Railroads for Military Victory

By: Ariel Wagner, Historical Researcher for the Indiana Crossrails project

Railroads are a part of American design and ingenuity. Railroads planned, managed, and operated to support the nation's war effort; proving that the military and the nation would become dependent on rail.[1] Trains carried people and goods faster than anything else had before. Railroads united for victory, and ascertained that their greatest volume of impact would be carrying material and troops for the war effort.[2]

Civil War

The Civil War was the first time that railroads were used in high demand for military tactics.[3] They were used as strategic resources and military targets. The Civil War accelerated improvement of weaponry that dramatically changed the warfare. Soldiers, materials, and food were routinely transported by rail; it kept the war effort progressing and troops supplied.[4]

April 12, 1861, shots were fired at Fort Sumter, beginning a feud between a nation. Railways would be in high demand for the first time as military maneuvers in a continental scale conflict. The Civil War introduced many new weapons, and railroads would prove to be one of the most successful tools that helped enable the North to defeat the South. During the Battle of Chickamauga Abraham Lincoln was able to send 20,000 men from Washington that were desperately needed in Georgia in just eleven days.[5] Both the Union and the Confederacy recognized that railroads would be essential to ending the conflict.[6]

The Union had a distinct advantage over the South with most of the nation's track and locomotive factories located in the North: 2/3 of the rail was located in the North.[7] The North had more means to transfer men and goods. Union officials used railroads to move troops and supplies from one place to another. They also used thousands of soldiers to keep tracks and trains safe from Confederate attack. The North was more industrial with the North producing 4/5 of the nation's manufacturing goods, producing 96% of the nation's trains, and six times more factories than the South.[8] The South was primarily agricultural that relied on cash-crops. Early on the North realized the importance of railway transportation and had 22,000 miles of track compared to the South's 9,000.[9] The South was at a distinct disadvantage in men, material, and machines because they used a based agricultural system with slave labor, so it was not necessary to move large amounts of materials over long distances quickly.

Locomotives were undermined for military use at the beginning of the war. The Union railroad executives were more concerned about the rates for transporting war material and the profits they would make rather than the welfare of the Union.[10] Simon Cameron, Lincoln's Secretary of War, was forced to retire because of his profiteering by manipulation of the rates the War Department would pay for the transportation of its soldiers and material. Such corruption in the rail industry prompted the enactment of the Railways and Telegraph Act of January 31, 1862.[11] This legislation allowed the President to utilize rail as desired—to preserve public safety. The few railroads that were seized under the act were organized into the United States Military Railroad (U.S.M.R.R.). Since railroad companies had a fear of being seized they fell into line and aided the Union. Profiteering and corruption immediately began to diminish and trains began to move in an expedient way. [12]

The Confederate leaders began to comprehend the importance of rail transportation and would employ it as one of their main tactics throughout the entirety of the war.[13] During the Battle of Shiloh Confederate forces launched a surprise attack on General Ulysses S. Grant and his camped troops at Shiloh Church. The Yankees waited for reinforcements before they would advance and try to capture the town Corinth, an important railway station in Mississippi that connected the Confederacy with headquarters in Virginia.[14] The North was better equipped with men, material, and their booming railroad industry, but the Confederates would fight with effort to maintain their railway systems as well.

While railroads were recognized for their benefits to the war effort, military leaders, such as Grant and Sherman, also recognized them as great targets for destruction. Destroying rail lines prevented food and material supply to reach large armies and prevented easy transportation of troops. As an army advanced, it often had to rebuild the track that the fleeing army destroyed. Construction trains became indispensable to military operations.

Rebel attacks were common on Union rail lines, so the North set up garrisons along the rail lines to guard depots and bridges. The North assigned its army to instruct over twenty thousand men in railway construction and repair corps; General Sherman trained ten thousand troops in railroad repair because he understood the importance of railroads and also that the lines were a main target.[15] Troops would destruct railroads by taking all the ties from a stretch of track and set them aflame, and then they would bend the rail around tree and twist it.

