

Spring 2021

Warhorses Amongst War Machines: The German Army's Use of Horses and Cavalry During World War II

Katherine V. McFarland
University of South Carolina - Columbia

Director of Thesis: Dr. Josef Olmert
Second Reader: Charles Brown

Follow this and additional works at: https://scholarcommons.sc.edu/senior_theses



Part of the [Military History Commons](#)

Recommended Citation

McFarland, Katherine V., "Warhorses Amongst War Machines: The German Army's Use of Horses and Cavalry During World War II" (2021). *Senior Theses*. 405.
https://scholarcommons.sc.edu/senior_theses/405

This Thesis is brought to you by the Honors College at Scholar Commons. It has been accepted for inclusion in Senior Theses by an authorized administrator of Scholar Commons. For more information, please contact digres@mailbox.sc.edu.

TABLE OF CONTENTS

THESIS SUMMARY	3
INTRODUCTION	4
THE GERMAN CAVALRY AND THE INTERWAR YEARS	6
The German Cavalry	6
Treaty of Versailles, 1919	12
Hitler's Rearmament and Nazi Germany	14
ON HORSES AND MEN	19
Strategy and Operation Planning	19
Truppenführung	24
The Bond Between Man and Beast	25
THE HORSE IN WAR	28
Suitability of Breeds	30
Horse Care	32
The Battle Horse and the Supply Chain	35
THE MOUNTED CAVALRY OF WORLD WAR II	43
Organization	43
The Waffen-SS	44
Equipment and Uniform	46
Cavalry Training and the Remount Program	50
SELECT CAMPAIGNS OF WORLD WAR II	57
Polish Campaign, 1939-1941	57
The Western Front, 1940	62
The Battle of Britain and Operation Sea Lion	64
Operation Barbarossa and the Eastern Front, 1941-1945	65
Operation Spring Awakening and the End of the War	73
THE HORSE BEYOND COMBAT	75
Psychotherapy	75
Eugenics	76
CONCLUSION	78
BIBLIOGRAPHY	80
APPENDIX	84

THESIS SUMMARY

This thesis explores the role of the horse as used by the German Army throughout the Second World War. Contrary to the propagandic image of a mechanized Germany and of the *blitzkrieg*, the reality of warfare at the time remained primarily dependent on the horse, as man and beast continued to engage in conflict side by side. Horses served a variety of uses within the German forces, from mounted cavalry to hauling artillery, with disasters and successes throughout the war. Employing vast numbers of horses, the Germans allocated extensive resources, and often found themselves relying on the animal when vehicles losses were high. The scope of this work includes a discussion on war strategy, select campaigns in which the horse played a pivotal role, the history of cavalry within Germany, and training of cavalrymen and their horses. It is important to understand the role of the horse within the scope and context of the German Army during World War II, in order to fully analyze and comprehend the German Army's operations.

INTRODUCTION

A quick nudge of the heel and the horse leapt into a gallop – for a brief moment the horse pulled against the bit in his mouth towards freedom and the soldier felt the power beneath him; the same power Napoleon and Alexander felt as they charged into battle. Suddenly, the ground seemed to erupt as a shell buried itself into the dark earth and sent horse and rider into a frenzied state, racing towards an inevitable barrier, not of horseflesh but rather of steel and iron. Flashes of metal – bullets, not swords – whizzed past the pinned ears of the horse and the helmeted head of the German cavalryman as they dashed into the fray of war and strife. Yet this was not the first time war horses met war machines on the battlefield; indeed, the frantic meeting of cold steel to equine muscle had occurred across the map, on local to global stages, with disastrous consequences.

Still ensuing after the lessons of the First World War, the warhorse was destined to continue its ride with the German Army during World War II. Historically met by other horses and swords, the twentieth century cavalry horse would now be met by machine guns, tanks, airplanes, and motor vehicles. A great misunderstanding of World War II is that of the mechanized and advanced German Army. While the German Army possessed motorized vehicles and an impressive tank strategy, the majority of her forces relied on horse-drawn transport and supply. So much so has this image influenced how the past is told, that the hoofprints of millions of horses have almost faded from the pages of history. The image of the German blitzkrieg, aimed to strike fear and terror in the minds and hearts of Germany's enemies, was in reality only a portion of the military force and masked a largely under-motorized army.

The role of the horse as it was used by the German Army during the Second World War, while being inspected to an extent compliant with available resources, has not been adequately dispersed nor their significance fully explained within the context of World War II as a whole. While the end of the cavalry was a subsequent consequence of a modernizing world, the horse's role as a dependable and relentless 'soldier' persisted during modern conflict, and therefore deserves to be understood within the context of the Second World War in which they were so numerous deployed and recognized for their contribution and impact. Even as war modernized, horses retained a, albeit decreasing, role in support and transportation.

Further, to remember the warhorse and to understand their plight, is akin to remembering the soldier who gave his life on the battlefield and the extended impact of war on the land and animals; it is not only essential to understanding our past, but in the understanding of how far we have come as humankind, from bareback charges across open fields to armored calvary retaining the name as an ode to their origins. Horses are flight animals who learned to trust man even after man hunted them and became the mode for many battles and empires to be established.¹ In battle, they were urged forward only by trust in the rider upon their backs, giving man the gifts of speed, height, strength, intimidation, and companionship.

As a testament to the warhorse, but also in an effort to understand the full comprehensive nature of the German Army operating during World War II, it is necessary to explore the large role the horse played during the war. This thesis seeks to understand and analyze the use of horses and cavalry by the German Army during the Second World War in the context of mechanizing warfare.

¹ For further information see Wendy Williams' book *The Horse: The Epic History of Our Noble Companion*. New York, NY: Scientific America, 2015.

THE GERMAN CAVALRY AND THE INTERWAR YEARS

“A thousand years or more of cavalry achievements and tradition were being consigned to the dustbin of history” according to Peter Hart who wrote of the impact of mechanized warfare in his book *The Somme: The Darkest Hour on the Western Front*.² Hart was describing the Battle of Flers-Courcelette in the First World War and the inevitable realization that horses were no match for the beasts of steel that opposed them on the battlefield. Indeed, many western nations took their cavalry and either armored them or relayed them to be ceremonial following the Great War. If these nations retained cavalry into the Second World War, they eventually were phased out. These nations included Poland, Belgium, and Russia, among others.

The broader matter of cavalry becoming obsolete in the face of metal and technology was an inevitable truth of modern warfare. However, the prevalence and continuation of the use of the horse within the German Army in the Second World War and furthermore into the twentieth century, was in part due to engrained tradition and regulatory circumstance following the First World War. This positioning, and the undeniable mobility advantages of the horse placed the animal to retain a prominent role in the German Army.

The German Cavalry

The cavalry³ was an essential military component in armies once man understood how to harness the power of the horse and utilize that power on the battlefield. A man on a horse is not only bigger, but faster and more terrifying than a man on foot. Although the horse presented a

² Hart, Peter. *The Somme: The Darkest Hour on the Western Front* (New York, NY: Pegasus Books, 2010), 407

³ Appendix: Image 15

larger target, and stopping the horse would stop the man, larger horses carried more weight and thus more equipment. An impressive figure, a man on horse could not only ram into his enemies but could leap over obstacles and utilize his horse's hooves to inflict damage along with his weapons.

