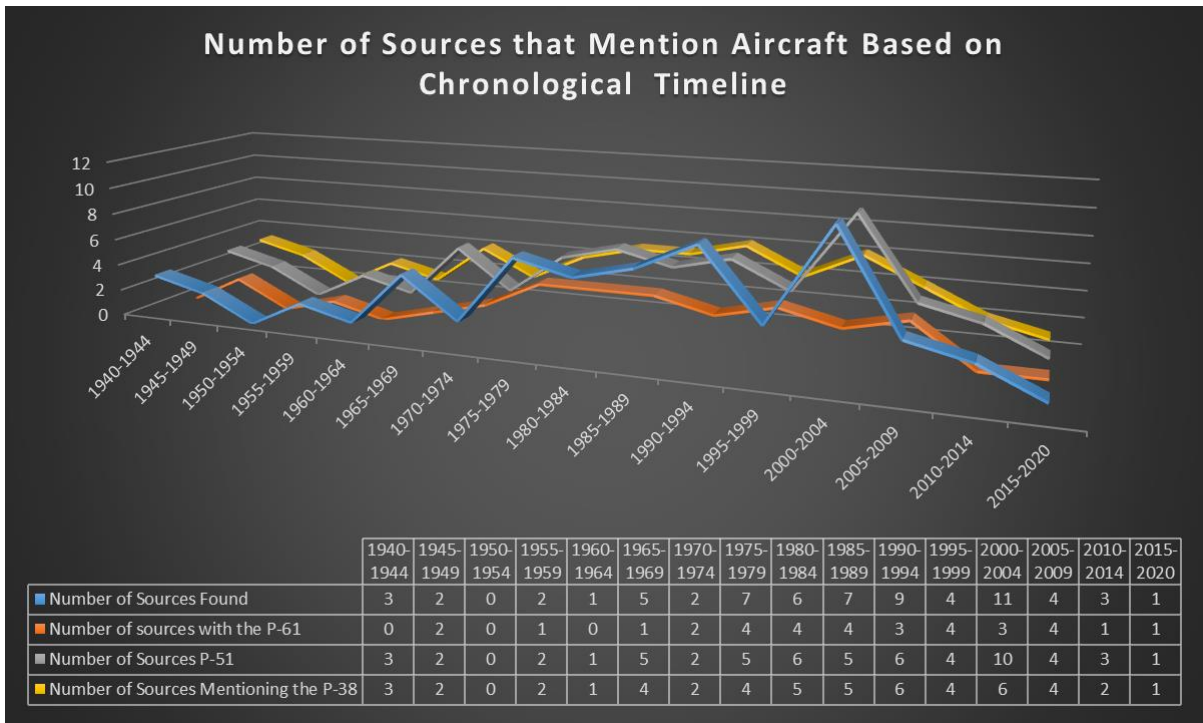


Figure 2.3

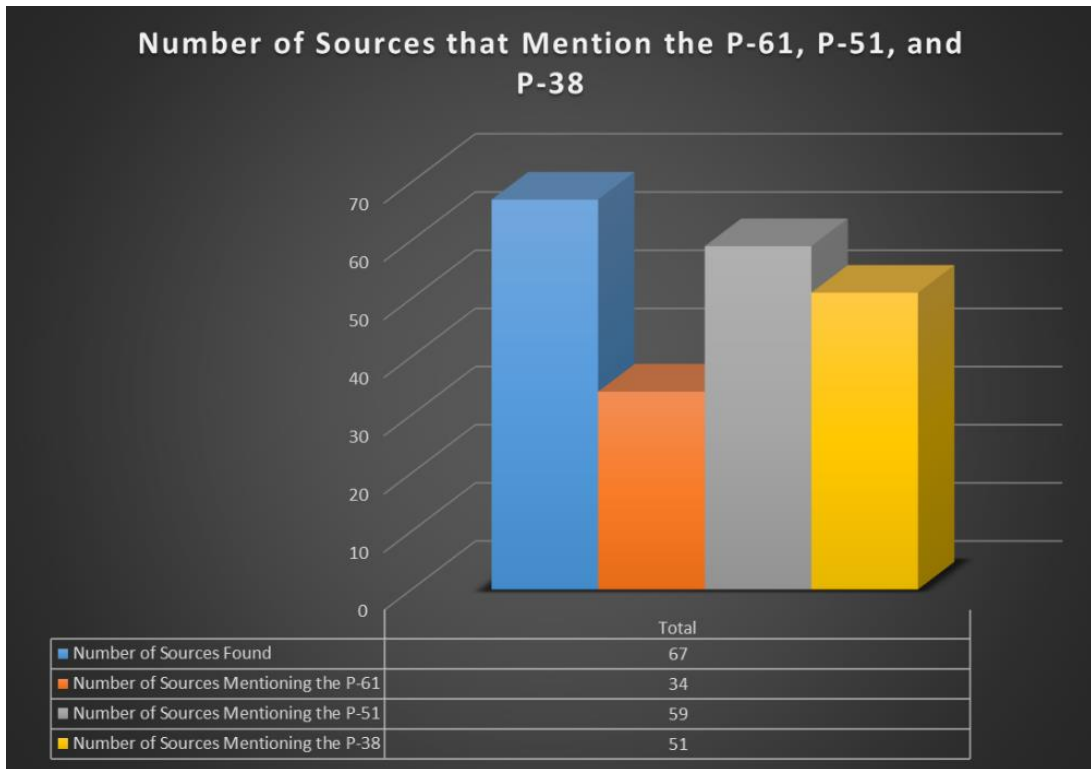


Figure 2.4

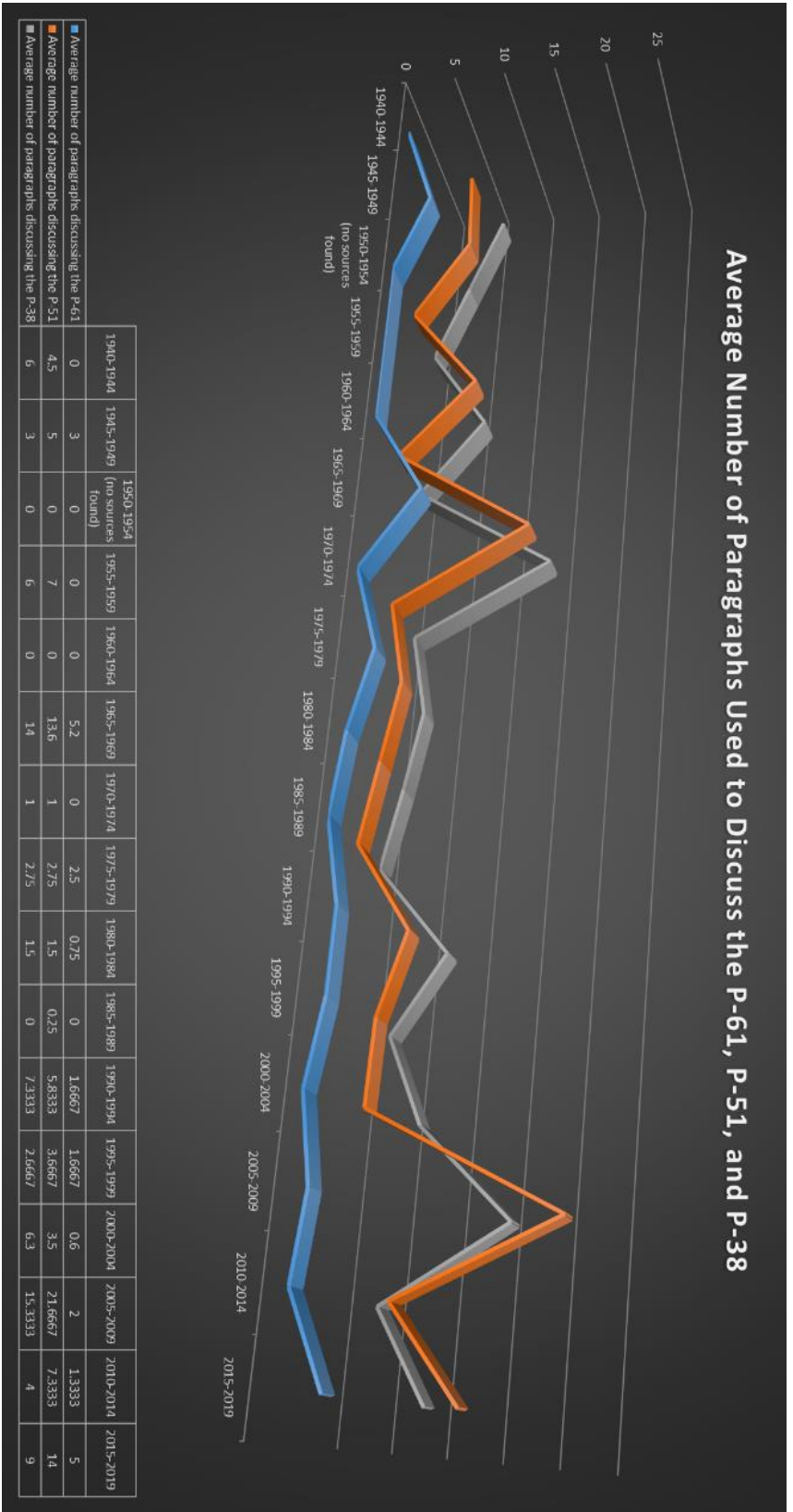


Figure 2.5

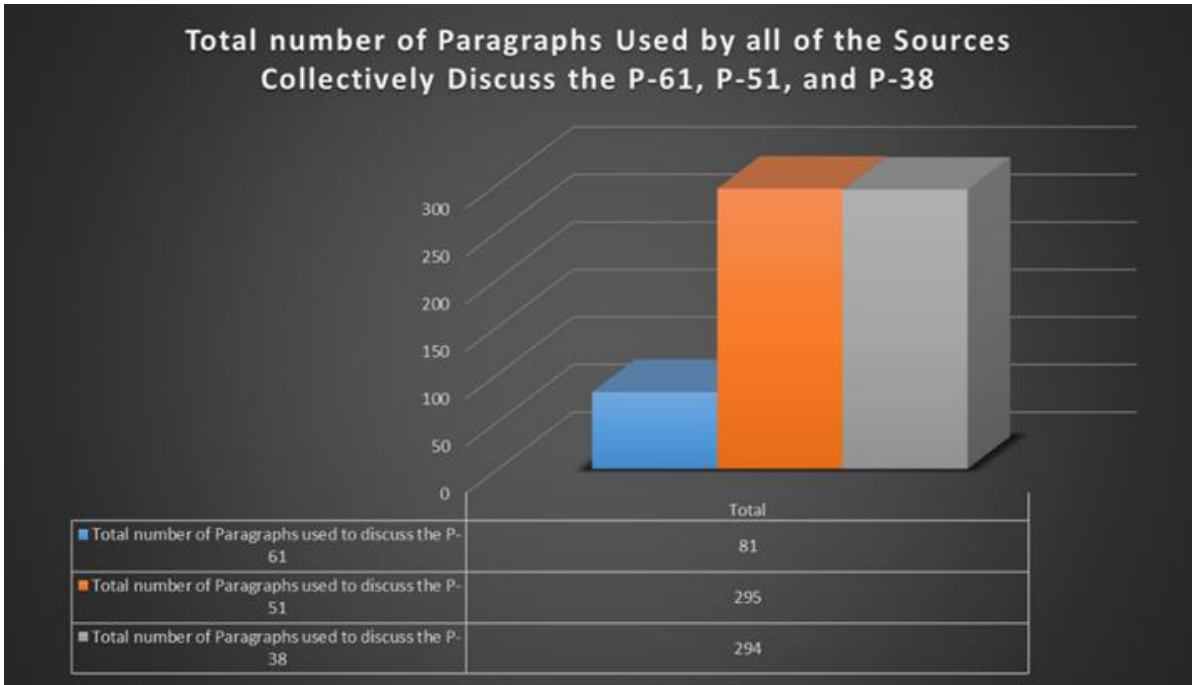


Figure 2.6

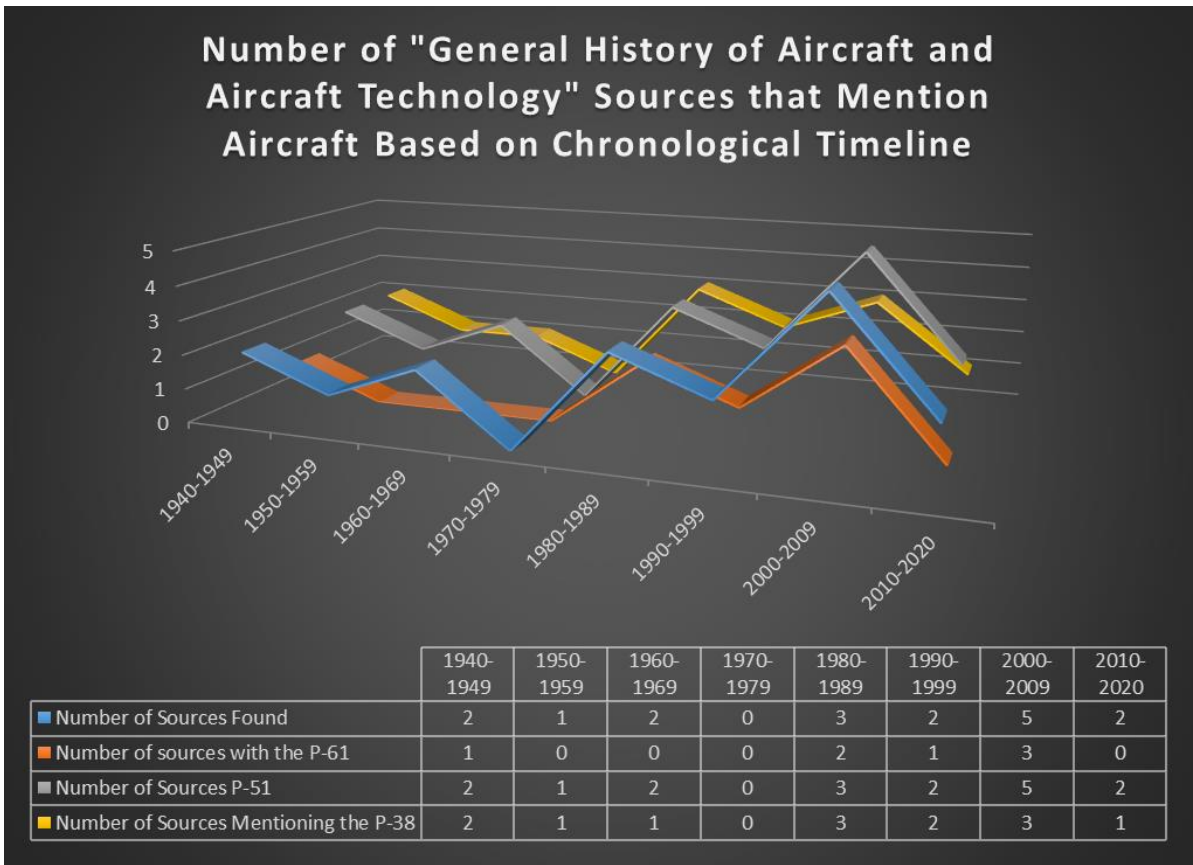


Figure 2.7

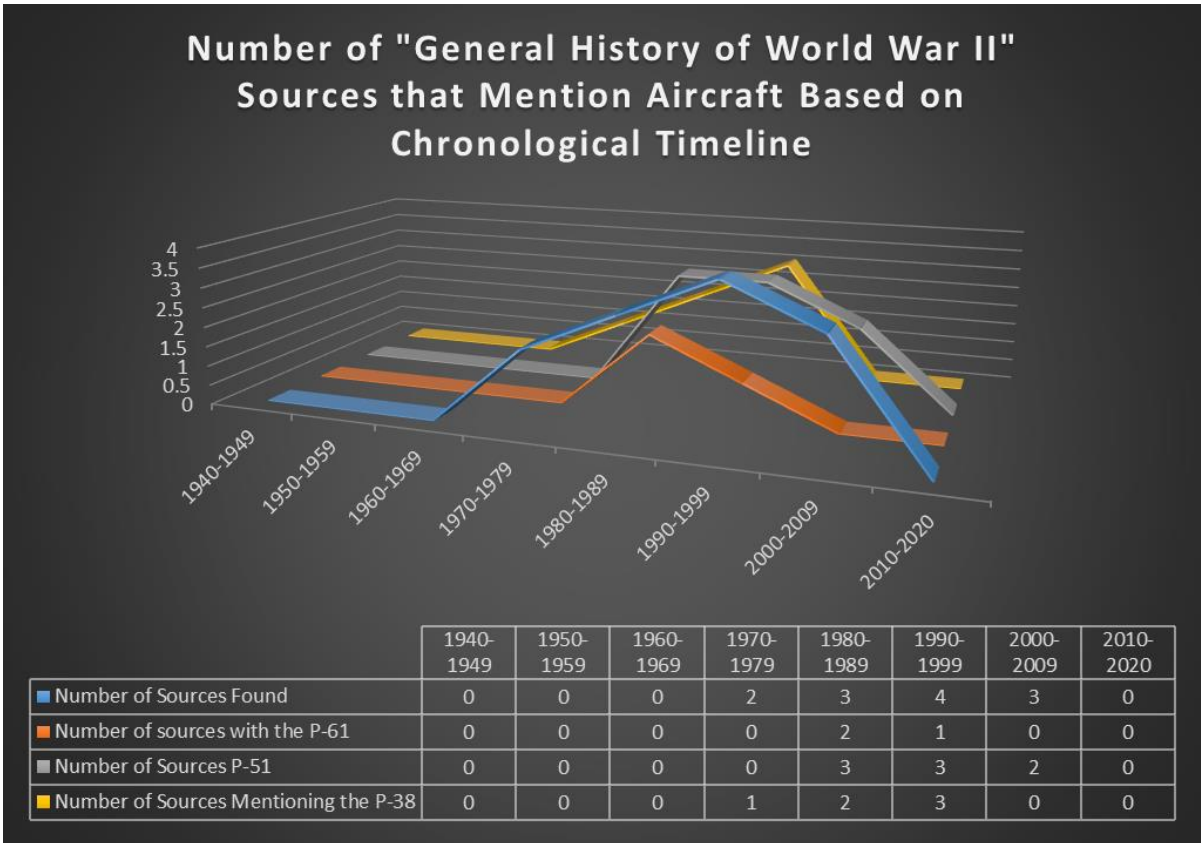


Figure 2.8

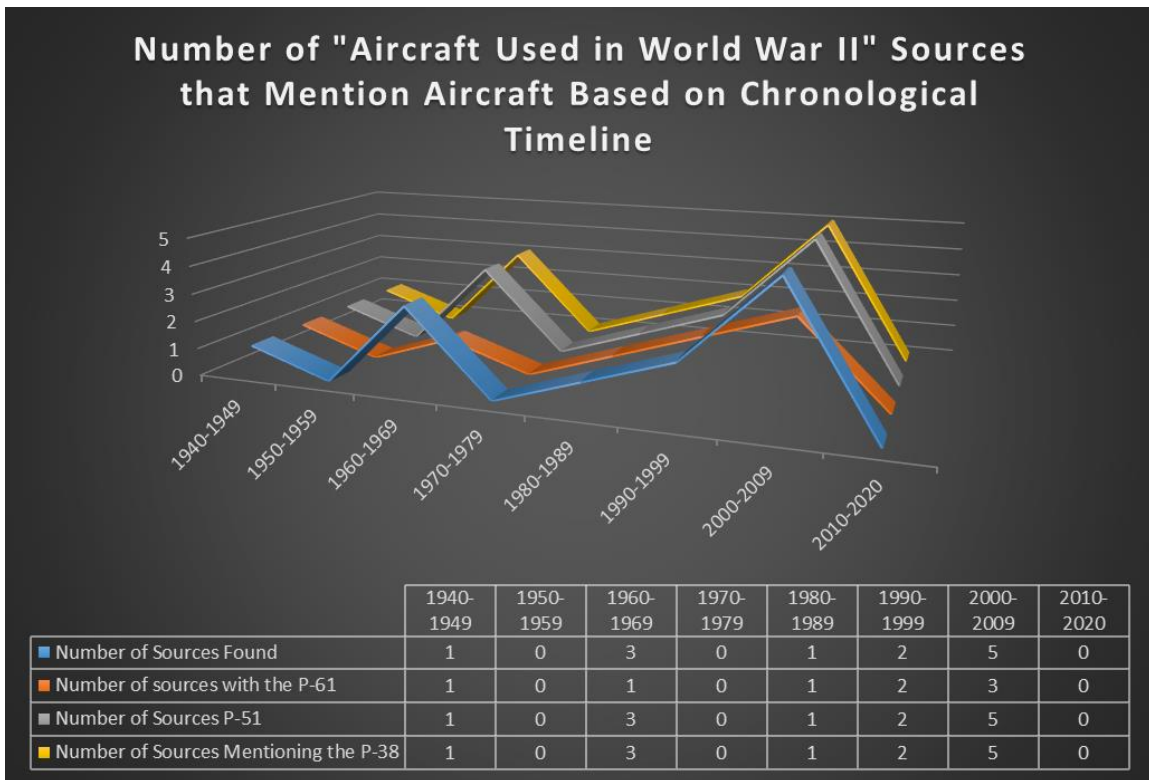


Figure 2.9

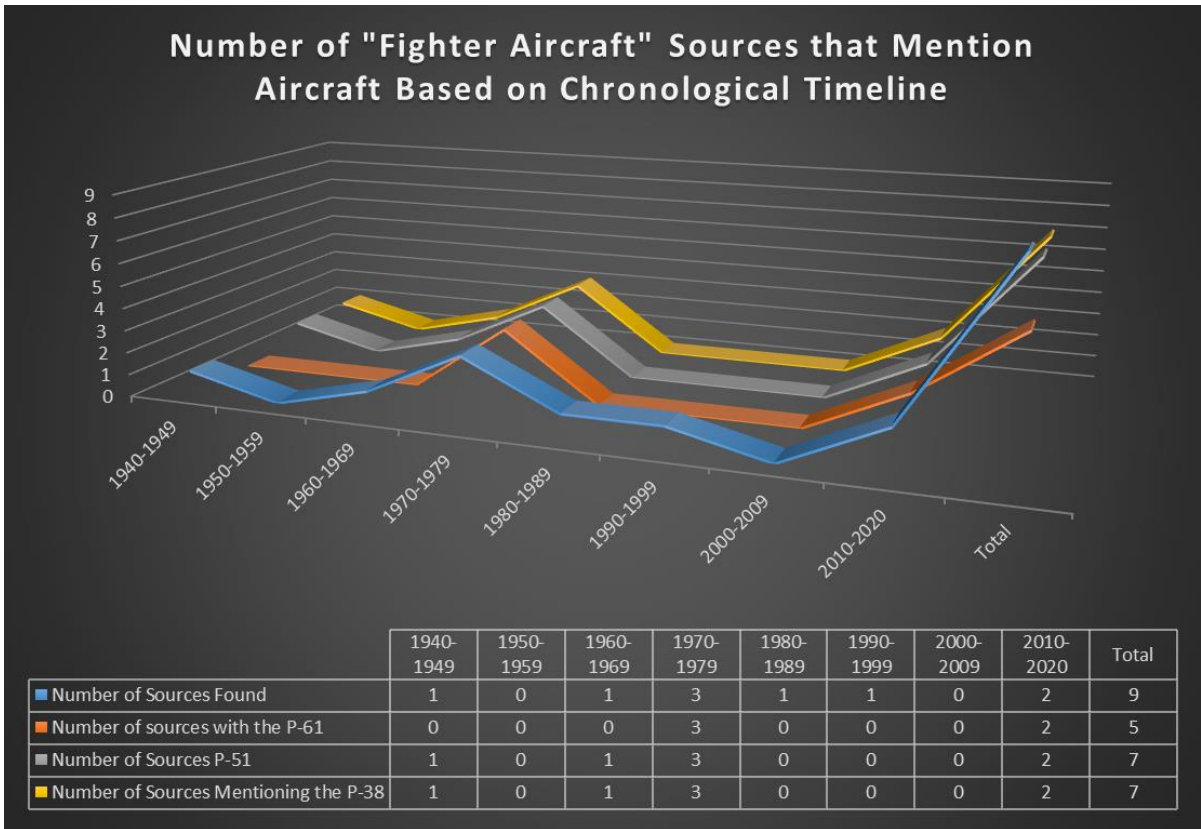