As Union General William Tecumseh Sherman's troops moved south they would sabotage the rails by pulling them up, heating them until they could bend, and wrap the rails around tree trunks, which later became known as "Sherman's Neckties."[16]

General Herman Haupt, the union's brilliant and innovative chief of construction and transportation, is the one who initiated the stockpiling of pre-fabricated parts.[17]

The North and South employed locomotives for premeditated missions. The "railroad weapons" were a variety of vehicles, most notable being armored trains and railroad batteries. Maneuver elements performed several missions such as: railroad defense, escort duties, and artillery support.[18] Small windows were installed to armor cars to reduce the chances of a sharpshooter's bullet penetrating the glass or the inside overheating, but while still affording adequate visibility for the crew. Locomotives, at times, served as rams.[19] While trains served as artillery bait and transportation, they could also transport heavy guns to the battlefield, but commanders took it a step further and mounted heavy artillery pieces on flatcars for combat operations. Railroad batteries enabled firepower on the move. To protect railroad batteries against counter-fire, builders mounted thick iron and wooden shields on the flatcars to deflect enemy projectiles. Weapons had limited range and mobility, not too effective, but psychologically it scared the opponent army being shot at. American Civil War railroad weapons were even conceptual ancestors to tanks, infantry fighting vehicles, and self-propelled artillery.[20]

To prevent Federal trains from being attacked they would put Confederate hostages and sympathies on the trains since large militia were the worst threat to railroads.[21] Large military

forces were the worst danger to railroads because armies without supplies cannot operate for long. So soldiers stayed close to railroad tracks in order to secure them.

Railroads provided logistical support for the armies, which was prudent to the economics of the divided nation. They supplied the units that were on campaign. Railroads were often major objectives since an army without supplies cannot operate for long. Missions by locomotives mainly included close combat. Commanders sometimes sent locomotives to reconnoiter the terrain and gain information on enemy troop depositions.[22] Gathering information was crucial. Locomotives could quickly reverse direction and move as fast as 60 mph. Because of their great mobility, locomotives were also useful as courier vehicles when commanders had to rush vital intelligence to headquarters.[23] This communication service was an important advantage in a war where raiders frequently cut or tapped telegraph lines. The telegraph became the way of communicating important information to train crews. Communication on the railroad became a very essential tool.

Anson Stager was the first general manager of Western Union Telegraph Company, formed in 1856. In April 1861, Stager was requested by the governor of Ohio to manage the telegraphs in Southern Ohio and Virginia.[24] Then in October 1861, Stager was appointed head of the Military Telegraph Department. Stager was given responsibility for all of the telegraph lines in the Ohio military district. He was asked to develop an encryption scheme to protect state government communications, although, Stager had never had much interest in codes or ciphers he created the first telegraphic cipher used for military purposes and his codes were never broken by the Confederacy.[25] Though telegraph lines were supposed to allow people to send private messages to each other, it was easy to tap the wires and listen in. Stager's cipher

impressed General George B. McClellan and it was later adopted as the official cipher of the War Department. Secret codes were important to the Civil War, especially for the Union forces who fought most of the war on enemy ground. Railroad workers and engineers used their skills to enhance the communication and transportation for a quicker and more efficient trip.

J. Edgar Thomson was the first engineer of the Pennsylvania Railroad. Thomson masterminded the completion of a 1,300 foot-long rail line from Harrisburg-Pittsburg.[26] The ingenious Horseshoe Curve was built in Altoona, Pennsylvania, and cut travel time from to Philadelphia to Pittsburg from three days to just thirteen hours. Thompson acquired control of the Northern Central Railway, a vital wartime artery. The Horseshoe Curve was built on the eastern slope of Allegheny Mountains in 1854. Thomson proved that the simplest solution is often the best.

The Confederate government was not as quick as the Union to recognize the importance of the railroads during the conflict. They did not have the parts or means to replace worn out equipment. The Southern railroads had imported iron from England, and the Union had blockaded the Atlantic and Gulf ports—shutting off that supply effectively.[27] Locomotives and tracks became depleted. By 1863, a quarter of South's locomotives needed repairs. Fuel was also a problem; southern locomotives used wood. Railroad companies became understaffed, so the railroad crew would have to stop along their route to chop and load wood as needed.

The Great Locomotive Chase

James J. Andrews led Union forces with the plan to commandeer the locomotive, the *General* from behind Confederate lines. The men then devised to cut and damage the rail lines as they progressed towards Union lines. Andrews served as a civilian spy for the Union Army. He and twenty-two soldiers, two being experienced engineers, Wilson W. Brown and William J. Knight.[28] On April 12, 1862, Andrews and his company of raiders boarded a Western & Atlantic train at Marietta, Georgia.[29] William A. Fuller was the conductor in charge of the *General* and led the pursuit, by handcar, on Andrews and his comrades. As the men fled the pursuing forces they cut the telegraph wires so the Confederates could not send prior warning to forces along the railway. Andrews and seven of his company were caught within a week, and were charged with acts of unlawful belligerency and later hanged as spies in Atlanta. Andrews' raiders were the first recipients of the Medal of Honor.[30] Although, Andrews was unable to receive a medal because he was a civilian, but he will always be known for the great locomotive chase.