Cavalry has its roots in the ancient civilizations such as the Sumerians in Mesopotamia and the Egyptians, whose warriors used horses to pull war chariots. The Persians rode against the Greek infantry in 4th century BC, without armor or stirrups. Elite, aristocratic horsemen were enlisted into the Macedonian cavalry, a heavily armored and impressive force.⁴ European cavalry is thought to be dated to the fifth century BC, and it continued to be a prominent component of European militaries up until the late 1800s.⁵ The Franco-Prussian War can be considered the last continuous cavalry dependent conflict, where the operations were cavalry-on-cavalry.⁶ By the end of the nineteenth century and into World War I, western nations still fielded cavalry units and divisions, but they adapted to newer technologies and transitioned to fighting on foot, the United States cavalry during the civil war being a prime example.⁷

By the turn of the twentieth century, the romanticism of the cavalry was dying out, as military leaders began to consult the effectiveness of the cavalry as it related to working against and with infantry. As weapon technology advanced, as did warfare, horses were utilized more as transport than as weapons of war. The mentality of the cavalry soldier also changed; by transitioning to fighting on foot, the soldier “did not feel morally obligated...to die on horseback.”⁸

⁴ Parker, Geoffrey. *The Cambridge Illustrated History of Warfare*. (Cambridge: Cambridge Univ. Press, 2008.) pages 12-34

⁵ Dorondo, D. R. *Riders of the Apocalypse: German Cavalry and Modern Warfare, 1870-1945*. (Annapolis, MD: Naval Institute Press, 2012.) p4

⁶ *Ibid*, page 16

⁷ *Ibid*, 18

⁸ *Ibid*, 18

The shock of a charging horse historically would send men to hit the ground, both to evade sabers and to make an obstacle for the horse to avoid.⁹ However, war tactics changed as infantrymen grew accustomed to confronting cavalry. As firearm technology advanced, an infantryman not only could confront the cavalry from a distance, but also target the horse better, as to stop the horse would mean stopping the cavalry altogether as man and beast fell. Infantrymen armed with arquebuses and protected by pikemen were standard opponents to cavalry, until the invention of socket bayonets enabled soldiers to simultaneously reload and continue on the defense.¹⁰ During the Franco-Prussian War, German infantry simply stood in lines and shot at charging cavalry. In this way, the opposing French cavalry suffered heavy losses and infantry gained an advantage over the mounted warrior. The war also highlighted the substantial advantage mounted soldiers had in reconnaissance work.¹¹

The strength of the cavalry remained in their specific power of the charge and the shock value of hundreds, if not thousands, of horsemen charging upon their enemies. Horsemen remained effective in reconnaissance¹² and, in some cases, pursuing a fleeing army. Removed from the battlefield, the cavalry retained a certain romanticism, whether in uniforms adorned in gold or horsehair plumes atop a shiny helmet.¹³ Reconnaissance and screening remained an integral purpose of the cavalry but compared to the American cavalymen of the Civil War, German cavalry was slow to adapt to the modern era. As Union and Confederate soldiers were essentially light dragoons, or mounted infantrymen, the Germans continued to specialize their cavalry until 1870. Light cavalry, while best suited to reconnaissance, security, and screening,

⁹ Ibid, p20

¹⁰ Ibid, p7

¹¹ Ibid, p21

¹² Appendix: Image 5

¹³ Ibid, pages 16-17

still differed greatly from heavy armored cavalry, equipped for battle. American cavalrymen were trained to fight mounted or dismounted, and yet still were trained for reconnaissance and messenger services.¹⁴

This is not to say that cavalry was always successful in pursuit or reconnaissance. The Prussian cavalry at Königgrätz in July 1866 failed to provide effective reconnaissance before the battle and then did not carry out an effective pursuit of the fleeing Austrians. Regardless, Helmuth von Moltke the Elder, Prussia's leading commander, still maintained the cavalry could work effectively alongside artillery and infantry. The French army, during the Franco-Prussian War, apart from not having adequate horse reserves, had failed to understand the size and power of the German Army. Consequently, the French cavalry, who did not change tactics and rode through fields lined with fences and grape vines, were met with heavy rifle fire as they approached Froeschwiller, Worth, and Morsbronn.¹⁵

German cavalry continued to prove worthwhile in the war against the French, as they maintained intelligence reports and fixing the enemy until infantry arrived. German scouts would go as far as forty miles ahead of the main columns of infantry. In August 1870, cavalrymen were successful in destroying French railroads and cutting telegraphs. Apart from psychological victories as the Germans pushed the French deeper into Francophone country, the Prussians were successful in a straight to gallop charge (typically the gallop was developed after some trot and canter) and successfully attacked the French gun-line at Mars-la-Tour, allowing infantrymen and artillery to regroup.¹⁶ The charges at Mars-la-Tour, for there would be a second charge later on

¹⁴ Ibid, p18. Further, see Appendix: Image 14

¹⁵ Ibid, p20-21

¹⁶ Ibid, p24

August 16, are described as the last truly successful charges in Western European warfare, executed under General von Bredow.¹⁷

The classic charge, however, was becoming obsolete, as many of the charges in the Franco-Prussian War served as a means to give infantry time. Putting aside tactical and organizational shortcomings, as there will always be arguments to the effectiveness of the use of the cavalry in the late nineteenth century, the inescapable reality was to be that firearms and sheer artillery progression was diminishing the role of the cavalry on the battlefield. However, the German cavalry, employing tactics from Napoleon 1, were able to temporarily elude this notion, as approaching cavalry at a gallop could avoid heavy losses from canon-fire and thus appear effective and more powerful on the battlefield.¹⁸

By the outbreak of the First World War, the need for the horse on the battlefield was being called into question, as coordinated infantrymen replaced the charge, vehicles worked alongside horses as transportation, and firearms were greatly improved in terms of range and accuracy. On top of the interdiction between beast and steel, a growing European population meant an increase in infrastructure and urbanization across the continent. Fences, walls, mine-pits, railways, and soft footing were some of the consequences of this population growth, and all contributed to a hinderance of mounted troop movement.¹⁹

The Boer War and the Russo-Japanese War of the period hinted towards the modernizing role of the cavalry; that of mounted infantry. The greatest weapon in the cavalry's toolkit did remain the charge, which was sacrificed when soldiers dismounted to rely on firepower.

¹⁷ Ibid, p25

¹⁸ Ibid, p28

¹⁹ Ibid, p40

German cavalry rode to battle in the First World War, but trenches cut through the European country, artillery fire created gridlock, and the front lines grew static, creating a curtailed role for the cavalry.²⁰ By October of 1914, German cavalry on the Western Front began transitioning to infantrymen, although evidently most of the grounded cavalymen refused to remove their spurs.²¹ On the Eastern Front, cavalry proved invaluable against the Russians, messing with lines of communication and overall logistics, as well as effectively screening and reconnoitering.²²

The Battle of the Somme, an iconic and essential battle for Allied victory in the Great War, was a quintessential exhibition of the meeting of cavalry and modern warfare. The Somme, for many nations, sealed the fate of the cavalry and delegated mounted units to their modern-day roles. Trench warfare, advanced guns and ammunition, aerial attacks, and chemical gas were only a few of the new horrors that faced the cavalry. In the end, the cavalry, as fast as they could charge, could not outrun the inevitable fate of becoming irrelevant in the face of rapidly advancing warfare and unspeakable terrors.²³

By the end of the Franco-Prussian war, the German cavalry had adapted to include traditional instruction of saber and lance, but also that of firearms. In this way the German cavalry was still relevant to the military, and because of this adaptability, would continue to exist while other nations transitioned to ceremonial cavalries or motorized divisions. German cavalry had expanded to include horse-drawn artillery and a truck column and while they were not as strong as the infantry, they were certainly stronger than their counterparts.²⁴

²⁰ Ibid, p46

²¹ Ibid, p56

²² Ibid, p63

²³ Ibid, 59

²⁴ Ibid, p69-70

While the cavalry's fate following the Great War would primarily depend upon "acts of faith"²⁵ and the endorsement by older cavalry officers and military men, the Treaty of Versailles decreed that mounted troops would continue to exist and survive as part of Germany's military force. However, the question of whether cavalry was seen as a necessary component of the army or rather an obsolete allusion of military power remained. Technology certainly seemed limited in 1918 and the opinions and favor towards motorized vehicles were to operate alongside mounted troops remained a popular one.²⁶

Treaty of Versailles, 1919

The prevalence of the horse within the German Army was in part due to the Treaty of Versailles following World War I. Not only did the Treaty limit the size of the army, but it also placed the horse in a prominent position, both in a military sense and a reparation sense as well.