Figure 2.10

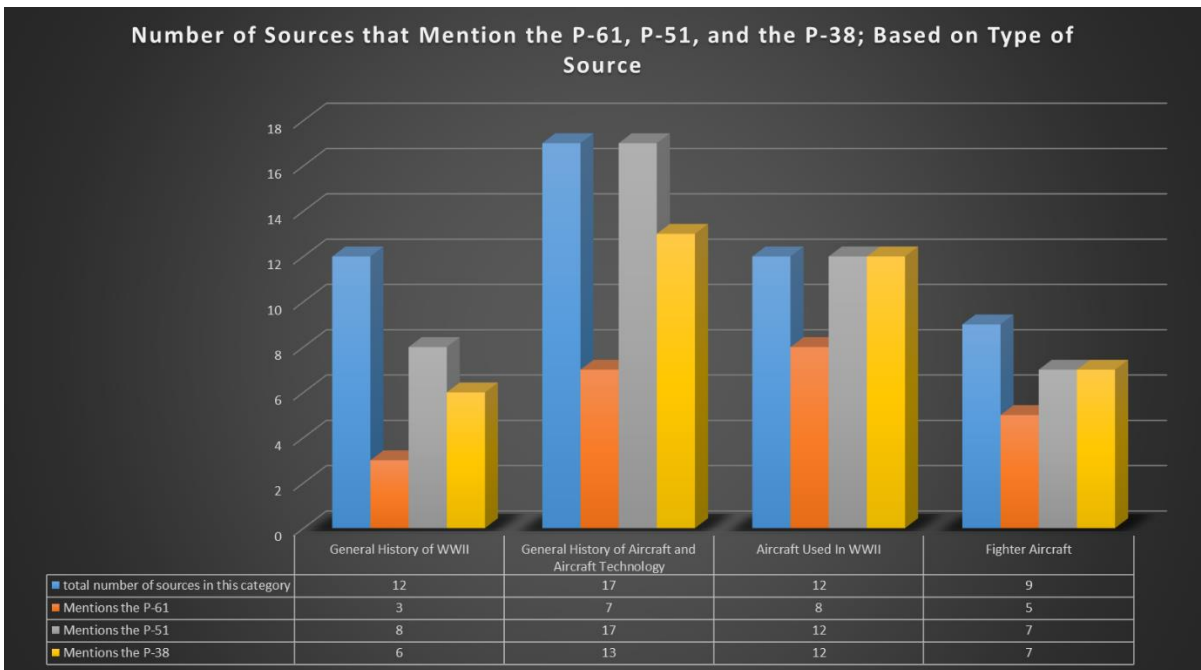


Figure 2.11

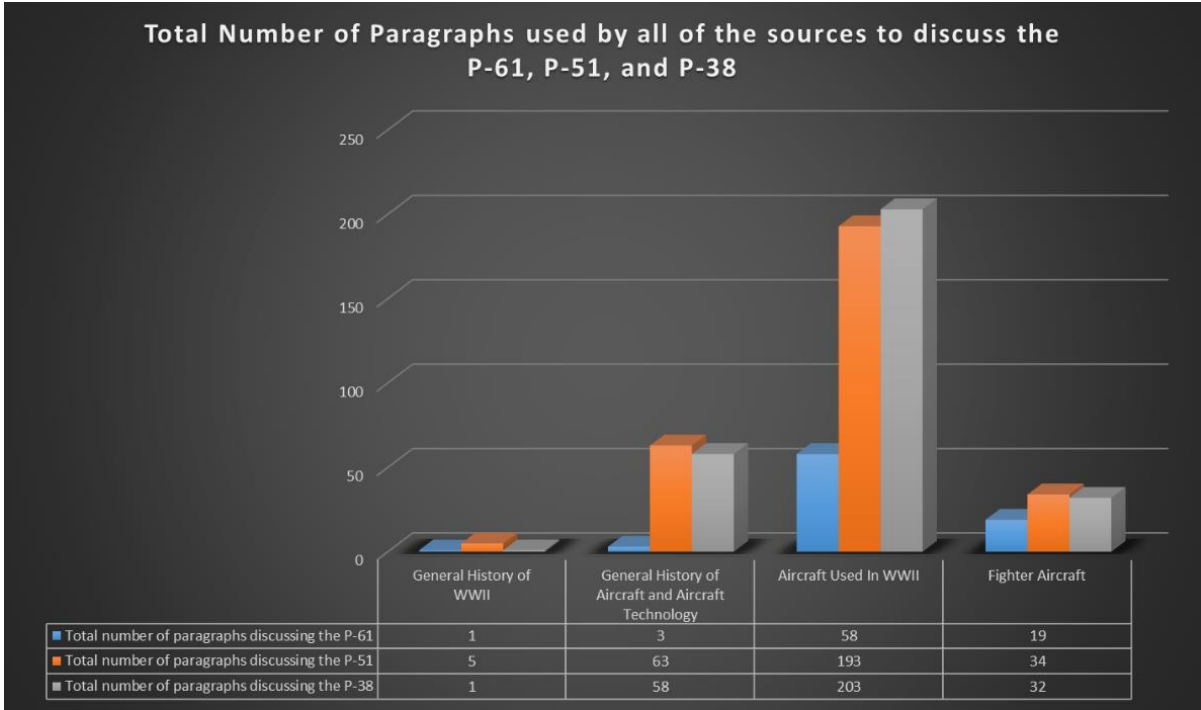


Figure 2.12

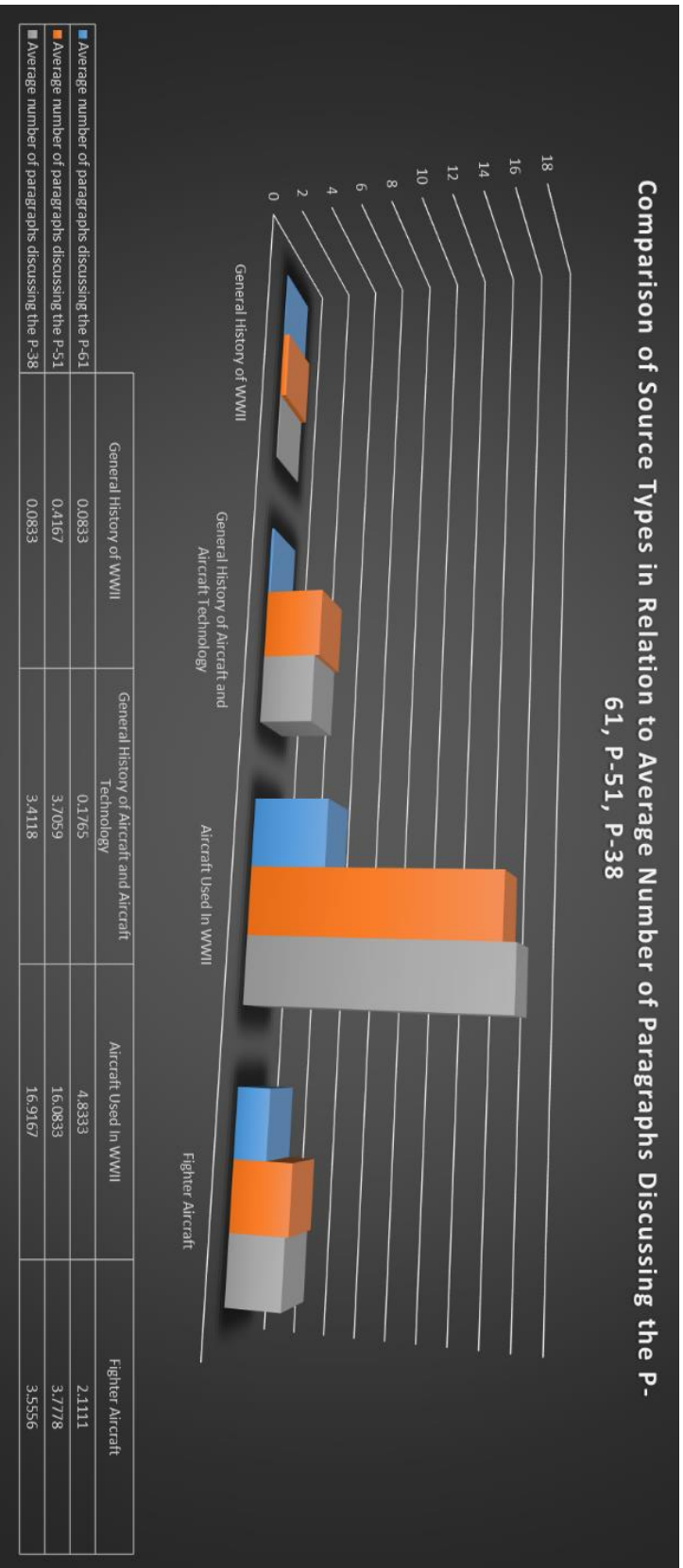


Figure 2.13

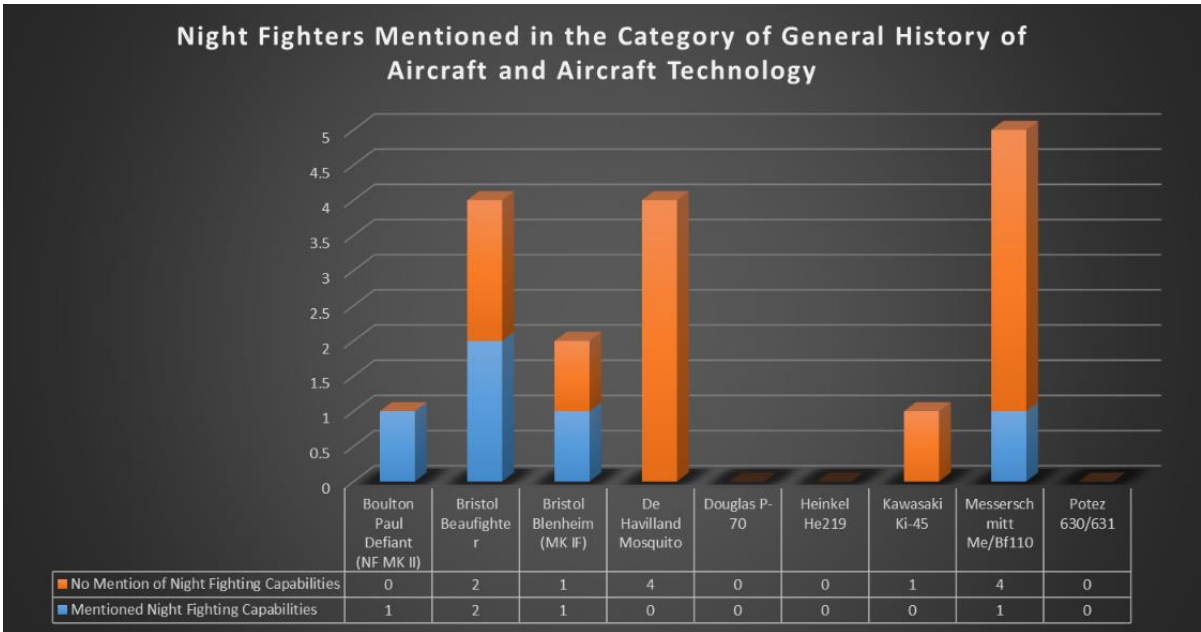


Figure 2.14

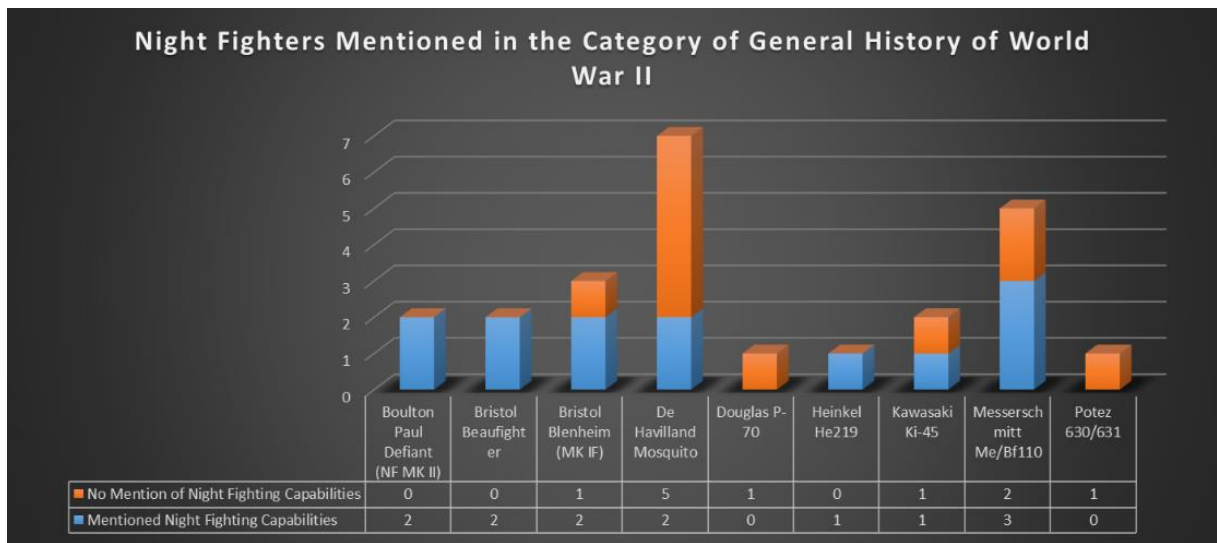


Figure 2.15

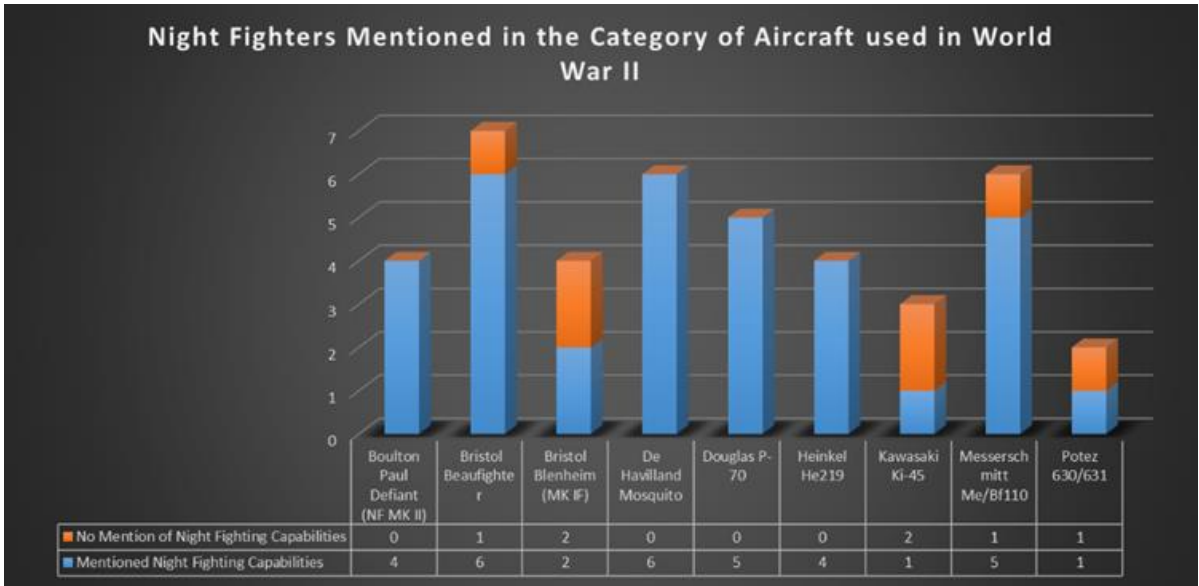


Figure 2.16

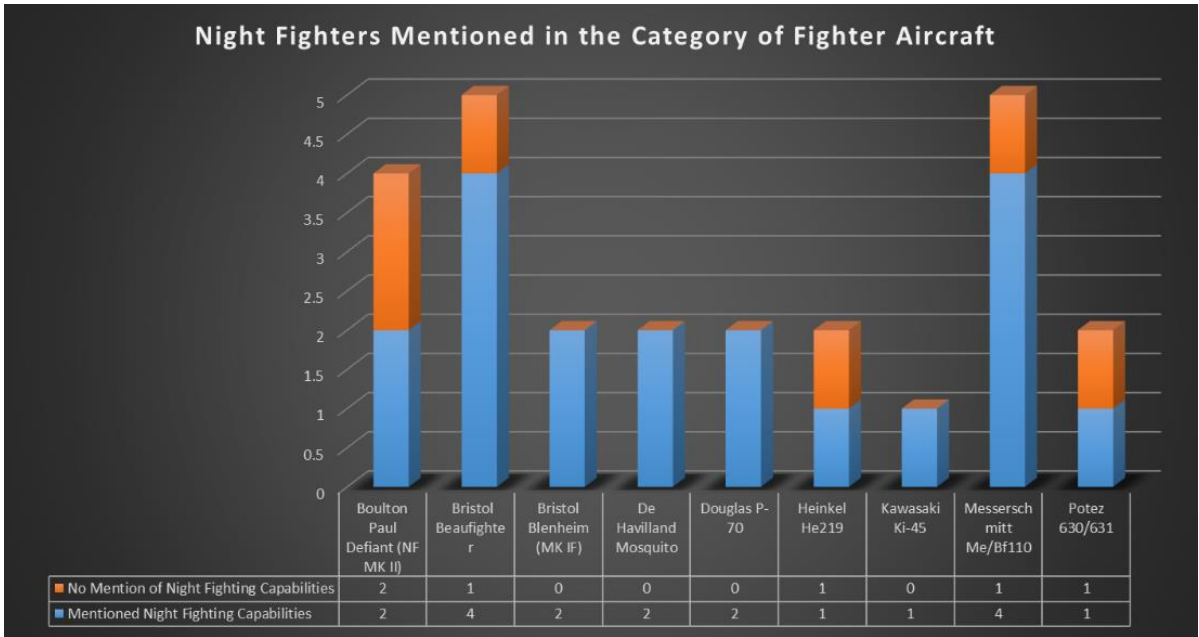


Figure 2.17