Railroads dramatically increased the strategic mobility of armies due to their ability to carry large amounts of troops and supplies rapidly. Some Civil War generals were slow to grasp the importance of rails, but generals on both sides became aware of the immediate impact and potential of railroads on the conduct of the war. The technology increased the value of larger industrial base to the Northern armies. Greater production of war material would be useless without a large capacity transportation system to effectively and efficiently distribute the material.[31] Railroads could rapidly move a larger number of available and well equipped soldiers to successfully support a strategy of exterior lines and a primarily land invasion of Confederate states. Logistical operations kept them properly supplied.

Rail provided a sophisticated transportation system that enabled the Union to shift troops rapidly and deploy at critical locations. The Union army was better fed and better equipped. Part of the Union's army strategy was to attack and divide the Confederacy into non-supporting and isolated zones by cutting water and existing rail transportation lines.

The Civil War was the first major military action in which railroads were an effective tool, but were at times undermined. When the progressive leaders began to utilize the rails for the transport of troops, supplies, wounded, and other impediments of warfare, the advantages soon became apparent. As a result the rail lines became military targets of prime importance and the tide of battle was often turned by the ability of the railroads to rush up reinforcements and keep up a steady flow of ammunition, rations, and forage. Hospital trains ran in all theaters of war and carried the wounded into New England from the various battlefields. A typical hospital train would consist of five ward cars, a surgeon's car, a cook car, a dispensary car, a passenger coach, and a caboose.[32] These trains were distinctly marked and were respected with neutrality from both sides.

The Confederate's railroads were being seized and operated by the Union, and their defeat was due.[33]

On April 14, 1865, President Abraham Lincoln was shot in the head by the actor John

Wilkes Booth. After Lincoln's assassination his body was carried from Washington to Springfield, Illinois, on a nine car funeral train allowing for mourners to pay their last respects. At the major stops where the President's body was displayed eulogies were offered to honor his guiding spirit, and crowds congested the streets to say their farewells and look upon their president one last time.[34]

Railroads used during the Civil War would provide adequate information learned about the operations and impact railways can have—bringing a whole new concept to warfare. It brought life to these great beasts by revealing their magnificence as industrialized war machines.

The Golden Age

Charles Carroll, the last surviving signer of the Declaration of Independence, turned the first spade of soil on July 4, 1828 for the first railroad in America, the Baltimore and Ohio Railroad.[35] As railroads were being built and becoming more popular a whole new technology had to be invented out of necessity.[36]

After the Civil War the United States economic life would continue to grow rapidly. A new age of industry was beginning: factories sprang up and countless miles of railroad track laid. By the end of the nineteenth

century Indiana was one of the top manufacturing states in the nation, it was a part of

America's industrial heartland that the rest of the world envied.[37] American trains were

marveled for their greatness because they were intimidating creatures built by human

ingenuity.

In 1917, after America's involvement in World War I, railroads would again be

recognized for their military importance. The railway system was nationalized by the United

States Railroad Administration (USRA) in 1918.[38] In the 1920's and 1930's railroad ridership

declined due to the growing popularity of automobiles. People began to drive autos because it

provided their own mobility. Vehicles attracted women because they found freedom for

independence.[39] Railroad employment had decreased by 42% by 1932.[40] Like most businesses

during the Great Depression, railroads companies declined in ridership and freight and some

companies went broke. Although, transit was still used by people who were trying to find jobs,

and rail transportation made it possible to get back and forth from the suburbs to the city.[41]

Transportation promoted a safe and healthy lifestyle during the nation's struggle.[42] Railway

companies knew that if they wanted to compete with other forms of transportation they would

have to appeal to the people and become more efficient in order to be successful with

ridership.[43]

The American train stations were once one of the most beautiful and exquisite in the

world to the people.[44] The architecture was elaborate and was the welcoming gateway to the

community.[45] They were the focal point of America's pride. "America was mad for design,

especially when it came to machines," and trains were at the center .[46] Locomotives transferred

commercial goods and passengers cars to towns; gaining the town more people, business, and

goods for purchase.[47] The faster the goods were transported meant that business would grow faster. The cities saw people from the country move to city, providing a bigger workforce for the growing factories. Human imagination built beautiful, mechanical beasts.[48] Railroads also helped the coal, lumber, and steel industries in the moving of their goods. Because of the need of railways new jobs were created: laying lines and building tracks and engines. But since there was a growing demand for other supplies jobs were needed because of the railroads quick and inexpensive transportation. Without railroads the Industrial Revolution may have never prospered.