Part V of the Treaty encompasses the Military, Naval and Air Clauses. Section 1 of Article 160 limited the German Army to 100,000 men divided amongst three divisions of cavalry and seven infantry divisions. Officers and depots were included in the one hundred thousand. Section 2 details that each cavalry regiment, and further each infantry regiment, were allowed their own depot. The three cavalry divisions consisted of 18 regiments and 16,400 men.²⁷

Part III of Table No. I of the treaty further breaks down the cavalry division, assigning a maximum of 275 officers and 5,250 NCOs and men per unit. This included horse artillery and

²⁵ Ibid, p72

²⁶ Ibid, p76

²⁷ Treaty of Versailles - Knox, Philander C. *Treaty of Versailles*. (Washington, Govt. print. Off, 1919. Web. <https://lccn.loc.gov/43036001>)

the cavalry regiment. Table No. II assigned 18,000 carbines to the cavalry divisions, along with 36 heavy machine guns and 36 7.7 cm guns.²⁸

Annex IV, Section 2 allowed the Allied and Associated Governments to file with the Reparation Commission for articles such as animals, equipment, tools, and reconstruction materials. Section 6 goes into further detail, listing the monthly installments Germany was to owe France and Belgium. The two countries were to receive, in decent health, stallions, mares, and fillies of various breeds. Specifically, France was to receive 500 stallions (ages 3 to 7), and 30,000 fillies and mares (18 months to 7 years old). The mares and fillies were to be Ardennes, Boulonnais, or Belgian. Belgium was to receive large Belgian type horses: 200 stallions, 5,000 mares, and 5,000 fillies. In addition, both governments were to receive bulls, cows, rams, sheep, and goats.²⁹

The Treaty of Versailles handicapped the German Army following the end of World War I. Versailles restricted motor vehicle usage as well as forbidding the use of modern weapons (tanks, heavy artillery, anti-aircraft guns, etc.). At the time of the signing of the Treaty of Versailles, cavalry was considered outdated and of little threat. Armed with lances, even a large cavalry force seemed to have no place in modern warfare. Furthermore, maintaining a cavalry of that size required a large financial commitment, as procuring, training, and maintaining horses was costly. Money allocated to the cavalry could therefore not be spent on other military matters.³⁰

Apart from the Treaty of Versailles, the Treaty of Rapallo is worth mentioning. The Rapallo, signed in 1922, was an agreement between Germany and the Soviet Union which

²⁸ Ibid

²⁹ Ibid

³⁰ Richter, Klaus Christian. *Cavalry of the Wehrmacht, 1941-1945*. (Atglen, PA: Schiffer Military History, 1995.) pages 9-10

forgave reparations from World War I and laid the groundwork to resume diplomatic relations.³¹ Importantly, this treaty allowed the two nations to establish military cooperation, although Germany would later disregard this alliance and invade the Soviet Union. Upon doing so, they would also disregard the Treaty of Berlin, which had enabled the Germans to secretly test equipment in Russia in the years leading up to the war.³²

Hitler's Rearmament and Nazi Germany

Adolf Hitler was sworn in as Chancellor of Germany on January 30, 1933. Immediately, he began to assert his vision for Germany. The biggest obstacle in his path remained the Reichstag and the existing Parliament. Hitler, if he would attain any power or influence as Chancellor, would need a majority in the Parliament, of which they held less than half.³³ In order for his vision to manifest and lead Germany, he would need to dissolve the former Reichstag and remove those who stood in his way of power. He would also need to rearm Germany and give her a military fit for his vision of a 'Thousand-Year Reich.' What occurred was the infamous Reichstag Fire and a complete upheaval of German leadership.

The military arm of Hitler's regime was to be an important institution, and even Versailles would not limit him. Rearmament began secretly, opposed and doubted by military leadership until military sovereignty was announced on March 16, 1935.³⁴ This marked the change from the Reichswehr to the Wehrmacht, and a reinvention of German identity up until

³¹ "Rapallo Treaty." *A Dictionary of Contemporary World History*. Oxford University Press, March 21, 2019.

³² Müller, p 53

³³ Shirer, William L., and Ron Rosenbaum. "*The Rise and Fall of the Third Reich: A History of Nazi Germany*." (Simon & Schuster, 2011.), pages 188-189

³⁴ Müller, Rolf-Dieter, and Janice W. Ancker. *Hitler's Wehrmacht, 1935-1945*. (Lexington, KY: University Press of Kentucky, 2016.), p7

that point in time.³⁵ Following the proclamation, the rearmament of the German Army accelerated rapidly, with Hitler fully and irrevocably spurning the Treaty of Versailles. The army was expanded to 103 divisions, and the draft, which had been forbidden under Versailles, was reinstated. The *Sturmabteilung* (SA) was ousted to make room for the *Schutzstaffel* (SS), the fanatical wing of the German Army known for horrendous war crimes and elite status.³⁶

Immediately, cracks broke through Hitler's operation. Versailles had limited military production (guns, tanks, etc.), and the eligible population with military training for enlistment was severely lacking, due to a decline in births following World War I and an irregular eligibility limitation imposed by Versailles.³⁷ Regardless, Hitler drove expansion forward, demanding an expedited timeline and unveiling the *Luftwaffe* and the *Kriegsmarine*. Germany was not prepared for the rapid pace it was to see herself strain under. The 1930s had dealt a hard hand to Germany, and the nation was reeling from a recession and high levels of unemployment. In order to sustain the expanding military, reduced spending in the civilian sector would have to be enforced, and men would need to be conscripted from the workforce.³⁸

The economy and nation were further strained due to a shortage of steel and iron; metals desperately needed for motorization and armament. Large scale projects and programs initiated by Hitler competed with depleted railways for precious iron and steel. Iron and steel were allocated throughout the Reich, for barracks and Army infrastructure. Metal was also sent to build fortifications along the western lines. Weapons, ammunition, equipment, and motor vehicle

³⁵ Richter, p9 - The Law or Edict for the Building up of the Armed Forces/Wehrmacht

³⁶ Müller, p10

³⁷ Ibid, p12

³⁸ Ibid, p15

production subsequently fought for adequate steel.³⁹ Remaining metals initiated a struggle amongst the Army, Kriegsmarine, and the Luftwaffe.

Over the battle for metal and material, the shortfalls of the leadership structure of the Third Reich began to show. Until later in the war, Hitler partook a passive role in the decision making of the Kriegsmarine and Luftwaffe.⁴⁰ Thus, there was a misalignment among top leadership, and naturally there was rivalry and competition amongst the different military branches, and of course, the individual ambitions of the leadership.

Apart from limited steel resources, the German army's attempt at truck and car production and innovation was flawed in more ways than one; after a period of stagnation, production was suddenly accelerated. Reliance on foreign fuel sources influenced production numbers - in 1934, Germany saw 85% of her petroleum usage coming from foreign sources.⁴¹ The Army was reluctant to produce large numbers of vehicles in models that would soon become obsolete.⁴² Moreover, innovation was not streamlined, and the German Army, without proper alignment or resources and ideas, churned out twenty-nine models of cars and twenty-three models of trucks.⁴³ Eventually, civilian cars and trucks would fill the gaps during the campaigns, although this compounded the difficulties with available spare parts and mechanics, not to mention the linguistic disparities when the Germans would take foreign vehicles. There was a tradeoff in production, whether to prioritize tanks over trucks. The issues of metal and fuel continued to be a problem and thus, by 1941, the Germans had more horses than vehicles.⁴⁴

³⁹ Johnson, Paul Louis. *Horses of the German Army in World War II*. (Atglen, PA: Schiffer Military History, 2006.) p9

⁴⁰ Müller, p18

⁴¹ DiNardo, R. *Mechanized juggernaut or military anachronism?: horses and the German army of World War II*. (New York: Greenwood Press, 1991), p7