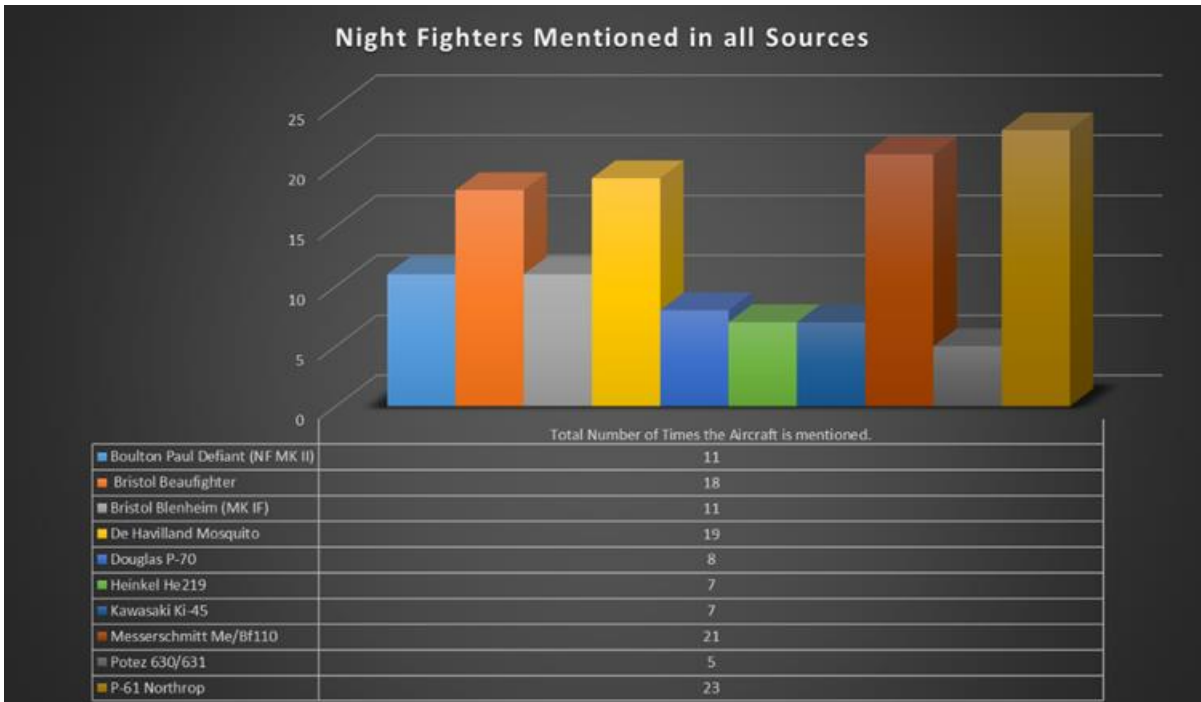


Figure 2.18

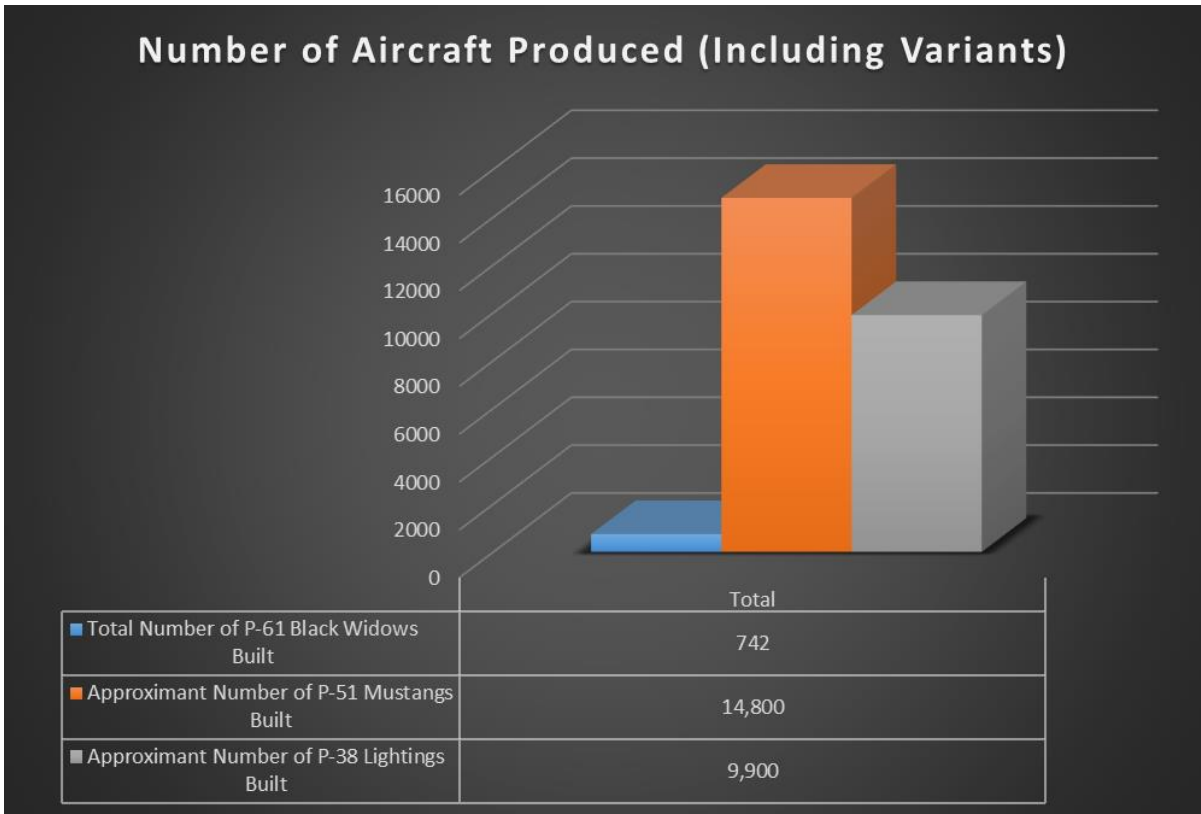


Figure 2.19

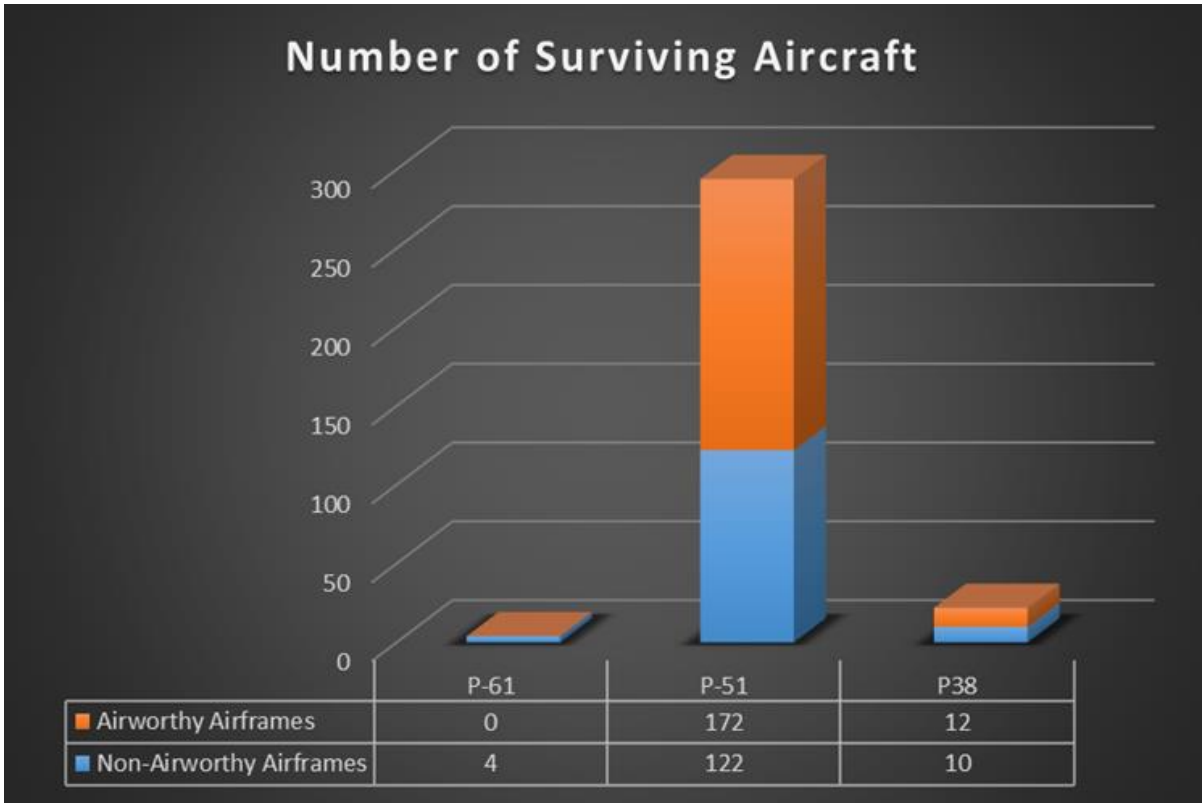


Figure 2.20

Appendix #2: Blank Phase I Source Information Sheet.⁹⁸

1. Bibliography information:

Bibliographic citation	Footnotes citation
------------------------	--------------------

2. Source Genre (According to Thesis standards):
3. Does this source mention the P-61 (bold answer): YES NO
4. Does this source mention the P-51 (bold answer): YES NO
5. Does this source mention the P-38 (bold answer): YES NO
6. How many paragraphs does the source use to discuss the P-61:
7. How many paragraphs does the source use to discuss the P-51:
8. How many paragraphs does the source use to discuss the P-38:
9. Does the source mention the P-61 in the index (bold answer): YES NO
N/A
10. Does the source mention the P-51 in the index (bold answer): YES NO
N/A
11. Does the source mention the P-38 in the index (bold answer): YES NO
N/A
12. If the answers to numbers 6, 7, and 8 are one paragraph or less, how many words are used to discuss the P-61:
13. If the answers to numbers 6, 7, and 8 are one paragraph or less, how many words are used to discuss the P-51:
14. If the answers to numbers 6, 7, and 8 are one paragraph or less, how many words are used to discuss the P-38:
15. Are there any problems with the historical accuracy of how the P-61 is recorded:
16. Does the source contain any other night fighters: YES NO
17. If the answer to question 16 is yes, what are the airplanes:

⁹⁸ Questions 9-14 would be cut halfway through the research as a result of sifting dynamics in the data would be calculated.