The development of railroads was one of the most astute and beautiful phenomena produced in the Industrial Revolution.[49] Trains brought social, economic, and political change and America would become the majesty of rail locomotives crossing the country. From farmers to politicians all could see the importance of the railways and the advantages that came with it; if a town was unconnected it could not thrive and would eventually die. The United States was brought together by railroads and allowed for the country to grow and prosper. Indiana's cities became industrialized, such as: Fort Wayne, South Bend, and Muncie.[50] Muncie became the spotlight for businesses, such as the Ball Bothers Company—the largest glass canning-jar factory in the world.

Many trains were converted from steam to cheaper diesel-electric power after the devastation railroads faced after the Depression. Railroads would operate and manage themselves to support the nation's war effort; precisely what happened in World War II—proving to be prominently successful. The 1940s brought hope back to the railway and new business.

World War II

The "war to end all wars" began on September 1, 1939 with the invasion of Poland, and the world found itself in another World War.[51] At the beginning America was content with not partaking in the conflict since it was still recovering from a Depression and World War I. America aided the Allied Forces through the Lend Lease program by aiding the Allies with equipment. Railroads transported the goods, but engines were also sent over. The Soviet Union received 1,900 steam engines and 50 diesel engines.[52]

December 7, 1941, "a date which live in infamy," changed the course of history.[53] Pearl Harbor was attacked and America was now fully involved in the outcome of the war. Moving troops became the first priority of the nation and trains would be the key participant in the mobilization of the nations as it embarked for a war overseas. The Office of Defense Transportation (ODT) was created to oversee all national allocation of transportation of resources and troops, but to also eliminate the use of Pullman Sleepers to the public; freeing up cars to be put to more use on the busy transcontinental lines for troop movement.[54]

Railway systems would become indispensable to the national defense.[55] Railroads were responsible for achieving the readiness of a nation. The duties of the trains were to start the preliminary movement of troops and military equipment overseas. 91% of all military freight and 97% of servicemen were transported by railroads by the end of the war.[56] Trains were America's road to victory because they were indispensable for the national defense. Railroads were even growing in popularity in the states. There was a rationing of rubber and gasoline, so civilians began to depend upon the railway systems for transportation. Gas ration tags were placed on automobile windshields, and were classified by the amount of the gas the needed for personal use.[57] During the effort when businesses were asked to donate aluminum, "Metal for Victory," Union Pacific

answered the call. They scraped their first streamliner, *City of Salina,* to support the war effort.[58]

Passenger rail increased (from 425, 921,000 in 1940 to 910,295,000 in 1944), military

traffic increased, but also freight services increased as well.[59] Since the 1920s passenger rail had

decreased, but during the time of the war they again thrived. The railroads were effective to

the conflict outcome, and the era of World War II (1942-1945). American railroad's contributed

to the country by transporting millions of soldiers, sailors, and marines, all while still

maintaining civilian passenger rail.[60] Since rail traffic increased tremendously, both military and

civilian, it became difficult to obtain reservations on Pullman and reserved-seat coaches.

Railroad companies provided travel tips to keep America's transportation system on running

smoothly and on track, but also reminding citizens that supporting and aiding the troops was

the top priority.[61]

The government took control over the railroads on December 27, 1943, when President

Roosevelt directed Secretary of War, Henry Stimson, "to manage and operate" carriers in any

manner necessary to "assure continuous and uninterrupted transportation service."[62] Pullman

built 1,200 sleepers and 440 kitchens cars were built by the AFC. Over the course of the war

17,507,647 servicemen were transported by the Pennsylvania Railroad. [63] Advertisements were created by railroad companies to promote patriotism and the need to win the war. Railroads were not just moving troops but also the necessities to supply them and win a war. Supplying the soldiers with food, ammunition, and equipment came first.