⁴² Johnson, p 9

⁴³ Dorondo, p 120

⁴⁴ Müller, p54

Another source of misalignment within the German army was the organization and composition of the army, throughout the war. The configuration of units was inconsistent, with elite status folding to the enlistment of child soldiers and older volunteers, among others. Although, even at the beginning of the war, units such as the Luftwaffe suffered from the lack of training and infantry experience received by the NCOs and officers.⁴⁵ The training and armament of the army was not modernized or adapted to the demands of Hitler and to the demands of the period. This is seen in the firepower choices of the Germans, which were not improved upon until the 1940s.⁴⁶ Furthermore, blending the old units of the Reichstag army with the newly formed and motorized infantry divisions created an elitist competition and rivalry within the ranks.⁴⁷

An interesting organizational addition to the Wehrmacht were battalions composed of soldiers with similar ailments. Germany pressed every able-bodied man into service and later even adapted criteria so that handicapped or otherwise disabled persons could still be used in security work or combat. This is how so-called “ear battalions” or “stomach battalions” came about.⁴⁸ The effectiveness of these units is up for debate, and not just for the hypocrisy of the murder, intentional or otherwise, of injured or handicapped people within the army and within the nation.⁴⁹

Supplying recruits and replacements to an army woven with old and new soldiers proved to be an interesting undertaking; shortfalls in training and the inexperienced younger generation spurred the creation of such programs as Hitler Youth and the Reich Labor Service.⁵⁰ These

⁴⁵ Ibid, p47

⁴⁶ Ibid, p48

⁴⁷ Ibid, 46

⁴⁸ Ibid, p84-85

⁴⁹ Ibid, p85

⁵⁰ Ibid, p93

programs actually aided to curb unemployment and to build support for the NSDAP. The RAD, *Reichsarbeitsdienst*, was a mandatory program for young adults that placed them in farms or other labor services. The intense program drilled as if it were a military program and included training in physical fitness, political indoctrination, marksmanship, and horsemanship.⁵¹ Upon completion of these programs, men would then be drafted into the army.

Germany entered the war arguably too fast, as the shortcomings in organization and allocation of resources would come to fruition later on, increasing the reliance on horses. The rapid pace at which the nation undertook rearmament ultimately became a handicap, as the Germans took on a war in which they were increasingly unprepared for, especially as the war raged on.

⁵¹ Garson, Paul. *Warhorses of Germany: The Myth of the mechanized Blitzkrieg*. (Gloucestershire: Amberley Publishing, 2018.), p 30

ON HORSES AND MEN

Strategy and Operation Planning

The outlook on the future of warfare following the eve of the First World War was essentially a discussion on the level of involvement of motorized and mechanized vehicles. To an extent, this debate indirectly was also about the role of the horse. Heinze Guderian of Germany, Basil Liddell Hart of Great Britain, and Charles de Gaulle of France, amongst other prominent figures, all voiced support behind the age of tanks. Unsurprisingly, the power of aircraft was only increasing. Cavalry veterans and members were a part of the opposition, supporting their continued presence. In an extreme opinion, General Natzmer of Germany reportedly was quoted saying “they’re supposed to carry flour” in reference to trucks in battle.⁵²

Was the world prepared for mechanized war? The question was not, at that time, if warfare was not going to continue to be mechanized. The real question, at the root of all of it, was how to best employ vehicles and what was practical and logistical given the level of mechanization within the nation. Artillery was already understood and highly considered as being more effective than infantry. Using less men and firing more often, artillery also took up less space on the front, thus opening up more line for artillery units. The main disadvantage of artillery was its lack of mobility, and inability to access certain terrains.⁵³

There were those who called for the end of calvary altogether, included amongst them, J. F. C. Fuller of Great Britain.⁵⁴ He supported this by referring to the disparity in speed between

⁵² Citino, R. (2002). *Quest for decisive victory: from stalemate to Blitzkrieg in Europe, 1899-1940*. (University Press of Kansas.) p 183

⁵³ Von Clausewitz, General Carl. *Principles of War*. Harrisburg, PA: The Military Publishing Company, 1936.) pages 27-28

⁵⁴ Citino, p185

tanks and cavalry.⁵⁵ Destruction, for Fuller, could only be avoided with a full mechanization. Cavalry was still the obvious choice for reconnaissance, however. Considering the horse, at speed, could cover approximately 150 miles a day, cavalry was an obvious choice to operate over all terrain and with the added advantage of easily hiding and moving at night.⁵⁶

In a foreword for U.S. Army Military History institute publication MS #P-090, Generaloberst Franz Halder defends his position against the cavalry, pointing towards the financial burden of using horses but also the improbability to war ever being waged in the Arctic or Caucasus; arenas that closely resembles Russia or the terrain the mountain troops faced.⁵⁷ Generalmajor Burkhart Mueller-Hillebrand, the main contributor to this report, was a cavalryman-turned-panzer commander, also shared this view, discussing that while a popular opinion in 1941-1942 was that horses were “indispensable” in Russia, motor vehicles still held the upper hand in “striking power” and “high mobility.”⁵⁸ However, the report does commend the use of horses in specific terrain, such as that of Finland, but acknowledged that the “decisive actions of a war...are not conducted in such terrain.”⁵⁹ The report goes even further to analyze operations by cavalry in Russia, noting that the “mission could have been performed by a motorized divisions with equal chance of success.”⁶⁰

Did horseflesh and steel mix? It certainly did not on the battlefield, an observation supported by manuscripts of the early twentieth century. The German Army attempted to combine the two in military maneuvers before the Nationalsozialistische Deutsche

⁵⁵ Appendix: Image 19

⁵⁶ Ibid, p186

⁵⁷ Mueller-Hillebrand, Generalmajor Burkhart “Horses in the German Army (1941-1945).” *U.S. Army Military History Institute publication MS #P-090*. Historical Division, Headquarters, United States Army, Europe., p III

⁵⁸ Ibid, p12

⁵⁹ Ibid, p13

⁶⁰ Ibid, p45

Arbeiterpartei, NSDAP, came into power. Practicing river crossings⁶¹ was considered to be a crucial training component for not only the cavalry, but also for the army. A 1932 training maneuver showed just how difficult it was to combine vehicles and horses. This particular river crossing showcased “intense confusion” of those involved and the excessive movements along the riverbanks was proved to be “fatiguing.”⁶²

Successful charges of cavalry against firearms, unsurprisingly were few and far between. However, as Friedrich von Bernarrdi notes in his tactical writing, cavalry charges in modern war were much less decisive in the outcomes as they had been before rifles and guns opposed steel and horseflesh. He referred to the cavalry’s ideology as ‘fiction’, in relation to the relevancy of the other military arms. Of course, on the advent of modern military technology and in pursuit of advancement in war, the idea of a charge in battle, linked to images of Napoleon and a different era, was relegated to be a thing of the past.⁶³

Von Bernarrdi did note that he was in favor of a cavalry still holding a charge, if infantry positions allowed one to be successful. He specifically references second and third lines of infantry, in particular to a situation in which the men, disillusioned and out-of-hand, would be taken advantage of by bold cavalymen.⁶⁴ This is where the potential success of cavalry lay, in attacks from the flank or behind, especially if artillery was at the front.⁶⁵

The issue, Bernarrdi writes, is the opinion of the cavalry still thinking of older war, in that the charge was still to be a decisive and important tactical maneuver. The cavalry was no longer necessary for artillery or infantry work. The real role would lie in the reconnoitering and

⁶¹ Appendix: Image 6

⁶² Ibid, p204

⁶³ Von Bernarrdi, Friedrich. *How Germany Makes War*. (New York, NY: George H. Doran Company, 1914.) p 91

⁶⁴ Ibid, p92

⁶⁵ Ibid, p93

screening ability, the purpose of which was to understand the enemy and their movements.