Appendix #3: Completed Phase I Source Information Sheet.

1. Bibliography information:

Jones, Lloyd S. <i>U.S. Fighters</i> . Fallbrook, CA: Aero Publishers, Inc., 1975.	Lloyd S. Jones, <i>U.S. Fighters</i> (Fallbrook, CA: Aero Publishers, Inc., 1975))
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2. Source Genre (According to Thesis standards): **Fighter Aircraft**
3. Does this source mention the P-61 (bold answer): **YES** NO
4. Does this source mention the P-51 (bold answer): **YES** NO
5. Does this source mention the P-38 (bold answer): **YES** NO
6. How many paragraphs does the source use to discuss the P-61: **9 Paragraphs**
7. How many paragraphs does the source use to discuss the P-51: **8 Paragraphs**
8. How many paragraphs does the source use to discuss the P-38: **10 Paragraphs**
9. Does the source mention the P-61 in the index (bold answer): YES
NO **N/A**
10. Does the source mention the P-51 in the index (bold answer): YES NO
N/A
11. Does the source mention the P-38 in the index (bold answer): YES NO
N/A
12. If the answers to numbers 6, 7, and 8 are one paragraph or less, how many words are used to discuss the P-61: **N/A**
13. If the answers to numbers 6, 7, and 8 are one paragraph or less, how many words are used to discuss the P-51: **N/A**
14. If the answers to numbers 6, 7, and 8 are one paragraph or less, how many words are used to discuss the P-38: **N/A**
15. Are there any problems with the historical accuracy of how the P-61 is recorded: **Yes, The P-61B was extended by 8 inches, not by 12 inches**
16. Does the source contain any other night fighters: **YES** NO
17. If the answer to question 16 is yes, what are the airplanes:
Douglas P-70

NOTE: IT STATES "IT [THE P-61] WAS ACTUALLY THE PRECURSOR FOR TODAY'S ALL WEATHER FIGHTERS." (161)⁹⁹

⁹⁹ If there was something, I thought might be important, I would make a note of it.

Appendix #4: Blank Phase II Source Information Sheet

1. Bibliography information:

Last Name, First Name, <i>Title of Book</i> , Publish date
--

- | | | | |
|----|--|-----|----|
| 2. | Does this source mention the P-61 (bold answer): | YES | NO |
| 3. | Does this source mention the P-51 (bold answer): | YES | NO |
| 4. | Does this source mention the P-38 (bold answer): | YES | NO |

Appendix #5: Gaffes

The American Heritage Dictionary defines a “gaffe” as “A blatant mistake or misjudgment.”¹⁰⁰ In all, six of the sources that mentioned the P-61 had gaffes about its history. While this work will not discuss every single gaffe, I have opted to mention (and correct) some of the notable ones. These show that even if the source mentions the aircraft, it still can give incorrect information.

- X.** The P-61 known as *Time’s A Wastin’* was a P-61A (not a P-61B) and did not have drop tanks, a red, white and yellow paint scheme for the squadron insignia on the tail, or a turret.¹⁰¹
- X.** Only one unit, 425th NFS, had the R/O behind the pilot and this was only due to the lack of a turret in their P-61s and modifications made in the field.¹⁰² All other P-61’s had the R/O in the rear of the crew nacelle.¹⁰³
- X.** Maj. Carrol C. Smith was from the 418th NFS, not the 547th NFS.¹⁰⁴
- X.** The P-61 did not use SCR-520 radar; it used SCR-720.¹⁰⁵ [The SCR-720 made the SCR-520 obsolete for aircraft use.¹⁰⁶]
- X.** The P-61 served in the European ***and*** Pacific theatres, not just the European theatre.¹⁰⁷

¹⁰⁰ Houghton Mifflin Harcourt Publishing Company, “The American Heritage Dictionary Entry: Gaffe,” American Heritage Dictionary Entry: Gaffe (American Heritage Dictionary), accessed April 14, 2020, <https://www.ahdictionary.com/word/search.html?q=Gaffe>)

¹⁰¹ Many sources you find will have this incorrect.

¹⁰² Kolln, 57-58

¹⁰³ Robert Jackson, *Aircraft of World War II* (New York, NY: Fall River Press, 2009) [I unfortunately also made a gaffe in that I did not record most of the page numbers for these errors.]

¹⁰⁴ Francillon René J, *American Fighters of World War Two*, vol. 1 (Garden City, NY: Doubleday & Company Inc, 1968))

¹⁰⁵ Ralf Leinburger, *Fighter: Military Aircraft from World War I to the Present Day: Technology, Facts, History* (New York, NY: Parragon Inc., 2015))

¹⁰⁶ Kolln, 3

¹⁰⁷ Leinburger; He makes no mention of the P-61’s work in the Pacific, leaving an unsuspecting reader to assume that the Widow was not needed in the Pacific.

X. Both the Bristol Beaufighter and the P-61 cannot be the first custom built night fighter

- The P-61 was “first ever aircraft specifically designed as a night fighter”¹⁰⁸
- The Beaufighter was “first high-performance purpose-designed night fighter.”¹⁰⁹

I would argue that while the Beaufighter was a very good fighter, it was not the first aircraft to be specifically designed for the purpose of night fighting. From my understanding of the Beaufighter’s history, it was designed as a regular fighter and then converted into a night fighter.

X. The P-61B was extended by 8 inches,¹¹⁰ not 12 inches¹¹¹

¹⁰⁸ Francis Crosby, *Fighter Aircraft of World Wars I and II: an Illustrated History of Fighter Planes from 1914 to 1945* (Wegston, Leicestershire: Anness Publishing, 2012)), 35

¹⁰⁹ Ibid, 102

¹¹⁰ Kolln, 24

¹¹¹ Lloyd, 161

Appendix #6: US Night Fighter Squadrons During WWII

For genealogical and historical research done by others using this work, a brief description is provided of each night fighter squadron (NFS) deployed by the US during WWII. A more thorough description can be found in the Pape and Kolln sources.

The 6th Fighter Squadron (FS) was redesignated the 6th NFS in early January of 1943.¹¹² The unit, as a whole or in part,¹¹³ was stationed at Kipapa Gulch in Hawaii,¹¹⁴ Guadalcanal, New Guinea, John Roger's field in Hawaii,¹¹⁵ and Saipan.¹¹⁶ It was deactivated on February 20, 1947 (when it became the 339th FS), having destroyed 16 enemy aircraft with the P-61.¹¹⁷

The 414th NFS was activated on January 26, 1943. The unit, as a whole or in part, was stationed at Algeria, Tunisia, Sardinia, Corsica, Italy, Belgium, and Germany. It was deactivated on August 31, 1947 (when it became the 319th FS) after its P-61s destroyed 5 enemy aircraft.¹¹⁸

The 415th NFS was activated on February 10, 1943. The unit, in whole or in part, was stationed in Algeria, Tunisia, England,¹¹⁹ Sicily, Italy, Corsica, France and Germany. The unit was deactivated on September 1, 1947 (when it became the 449th FS) with their P-61s not destroying a single enemy aircraft.

The 418th NFS was activated on April 1, 1943.¹²⁰ It was stationed, in whole or as a part, in New Guinea, Wakde Island, Owi Island, Netherland East Indies (NEI),¹²¹ the Philippines

¹¹² Pape states this happened on Jan. 9 (Pape, 130). Kolln states it happened on Jan. 18 (Kolln, 94)

¹¹³ Kolln states that there were two detachments. Kolln, 94

¹¹⁴ Kolln, 94; Pape, 130

¹¹⁵ Kolln, 94; Pape, 130

¹¹⁶ Pape, 130

¹¹⁷ Ibid, 130

¹¹⁸ Ibid, 130

¹¹⁹ The air echelon stayed there for a short period of time in 1943, Ibid, 130

¹²⁰ This unit's first commander was Maj. Carrol C. Smith (Ibid, 130), pilot of the P-61 *Time's A Wastin'* (the model of the P-61 made in conjunction with this work).