The Chesapeake and Ohio Railroad used their famous advertisement, Chessie the cat, to support the war effort. Chessie was involved in the nation's difficulties, the people could relate to her. During the beginning struggles of World War II Chessie gave the feeling of goodness and contentment. Chessie promoted the selling of War Bonds during WW II.[64] Chessie was shown working on the home front while she supported Peake who was fighting in the war. Chessie gave up her Pullman compartment for traveling soldiers. She helped bolster the American spirit of the depression-ravaged people. People could relate to Chessie because she had to make sacrifices just like the rest of the country.

During WWII the Horseshoe Curve was considered to be so vital to the nation's security that it was closed down to the public and placed on 24-hour watch. On June 13, 1942 four Nazi saboteurs came ashore on Long Island and four more from Florida with plans to demolish the Horseshoe Curve a highly component industrial and transportation systems.[65]

Railroads transported a nation to victory. The logistics of railroads was to supply and transport an army in war. They carried a burden to transport, but answered the call when the nation was in a catastrophe. Military railroads used their services to the fullest. The workers and official's knowledge of facilities and methods, and manpower were of great value.[66] Railroaders' skills and ingenuity were enthusiastically praised by the country for their service to

the war. After the war was over Ralph Kelly, president of the Baldwin Locomotive Works, said, "From now on the emphasis must be on the future rather than the past. Undeniably the future holds many difficult problems, but at the same time, it offers the possibility of the greatest era of development the world has ever know."[67] The fine tool equipment and skilled personnel gave promise for America's future railroads.

Conclusion

The railroads served the United States by mobilizing the country through conflict and intertwining military and railroads in history. Railroads fueled the American spirit. Trains are a vital part of America's history, but they also have a connection to the future. Railroads have been efficient and reliable through America's time of need. Ralph Kelly best comprehended the importance of advancing industry with new more modern passenger cars, "the future for U.S. rails was *now.*"[68] Throughout history wars have set up new milestones of transportation progress, and the tracks of yesterday are here today as a reminder of how rail stimulated the country, and how they can prepare for a more efficient tomorrow.

Notes

[1] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 8-9.

[2] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 188.

[3] Koenig, Alan R. *Railroad's Critical Role in the Civil War.* America's Civil War magazine. 12 June 2006. Web. 09 February 2015.

[4] Arrington, Benjamin T. *Industry and Economy during the Civil War.* National Park Service. Web. 09 February 2015.

[5] *The Civil War, A Visual History: Rare Images and Tales of the War Between the States.* Parragon, 2011. 208-209.

[6] *Railroads of the Confederacy.* Civil War Trust. Web. 09 February 2015.

[7] Koenig, Alan R. *Railroad's Critical Role in the Civil War.* America's Civil War magazine. 12 June 2006. Web. 09 February 2015.

[8] Clinton, Catherine. *Scholastic: Encyclopedia of the Civil War.* Fair Street Productions, 1999. Page 30.

[9] Clinton, Catherine. *Scholastic: Encyclopedia of the Civil War.* Fair Street Productions, 1999. Page 30.

[10] Koenig, Alan R. *Railroad's Critical Role in the Civil War.* America's Civil War magazine. 12 June 2006. Web. 09 February 2015.

[11] Arrington, Benjamin T. *Industry and Economy during the Civil War.* National Park Service. Web. 09 February 2015.

[12] Clinton, Catherine. *Scholastic: Encyclopedia of the Civil War.* Fair Street Productions, 1999. Page 41.

[13] Arrington, Benjamin T. *Industry and Economy during the Civil War.* National Park Service. Web. 09 February 2015.

[14] Clinton, Catherine. *Scholastic: Encyclopedia of the Civil War.* Fair Street Productions, 1999. Page 40.

[15] Clinton, Catherine. *Scholastic: Encyclopedia of the Civil War.* Fair Street Productions, 1999. Page 53

[16] *The Civil War, A Visual History: Rare Images and Tales of the War Between the States.* Parragon, 2011. Page 125.

[17] Hollis, Dave. *The Impact of Railroads on Warfare During the American Civil War.* TOCWOC. 16 February 2010. Web. 09 February 2015.

[18] Hollis, Dave. *The Impact of Railroads on Warfare During the American Civil War.* TOCWOC. 16 February 2010. Web. 09 February 2015.

[19] Hollis, Dave. *The Impact of Railroads on Warfare During the American Civil War.* TOCWOC. 16 February 2010. Web. 09 February 2015.

[20] Hollis, Dave. *The Impact of Railroads on Warfare During the American Civil War.* TOCWOC. 16 February 2010. Web. 09 February 2015.