Surprise and speed, especially against long range artillery, was crucial for success. Bernarrdi suggested employing cavalry in front, to meet the opposing cavalry and then discover the movements of the enemy.⁶⁶

The cavalry would also need to be more than an offensive device. Indeed, Bernarrdi felt that the cavalry was to be an important part of intelligence operations, with patrols and transmission duties.⁶⁷ Bernarrdi warned of the tendency for idleness if the cavalry were allowed to be too close to the army.⁶⁸ Of course, one can recall the experiences of the British cavalry during the Battle of the Somme in World War I and this ideology is not far from the truth.

Military and war leaders, who took great pains to write manuals of tactics, stressed the fading role of the cavalry. Although many would recommend a continued use, albeit in a different manner, one more suited towards intelligence. In the face of modern warfare, the cavalry and their antiquated charge stood no chance against guns and machinery.

The new placement of the cavalry was behind the front line and in reconnaissance and intelligence. Von Clausewitz angled for the cavalry to be placed behind the infantry, to be used in the pursuit of retreating troops and convey a “demoralizing effect.”⁶⁹ In this manner, they were to be used in support of the infantry. Bernarrdi also reiterated this approach, for he viewed the main army as needing more time for preparatory measures and here the cavalry held greater importance in their strategical contributions.⁷⁰ So it was to be that the cavalry’s new role in the

⁶⁶ Ibid, p 94

⁶⁷ Ibid, p 95-97

⁶⁸ Ibid, p99

⁶⁹ Von Clausewitz, p 33

⁷⁰ Von Bernarrdi, Friedrich. *Cavalry*. (New York, NY: George H. Doran Company, 1914.) p 26

modern army was for the advancement of the infantry, in a supporting position to the overall combined armed forces.⁷¹

General Hans von Seeckt, the chief of Army Command for Germany, was responsible for the military strategy and composition of the army. He began preparations in the context of Versailles, considering the limited army size and weaponry allotments. At the core of his strategy, was the idea that to defeat Germany's larger neighboring armies, she must be mobile and fit enough to fight off surprise attacks. This mobility came from the large number of horses integrated within all branches. Furthermore, a prepared infantry and a "complement" of mechanized vehicles rounded out the "highly mobile, highly capable forces" that Seeckt envisioned.⁷² The key idea behind Seeckt's reasoning was considering the army forces as a whole, rather than singling out a unit or component individually. In this way, horses and cavalry retained their role in the army. This strategy played out later in the war, when the use of horses was necessary due to the loss of vehicles from fuel shortages, enemy attacks, or movement to more necessary positionings. German strategy called for clustered vehicles in fully motorized units or divisions, rather than dispersing them amongst foot soldiers and horses.⁷³

German war was considered as either *Stellungskrieg* or *Bewegungskrieg* – war of position and war of movement, respectively.⁷⁴ These two doctrines incorporated the tanks and *blitzkrieg*, but also retained a role for the cavalry and infantry. For indeed, "combined arms had been the secret of success in war from time immemorial" and would continue to be a recipe for success moving forward.⁷⁵ This combination, once again, was the question which was at the forefront of

⁷¹ Henderson, Ernest F., *Germany's Fighting Machine*. (Indianapolis, MD: The Bobb-Merrill Company, 1914.) p 44

⁷² Citino, p194

⁷³ Johnson, p23

⁷⁴ Citino, p213

⁷⁵ Ibid, p255

military planners following World War I and on the cusp of World War II. This relation amongst all military components also extended to the newly created Luftwaffe and Kriegsmarine, although for the purposes of this paper, the disparity between the speed of tanks, horses, and foot infantry presents the more crucial comparison.

It must be reiterated that the competition and miscommunication amongst the branches and leaders of the German Army influenced the strategies and policies developed by Germany. What this developed into, was a process in which military leaders created strategy, and then “top bodies” inputting their own opinions and ideas.⁷⁶ The misalignment was continuous throughout the leadership. This feeds into the incapability of Germany’s leaders to assess correctly certain opponents, such as the Soviets in Operation Barbarossa. The Germans were “adventurous” and “unscrupulous” in planning Barbarossa, and the operation exposed the broader issues of the army with the contradiction between their goals and its actual strength.⁷⁷

Truppenführung

The German manual, *Truppenführung*, served as the basic handbook for war and outlined command, field service, and joint operations. While considering training, it is important to note the role that the manual laid out for the cavalry, including retaining the sections on cavalry even with the addition of portions dedicated to tanks and motor vehicles, which would take over many of the cavalry’s original operational scope. *Truppenführung* details a cavalry brigade to be composed of two regiments, with three brigades making up a division. Within the division there

⁷⁶ “*Politics and Strategy in the Second World War: Germany, Great Britain, Japan, the Soviet Union, and the United States: Papers Presented Under the Auspices of the International Committee for the History of the Second World War, San Francisco, August 26, 1975.*” (Manhattan, Kan: [Military affairs/Aerospace historian Publishers], 1976.) p 3

⁷⁷ *Ibid*, p9

would also be a mounted reconnaissance regiment, a motorized reconnaissance battalion, an antitank battalion, a combat engineer battalion, a signal battalion, and an artillery battalion.⁷⁸

The manual outlines both technical aspects of a cavalry's operating, as well as noting the disadvantages, such as vulnerability to air attack. Chapter III of the manual outlines reconnaissance and includes the note of cavalry as having the best advantage over all terrain.⁷⁹ Additional sections outline screening capabilities, as well as instructions to quarter and shelter. The manual even gets as specific as noting that "cavalry will not block the center of the road."⁸⁰

The Bond Between Man and Beast

"You don't seem to have any idea of what our operations on horse-back are like...if we cover 90 kilometers, we need 14 to 16 hours, and that means from four in the morning to ten at night. Then at the end of all that, we have to look after the horses, which takes at least an hour, and at night be on stable watch for another one or two hours. An infantryman nowadays can march maybe 50 kilometers in a day. If he's given a 20-minute break, he lies down on the grass verge and takes it easy. But the cavalryman has to water his horse, fetching the water from as far as 200 meters away. In the infantry, two hours' rest are two hours' rest; but we need an hour and a quarter for the horse, what with unsaddling and saddling up again, fetching the animal water, food and so on. And if we want to eat, we still have to hold the horse.... the infantryman's feet

⁷⁸ Condell, Bruce, and David T. Zabecki. *On the German Art of War: Truppenführung*. (Boulder, Colorado: L. Rienner, 2001.) p20

⁷⁹ Ibid, p 42, Section 133

⁸⁰ Ibid, p68, Section 241

may ache but so do the cavalryman's-for he's had to walk 50 kilometers too, in boots made for riding, not marching...the horseman always has to lead his mount when he's on foot. After a while he has to pull it because it's had enough. Then he has to halt, because its stumbling forward.... [the cavalry] have to be eternal gipsies.”⁸¹

An excerpt from a letter of a cavalryman in the 1st Mounted Regiment captures the daily routine of a German cavalryman in combat. Early mornings were spent preparing for a long day of riding and walking, anticipating that the horse's needs would always come before their own. A Corporal in the 1st Mounted Regiment described in his diary the morning of September 1, 1939, the outbreak of World War II; He wrote of a bugle call at 2 a.m. and the cavalry riding through the night to arrive in Poland and prepare for war.⁸²

The bond between horse and rider can rival that between soldiers and can only really be understood by a fellow horseman. For the cavalry, the riders had to entrust their lives to the animal below them, as the horse entrusted its wellbeing with the man on his back. The relationship did vary of course; a cavalryman may have viewed his horse as a piece of equipment or machinery, to be replaced when worn out or dead. But why is that man has always named his horse? One can imagine, and indeed read, that a rider was in-tune with his animal, name or not. Albert Schwenn, a cavalryman whose account is discussed in the following, was a soldier who named his horse, and noted that “[Peter] was a pleasant creature.”⁸³

⁸¹ Piekalkiewicz, Janusz. *The Cavalry of World War II*. (London: Orbis Books, 1979.) p 5

⁸² Ibid, p 7

⁸³ Michaelis, Rolf and Albert Schwenn. *Albert Schwenn's Memories of the Waffen-SS: An SS Cavalry Division Veteran Remembers*. (Schiffer Military History, 2017.) p 19