¹²¹ Pape only says "NEI." (Ibid, 131) However, the 418th's official history lists it as "Netherland East Indies." [Logan, 39]

(PI), and Okinawa. The unit was deactivated on February 1, 1947 (when it became the 4th FS) after its P-61 eliminating 18 enemy aircraft.¹²²

The 419th NFS was activated on April 1, 1943. The unit, in whole or in part, was stationed in the Solomon Islands, New Guinea, Admiralty, NEI, PI, and the Sulu Archipelago. The unit was deactivated on February 20, 1947 with 5 kills using the P-61.¹²³

The 421st NFS was activated on August 1, 1943. The unit, in whole or in part, was stationed in England, France, Belgium, and Germany. The unit was deactivated on September 30, 1945 (when it became the 68th FS) with 48 kills using the P-61, including 5 V-1 “Buzz Bombs.”¹²⁴

The 425th NFS was activated on December 1, 1943. The unit, in whole or in part, was stationed in England, France, and Germany. The unit was deactivated on August 25, 1947 (when it became the 317th FS) with 14 recorded kills by its P-61s, including 4 V-1s.¹²⁵

The 426th NFS was activated on January 1, 1944. It was stationed in India and China. It was deactivated on November 5, 1945 with 5 kills with its P-61s.¹²⁶

The 427th NFS was activated on February 1, 1944. The unit, in whole or in part, was stationed in Italy, India, Burma, and China. It was deactivated on October 29, 1945 with its P-61s having taken out no enemy aircraft.¹²⁷

The 547th NFS was activated on March 1, 1944. This unit, in whole or in part, was stationed in New Guinea, Schouten Group, PI, and Ryukyus. The unit was deactivated on February 20, 1946 with its P-61s having neutralized 6 enemy aircraft.¹²⁸

¹²² Pape, 131

¹²³ Ibid, 131

¹²⁴ Ibid, 131

¹²⁵ Ibid, 131-132

¹²⁶ Ibid, 132

¹²⁷ Ibid, 132

¹²⁸ Ibid, 132

The 548th NFS was activated on April 10, 1944. It, in whole or in part, was stationed in Hawaii, Saipan, Iwo Jima, and Ie Shima. The unit was deactivated on December 19, 1945 with its P-61 taking out 5 enemy aircraft.¹²⁹

The 549th NFS was activated on May 1, 1944. This unit, in whole or in part, was stationed in Hawaii and Iwo Jima. It was deactivated on February 5, with only 1 kill using a P-61.

The final night fighting squadron of the war that used the P-61 to be activated was the 550th NFS, which came into existence on June 1, 1944. It, in whole or in part, was stationed in New Guinea, NEI, PI, and the Sulu Archipelago. It was deactivated on January 4, 1946 without getting a single kill with its P-61s.

¹²⁹ Ibid, 132

Appendix #7: Artist's Statement for the Diorama of the P-61 Northrop Black Widow

In the introduction to this thesis, I discussed an idea that I had thought of for an Honors Thesis on the P-61 Northrop Black Widow. That idea was founded on this question; “How can I, to the best of my ability, create a historical accurate model of the P-61 known as the *Times A Wastin*?” While this might sound like an unnecessary question (outside of model building circles), it is an important one. From my experiences, museums commonly have dioramas and model scenes to show something that is too large to have in the museums (like battle scenes) or something that the museum does not have access to (like the *RMS Titanic*) or that is no longer in existence (like the Roman forum). If the goal of history is to tell the story of the past accurately, then having accurate miniature scenes or models is imperative. From a future educator's perspective,¹³⁰ I believe that the only time learning would be a complete waste of time is when the information being presented is inaccurate. If a museum has inaccurate information, I do not believe that it will not remain open long because people will spend time learning information that is incorrect. Therefore, if a model is to best represent something in a museum, then it must be as accurate as possible. While this particular diorama has its flaws, it is much more historically accurate than the original kit that I was gifted.¹³¹

This diorama (See *Figure A.1*) is titled *Wastin' Time*, a pun off the name of the P-61 shown in the diorama, *Time's A Wastin*.¹³² The entire diorama depicts Army Air Corps personnel simply taking a break, whether they really should be or not. Amid the hustle and bustle of a world war, all these men have found a way to take a break, if only a few minutes. In the maddening rush of life, we ourselves need to remember to take a break, breath, and relax, even for just a moment, just like these men are doing.

¹³⁰ The author of this work is an education major.

¹³¹ Due to the timeline of the model's construction with the information that became available.

¹³² This aircraft's importance is discussed in the introduction.

After a long night of fighting, sometime after the New Year 1945, the flight crew of *Time's A Wastin'*, consisting of Major Carrol C. Smith and 2nd Lt. Phillip B. Porter, are enjoying some good conversation, in the mess tent, based off the "Tent, Fire-Resistant, Squad, M—1942, O-D, 6-Foot 2-Inch Door" tent.¹³³ I chose to have the tent only partially on the diorama as the tent's large size would have taken up too much room and having half the tent allows for a better view inside the tent and the relaxation that those inside the tent are having.



Figure A.1: Maj. Carrol C. Smith (right) and 2nd Lt. Phillip B. Porter (left)

Moving outside the tent, we find three mechanics "hard" at work preparing the *Time's A Wastin'* for another night of patrol and fighting. The mechanics working on the engine would rather talk than actually work on the engine. The mechanic working on the radar has stopped and is taking a break to talk to a passerby, who is walking over to say hello.

It is a relaxed scene, one that could be broken at any moment by the realities of war.

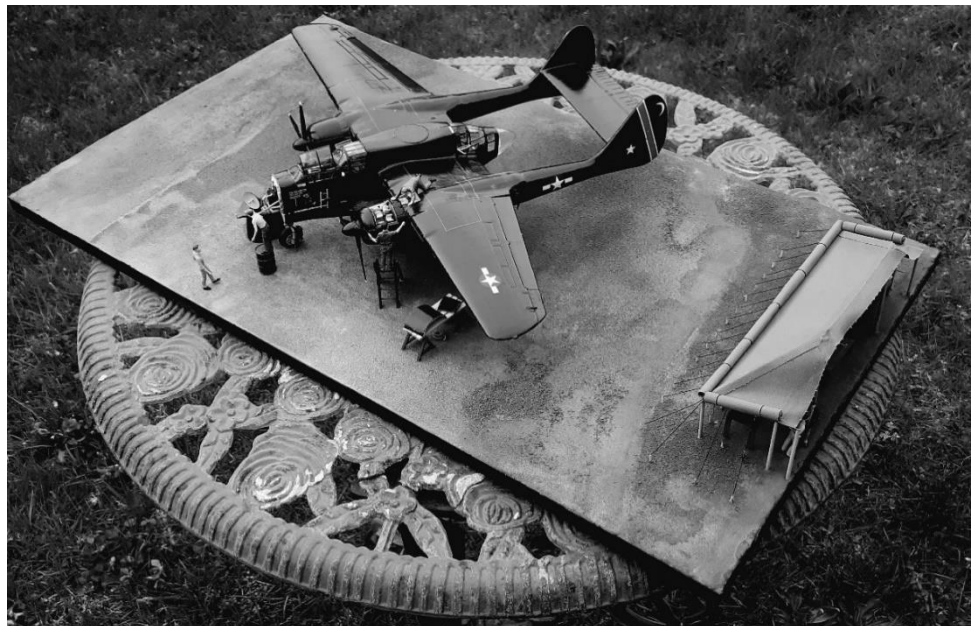


Figure A.2: WASTIN' TIME

¹³³ United States War Department, *FM 20-15: Tents and Tent Pitching* (Washington, DC: United States Government Printing Office, 1945), 22



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¹³⁴ Find full episode/series here:

[https://ohpir.westervillelibrary.org/search~S0?/X%28Dogfights%29&SORT=D/X%28Dogfights%29&SORT=D&SUBKEY=\(Dogfights\)/1%2C91%2C91%2CB/frameset&FF=X%28Dogfights%29&SORT=D&1%2C1%2C](https://ohpir.westervillelibrary.org/search~S0?/X%28Dogfights%29&SORT=D/X%28Dogfights%29&SORT=D&SUBKEY=(Dogfights)/1%2C91%2C91%2CB/frameset&FF=X%28Dogfights%29&SORT=D&1%2C1%2C)

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