[21] Clinton, Catherine. *Scholastic: Encyclopedia of the Civil War.* Fair Street Productions, 1999. Page 41

[22] *The Civil War, A Visual History: Rare Images and Tales of the War Between the States.* Parragon, 2011. Page 209.

[23] Hollis, Dave. *The Impact of Railroads on Warfare During the American Civil War.* TOCWOC. 16 February 2010. Web. 09 February 2015.

[24] *Top Secret: the Stager ciphers in the Civil War.* New York Historical Society, New York. October 2010. Web. 24 February 2015.

[25] Railroad Museum of Pennsylvania. Visit. February 2015.

[26] Railroad Museum of Pennsylvania. Visit. February 2015.

[27] [27] *Railroads of the Confederacy.* Civil War Trust. Web. 09 February 2015.

[28] Funk. *Hoosiers In the Civil War.* Print. Page 127.

[29] Abdill. *Civil War Railroads.* 214.

[30] Davis, Stephen. *Andrews Raid.* History & Archaeology: Civil War & Reconstruction, 1861-1877. New Georgia, Encyclopedia. 2014. 21 April 2015. Web.

[31] Arrington, Benjamin T. *Industry and Economy during the Civil War.* National Park Service. Web. 09 February 2015.

[32] Abdill. *Civil War Railroads.* 213.

[33] Arrington, Benjamin T. *Industry and Economy during the Civil War.* National Park Service. Web. 09 February 2015.

[34] Weber. *The Northern Railroads in the Civil War, 1861-1865.*

[35] Simons, Richard, S., and Francis H. Parker. *Railroads of Indiana.* Indiana University Press, Bloomington & Indianapolis, 1997. Page 6

[36] Simons, Richard, S., and Francis H. Parker. *Railroads of Indiana.* Indiana University Press, Bloomington & Indianapolis, 1997. Page 14.

[37] *Hoosiers and the American Story.* Indiana in the Railroad Age. Page 119

[38] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II*. Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 8.

[39] Scharff, Virginia. *Taking the Wheel: Women's and the Coming of the Motor Age.* New York: The Free Press. 1991. Page 89.

[40] Internal Incorporated: Rail Life Blog. *Women's History Month-Women and the Railroad Industry.* 24 March. Web. 25 February 2015.

[41] Post, C. Robert. *Urban Mass Transit: The Life Story of a Technology.* The John Hopkins University Press, Baltimore. 2010. Pages 96 & 150.

[42] ICAT Presentaation: Central Indiana Transit Plan.

[43] Post, Robert C. *Urban Mass Transit: The Life Story of a Technology*. The John Hopkins University Press, Baltimore. 2010. Pages 26.

[44] Landeck, Carl & Roger Thorne. *The Pennsylvania Railroad During World War II.* Page 40.

[45] Breslin, Ed and Hugh Van Dusen *America's Great Railroad Stations.*

[46] Baker, Kevin. *21st Century Limited: the lost glory of America's railroads.* Folio. 47.

[47] *Hoosiers and the American Story.* The Age of Industry Comes to Indiana. P. 115.

[48] Lomax, Eric. *The Railway Man: A POW's Searing Account of War, Brutality and Forgiveness.* W.W. Norton & Company, Inc., New York, 1995. Page 16.

[49] *Railroads and the Making of Modern America.* Council on Library and Information Resources. 2011. Web. 5 February 2015.

[50] *Hoosiers and the American Story.* Indiana in the Railroad Age. Page 119

[51] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 10.

[52] Railroad Museum of Pennsylvania

[53] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 9.

[54] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 10

[55] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 54.

[56] Railroad Museum of Pennsylvania

[57] Mike's Railroad Blog: thoughts, images & stimuli for the ferroequinologist. *Research makes for a great layout.* Sunday, April 22, 2012.

[58] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 11

[59] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 203-204.

[60] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 204.

[61] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 214.

[62] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 103.

[63] The Pennsylvania Railroad During World War II, Pennsylvania Railroad 1945 Annual Report.

[64] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger, Donald J., & John Kelly. Page 39

[65] Pennsylvania Railroad Museum. Visit. February 2015.

[66] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 321.

[67] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 348-349.

[68] Heimburger, Donald J., & John Kelly. *Trains to Victory: America's Railroads in World War II.* Heimburger House Publishing Company, Forest Park, Illinois. 2009. Print. Page 349.