This working bond can be considered deep and emotional, or a necessity. In a dispatch, a rider in the 1st Cavalry Brigade writes of his horse Herzog, and how he felt that his animal could take no more, and indeed his horse fell.⁸⁴ This connection comes after spending countless hours with the animal partner, working and listening to every movement or expression. One can compare this relationship with modern-day military dogs and their soldiers. U.S. Army Corporal Dustin Borchardt is one such soldier, who has “adapted” to his dog, Pearl, and is so in tune with her that he “just look[s] at her” and the pair know their mission and understand each other.⁸⁵

⁸⁴ Ibid, p 9

⁸⁵ Tawny Schmit, “Soldier Builds Unbreakable Bond with Military Working Dog,” www.army.mil, December 19, 2020. https://www.army.mil/article/241952/soldier_builds_unbreakable_bond_with_military_working_dog

THE HORSE IN WAR

The German military was divided into three branches: the army, the air force, and the navy. The Waffen-SS has been considered and regarded as an unofficial fourth branch. Throughout the war, division and armies were rearranged and shuffled. Basic organization of the army, *Heer*, grouped regiments into divisions, which would be combined to form a corps. Armies consisting of two or more divisions would group together to form an ‘army’ which in turn would be grouped into an ‘army group.’⁸⁶ Apart from troops, there were several headquarters established in 1939, as well as the General Staff. Troops and support staff finished the organizational logistics.⁸⁷ While the air force theoretically would be mostly in the air, the Luftwaffe deployed roughly 200,000 men as infantry, and thus retained ground support.⁸⁸ All of this cumulates into a large number of horses being used, both by cavalry but also by infantry, mountain divisions, division headquarters, engineer battalions, and the supply chain.

Deploying in the war, the German army was divided into waves, with progressively fewer mobile forces. In this way, the first wave served the propaganda purposes of the army and supported the image of a blitzkrieg while the latter divisions were far less mobile.⁸⁹ Indeed, especially by the end of the war, many divisions were crafted to be more than they were, with “descriptive names” masking the “pathetic equipment and weapons” that were sorry excuses at best for combat units.⁹⁰ The infamous panzer units would have been in the first wave, and interestingly enough, the creation of these concentrated motorized forces was influenced by the

⁸⁶ Müller, p60-61

⁸⁷ Ibid, p61

⁸⁸ Ibid, p67

⁸⁹ Ibid, p44

⁹⁰ Ibid, p46

reliance upon horses. Consider a few panzers and motorized units spread throughout the army intermingled with horse-drawn support, or a smaller but fully motorized force. In this sense, the motorized components were more effective when grouped together.⁹¹

The German Army, by official accounts, used around 2.75 million horses during World War II.⁹² Accounts vary and again, these numbers are based on official records. Unofficially, their rosters were comprised of Russian *panje* horses and horses requisitioned from fields and towns. In reality, the number of horses used most likely was much larger than the official registers. On average, the German Army employed approximately 1.1 million horses at any given time during the war period.⁹³ The Germans utilized horses (both of the draft and riding variety), mules, and donkeys for their transportation and military needs. Horses were a primary means of transport as the German Army was never fully motorized. In 1943, of the 322 divisions, composed of German Army and SS, only 52 divisions were motorized. By 1944, only 42 of the 264 existing combat divisions were motorized.⁹⁴

While infantry marched on foot, the supply chain was almost entirely horse-drawn, carrying supplies and weapons behind rows of troops. Each German infantry division had approximately 5,300 horses, 1,100 horse-drawn vehicles, 950 motor vehicles, and 430 motorcycles. As the war progressed, supply difficulties and vehicle upkeep grew difficult – the number was reduced to 400 motorcycles and 400 vehicles. Consequentially, the number of horses per division increased to 6,300. Divisions in 1944 had around 4,600 horses, 1,400 horse-drawn vehicles, 600 motor vehicles, and 150 motorcycles.⁹⁵

⁹¹ DiNardo, p15

⁹² Dunn, Walter S. *The Soviet Economy and the Red Army, 1930-1945*. (Westport, CT: Praeger, 1995.) p 225

⁹³ “German horse cavalry and transport.” *Intelligence Bulletin*, United States War Department, Military Intelligence Service. (March 1946. <https://archive.org/details/194603IntelligenceBulletin/page/n57/mode/2up?q=horse>) p 54

⁹⁴ Ibid

⁹⁵ Johnson, p 9

Horses can be more adapt than vehicles when it comes to certain terrain, such as mountains or thin paths. This is one of the reasons the horse retained significance within the army. Where mud or water can stop cars or trucks, horses can plow on, swim on, march on and continue the way.

Suitability of Breeds

Horses can be separated into three relatively distinct groups: cold-blooded, hot-blooded, and warm-blooded. These groups do not refer to the temperature of the horses' blood, but rather the temperament of the horse and the relative purpose of its breeding. Hot blooded horses are very athletic, spirited, and energetic. The best example would be the Thoroughbred – a horse bred for racing and sport, known for its sensitivity, hot temper, and delicate legs. The cold bloods are the draft horses – calm, large animals ideal for pulling carriages and carts such as the Budweiser Clydesdales. The warmbloods are a mix of hot and cold; they are typically heavier than the hot bloods while still being more athletic than the cold bloods. Their more temperate nature makes them ideal riding and show horses. Many popular breeds still originate from Germany and former East Prussia: the Hanoverian, the Trakehner, the Oldenburg, and the Holsteiner, among others, named for the specific regions in which they were bred or originated from.⁹⁶

Cavalry horses in the German army looked and were built different than their modern descendants. Horses were smaller with larger bone mass; today, the German warmbloods are big and lean, making them ideal athletes. In fact, it was determined that smaller horses were ideally suited for war, although broad ribs and strong bones were preferred.⁹⁷

⁹⁶ Garson, p 8

⁹⁷ Johnson, p12

The Hanoverian and the closely related Oldenburg are bred in the region of Hanover. These horses developed a positive reputation in the 17th century, being used by the Swedish and English armies, as well as receiving high praise from the Spanish Netherlands. Concentrated breeding efforts were spurred by King George II of Great Britain, as well as the formation of the Kingdom of Hanover, following the Congress of Vienna in 1815. The horse-breeding economy was actually strengthened during the depression of 1923-1924, as horses were viewed as investments which retained value over time. Compared to the Trakehner, the Hanoverian of World War II had a heavier head, overall good temperament, and excelled in jumping.

The East Prussian Central State Stud at Trakehnen was founded between the years 1726 and 1732 by the warrior king, Frederick William I. This wet-moorland-turned-pastureland produced the Trakehner breed, which would eventually be the preferred mount of the Wehrmacht.

The Russian Panje horse, which was smaller than the horses the Germans were used to, proved to be hardy and a much-needed asset in the Eastern campaigns. This small horse could withstand the harsh and cold environment, often with little cover. In the winter, the Germans acquired Russian sleds, which the small panje horses could easily pull over the ice and snow.

While the American army relied more on mules than the Germans, the half-donkey half-horse hybrid proved a sturdy and reliable animal. Mules fell sick less often, required less food than their equine counterparts, and did not react as poorly to loud noises.⁹⁸ Mules and pack horses were mainly used by the German mountain divisions.⁹⁹

Once the horse was acquired under the German Army, they could be separated into draft horses or riding horses, otherwise referred to as mounts. Riding horses were partitioned amongst

⁹⁸ Garson, p90

⁹⁹ DiNardo, p14

officers, cavalry, infantry-mounted vehicles, and other branches. Light draft horses were classified as pole horses, middle or leading. Heavy draft horses were used for artillery or other branches. And yet still there were the extra-heavy draft horses used for the heavy artillery.¹⁰⁰

It should be noted that similar care went into selecting riders for these horses. For the cavalry, riders must have been fit, light, “mentally alert” and “well-coordinated.”¹⁰¹ For handling the horses within the infantry, strong, but kind men were used, such as drivers with good temperaments and knowledge of horses. Horses for missions were chosen based on the assignment, and men paired the same way.¹⁰² It is not enough to know how to ride, but it is important to know how to work with horses, read them, and understand them for true success and partnership.

Horse Care

Horses are “delicate creature[s]”¹⁰³ and require intensive and extensive care to maintain them in working condition. In the context of war, this required adequate feed, water, shelter, rest, and grooming. Fodder, throughout the war, was not always readily available on the front lines and required extensive space in the supply trains. Horses, as large and menacing as they may be, are rather susceptible to many forms of diseases, and like humans, can fall victim to extreme heat or cold, dampness or dryness. There are plants which are poisonous, insects that bite, and too much stress may cause a horse to colic, an incident in which the intestines get jumbled and cause the horse immense discomfort and even death. A misstep can wrench a forelock and tear a tendon and a stone bruise will render a horse lame to walk. Of course, when properly taken care of,

¹⁰⁰ Ibid

¹⁰¹ Johnson, p26

¹⁰² Ibid

¹⁰³ DiNardo and Bay, p129

horses are quite impressive and can travel many miles, conquer obstacles, and can brave the toughest conditions. At the end of the day, it can be a delicate balance between peak performance and respite for these four-legged animals.

The horse, while adapt at conquering terrain inaccessible by wheeled vehicles, faced logistical and efficiency shortcomings compared to trucks or even infantry on foot. For matters of care, horses needed to be fed, watered, and groomed every day. Grooming was essential to lift dirt and mud from the coat, and to prevent sores, either from the collar and harness of transport horses, or from the saddle and blanket on cavalry mounts.¹⁰⁴ Depending on conditions, a horse may drink anywhere from 20 to 60 liters of water a day, or 5 to 15 gallons.¹⁰⁵ Size and workload also dictated feed, with grain rations ranging anywhere from eight to twelve pounds, and hay at fourteen to eighteen pounds a day. Grazing on grass is typically only sufficient for a horse with no work, but in order for grass to be sufficient for a working horse, the animal would have to graze for most of the day. Providing fodder and grain for the horses took up a large part of the supply chain, with the most efficient method being bringing up fodder from the rear of the unit, as to avoid sending troops to forage.¹⁰⁶ Task forces were indeed assembled with the sole purpose of securing food for the horses. Of course, this extended to supply issues with other gear, such as blankets, for which men would have to be spared.¹⁰⁷

Horsemen know that caring for horses takes time, but time can be precious in war. Horses required ample amounts of rest as to not burn out and perform their best. For example, a horse needed to rest once a week, as working for even ten days without rest would result in strain and

¹⁰⁴ Dunn, p 226

¹⁰⁵ Hayes, M. Horace. *Veterinary Notes for Horse Owners*, 18th edition. (Vintage/Ebury, 2002.) p 689

¹⁰⁶ Dunn, p229

¹⁰⁷ Yerger, Mark C. *Riding East: The SS Cavalry Brigade in Poland and Russia 1939-1942*. (Schiffer Military History, 2004.) p 47

fatigue. Of course, a horse could be in light work and could work for up to three weeks without rest, but as conditions and workload increased, a horse would need more rest to be able to continue. Recovery from work strain could take several days. After intense combat, a horse would also need a rest period to regain its strength. Many times, the frequency of operations and the state of the cavalry unit dictated the rest periods for the horses. Acclimating new mounts to the 'herd' or even pairing new horses to pull wagons required time, anywhere from days to weeks. Decent rest required bedding and stables; the Red Army adapted a system of advance scouts to secure suitable buildings, as well as maintaining stables at convenient positions along supply routes and railheads.¹⁰⁸

Artillery team horses required maintenance in the form of hitching and unhitching at the start and end of each day. Harnessing a two-horse team could take up to half an hour and required two men. A heavy piece of artillery pulled by six horses could take over an hour to hitch, if attended to by six or more men.¹⁰⁹ At the end of the day, the horses would have to be unhitched, and cared for appropriately with feed and grooming. The harnesses would have to be stored as to not be tangled, and presumably also cleaned, as sweat and dirt are detrimental to leather. A driver would likely spend over an hour caring for the horses, as opposed to a truck driver.¹¹⁰ Comparatively, one can assume a fair amount of time and care went into tacking up a riding mount.

Caring for the horses in the German Army also required extensive veterinary personnel and resources. Command and directorate fell to General Curt Schulze who, from 1938 to 1945, served as Veterinarian Inspector General of the Army Veterinary Service. At any given point,

¹⁰⁸ Dunn, p226-227

¹⁰⁹ Ibid, page 226

¹¹⁰ Ibid, p226

Schulze oversaw 1.25million horses, along with 162,000 soldiers and blacksmiths.¹¹¹ Each cavalry division was assigned two vet companies composed of two collection stations. First aid was administered at these stations, while injured and captured horses were sent to vet hospitals. Impressively, the return to active-duty rate was 75%, meaning 3 out of 4 horses returned to work after being treated.¹¹² The most common illness seen by the German veterinarians was mange, a contagious skin disease. Other diseases seen were equine pneumonia, frostbite, and glanders.¹¹³

The Battle Horse and the Supply Chain

A ‘Battle Horse’ refers to the fourth horse of a knight’s string. The battle horse was last behind the charger, the palfrey, and the courser. This animal was a work animal, destined to never be ridden by the knight, but be burdened down with the weight of extra equipment and baggage.¹¹⁴ While cavalry and battle horses no longer donned shields and chainmail, the crucial role of a baggage horse or pack animal was still prevalent into the twentieth century.

The German Army utilized one-, two-, four-, and six- horse teams, depending on the weight and manner of their haul. A majority of the artillery used was horse-drawn. Wagons unloaded could weigh well over 2,000 pounds and thus required heavy horses to pull.¹¹⁵ The French army can be pointed to as the beginning of soldiers riding with their horses, tacked up as a sort of ‘out-rider’ as the army began to use more artillery; German soldiers would indeed ride

¹¹¹ Dorondo, p101

¹¹² Ibid., p 102. The German Army had a total of 236 vet companies. 48 vet hospitals, and 68 horse transport units. Each army had two hospitals, one for wounded animals and the other for infectious diseases. The capacity of these hospitals was often exceeded. In addition, the German Army utilized motorized vet clinics, motorized test stations, and a motorized vet park.

¹¹³ DiNardo, p11

¹¹⁴ Vernon, Arthur. *The History and Romance of the Horse. Illustrated by Ernest John Donnelly.* P 167

¹¹⁵ Garson, p 11

and steer the draft horses from their backs. For a riding draft horse, a *Sielengeschirr* 25 breast harness was used in addition to the saddle.¹¹⁶

Artillery

While the Treaty of Versailles initially limited the artillery allowed for the German Army, the 105mm and 150mm guns became the standard guns during the war. Under the Treaty, Germany was originally limited to 77mm and leFH16s, or the light field howitzers. The light field howitzers were an adaptation of a 1909 howitzer, with a longer barrel and changed shield. The howitzer had two wheels and would be hitched to a horse team to pull. The German Army used both horse-drawn and horse artillery. The difference being that with horse artillery, every gunner or member of the crew was mounted.¹¹⁷ For the purposes of this thesis, the terms will be used interchangeably.

The leFH16 was introduced in 1909 and had a barrel length of 1.58 meters. It sat on two wheels in a box-trail carriage.¹¹⁸ There were actually two models of the leFH16, one by Krupp and the other by Rheinmetall. Rheinmetall's gun had a barrel length of 2.29 meters. This leFH16 continued to be used throughout World War II, and was considered a success across all aspects, from mobility to range.¹¹⁹ The leFH16 nA was an adaption of the former, without a handle and with added stiffeners to strengthen the gun. Additional modifications included larger springs and an ice spade.¹²⁰

¹¹⁶ See Appendix: Image 2

¹¹⁷ See Appendix: Image 22

¹¹⁸ Engelmann, Joachim. *German Light Field Artillery, 1935-1945*. (Atglen, PA: Schiffler Publishing Ltd., 1995) p 4

¹¹⁹ Ibid, p5

¹²⁰ Ibid, p6

The leFH 18 was introduced in 1937, although the German Army had a total of 980 of the older models.¹²¹ The leFH 18 was an improvement on the 16, with a longer barrel of 294.1 cm and a range of just over 10km. The carriage was a split trail with folding spades, and the gun even had shock absorbers. The 75mm light infantry gun was designed specifically to be horse-drawn. The howitzer, or le.I.G.18, was pulled by a six-horse team (or in some cases a motorized prime mover). Dependent on a unit's Table of Equipment or TOE, there would be four or six per cavalry unit. The wagons upon which these guns rode had large, spoked wheels, earning the nickname "gypsy artillery." A cavalry regiment would also have three 37mm anti-tank guns in the headquarters troop.¹²² Overall, the 18 was easier to tow, had better mobility, and production was simpler.¹²³

For other artillery, the Germans possessed many different models. The sMG 08 or the MG 08 was the principle heavy machine gun used by the German army into the 1930s. Used in addition to the cavalry's individual weapons, this gun, adopted by the German army in 1908, supplied devastating firepower during World War I. However, the MG 08 was heavy, weighing forty pounds initially without ammunition or coolant water. The MG 08/15 and MG 08/18 were lighter variations both introduced in the 1910s.¹²⁴ These guns were pulled by a six-horse team attached to the wagon.

The 1920s saw the German army adopting the Dreyse model MG13 gun, which proved considerably lighter than the MG 08s and also offered a higher rate of fire. In 1936 the MG34¹²⁵ replaced the MG 08s and 13s. Although the MG34 eventually saw itself replaced by the MG42

¹²¹ Ibid, p7

¹²² Ibid, p95

¹²³ Ibid, p13

¹²⁴ Dorondo, p93

¹²⁵ Appendix: Image 13

or ‘Hitler’s buzz-saw’.¹²⁶ The 34 and 42 were improvements upon the older gun models. The 34 was air-cooled and could shoot 300 to 400 rounds a minute. The MG 42 improved upon this, with 800 to 900 rounds a minute. The MG 34 was used by the cavalry more than the 42s, which were produced to meet the demands of the army after 1943.¹²⁷ The 42s were carried, not on wagons, but in scabbards on the gunner’s saddle.

The 150mm guns were also pulled by a team of six horses, as it weighed around four tons.¹²⁸ In some cases, the load proved to be too heavy for even the heaviest of draft animals.¹²⁹

A machine gun crew consisted of eight men and ten horses. There was the gun commander and his horse holder, four gunners, and two pack horse leaders who handled two horses apiece.¹³⁰ Upon delivering the artillery, the handlers would lead the horses to safety while the crew began to work.¹³¹

Supply Chain

Horses provided the primary mode of transport for the supply train of the German Army. They pulled food, supplies, ammunition, field kitchens and bakeries, medical units, and more. Similar to artillery, teams of horses varied depending on the load. For example, a 0.75-ton HF.12 kitchen required a two-horse team.¹³² On the flip side, the ‘horse killer’ wagon required six horses to pull the iron Hf.2 transport wagon.¹³³ Infantry divisions were restricted to remaining close to their horses and not advancing too quickly as to separate from them. In addition,

¹²⁶ Garson, p 98

¹²⁷ Ibid, p 94

¹²⁸ Ibid, p12

¹²⁹ Johnson, p 23

¹³⁰ Michaelis, p17

¹³¹ Appendix: Image 20

¹³² Garson, p 83

¹³³ Ibid, p101

motorized and Panzer units could not travel extensively or quickly, and thus be separated from the infantry.

To comprehend the vast reliance on horses by the German Army,¹³⁴ one must look at the Polish campaign, when the Germans required the Poles to supply roughly 4,000 horses per week in April 1940. Also, during the campaign, the 231st Division, while in Poland and not required to be in action, was immobilized due to equine pneumonia sweeping through the mounts.¹³⁵ Transport columns would be stopped completely when horses came down with equine tuberculosis or any other contagious, debilitating disease. Perhaps the saving grace in Poland as compared to the Soviet Union was that of the weather – good fair weather is better for sick horses than bitter cold.¹³⁶

During the Russian invasion, the Germans experienced the immense shortcomings of an extensive, but overstrained supply chain. The horses were not accustomed to hot Russian summers or the brutal winters. Shipping fodder to the front only increased the volume in the supply chains, and often resulted in shortages. Advancement was delayed in the summer, when the horses required long and frequent water breaks. Shortages even affected the availability of feedbags, and while the introduction of troughs seemed an easier and simple solution, shared feeding spaces only increased the chances for spreading diseases.¹³⁷

Russia revealed even more disadvantages to using horseflesh when the winter took up to 1,000 horses a day. The army struggled with disease, and the veterinary hospitals were 4-6 times

¹³⁴ Appendix: Image 4

¹³⁵ DiNardo, p27

¹³⁶ DiNardo and Bay, p131

¹³⁷ Ibid, p132

at capacity. The infantry divisions needed up to over 6,000 horses to move and with little in reserve, were at the mercy of the environment.¹³⁸

A total of 180,000 horses were lost in the winter months of 1941. This includes horses which were sold due to being too weak to work, and horses killed for food.¹³⁹ To make up for this shortcoming, and the losses incurred at Stalingrad, the Germans authorized that horses could be pulled to the east from Western divisions. Once artillery was placed in permanent locations, the need for horses to pull them dissipated. In addition, infantry divisional requirements were reduced, to 3,300 horses on average.¹⁴⁰ The Germans failed to use and distribute horses efficiently. One can only look at the Luftwaffe field divisions and the SS cavalry divisions to understand. Arguably, the strength of the 8th SS Cavalry Division (Florian Grey) reflected more not on the necessity of the horse, but of the power of the SS. The Luftwaffe divisions were “of little combat value” but took horsepower away from other divisions, perhaps in more need of them.¹⁴¹

Further disaster was felt from the air, when potential aerial attacks could wipe horses completely out. Take the 275th infantry division as an example, which lost all of the horse-drawn transport and the vet company to Allied fighters in 1944. Up to 80,000 horses were lost in June of 1944, when Soviet motorized units overran the German infantry and panzer divisions.¹⁴² Apart from aerial attacks, horses, much like vehicles, presented a rather large obstacle on roads for oncoming infantry, horses, and vehicles to maneuver around.¹⁴³

¹³⁸ Ibid

¹³⁹ Ibid, p133

¹⁴⁰ Ibid

¹⁴¹ Ibid, p134

¹⁴² Ibid

¹⁴³ Appendix: Image 9

Across all fronts and operations, horses struggled to keep up with the demand and conditions of war, especially in the winter months in Russia. Horses were slaughtered and shot on the spot, although the meat went towards feeding hungry soldiers at times.¹⁴⁴

For practical reasons, such as supply trains following troops into various positions, horse-drawn made sense.¹⁴⁵ But there were many reasons in the end why horse-drawn supply trains were not as efficient as they could have been, if they were motorized. For example, rations for the horses took up valuable space in the supply train; four rations of oats and hay per animal could be divided amongst horses and vehicles.¹⁴⁶ With additional horses, further space for feed was needed.

The supply train of the German Army became excessively long, as the number of horses to meet the volume of which trucks could supply, was substantial. Comparing infantry divisions in East Prussia to divisions in Germany proper at the beginning of the war, East Prussian divisions had an additional 2,000 horses and 275 less trucks in their TOE.¹⁴⁷ Assuming that their supply trains moved roughly the same amount, the East Prussians had more horses spread out over longer distances. Length of the trains would only increase upon acquisition of local horses and local carts. Interestingly, but unsurprisingly, these long trains exposed shortages even more evidently, and soldiers would hoard items as a result.¹⁴⁸ Shortages were not always a result of the supply train, however. In one instance, the Fourth Army quartermaster connected the disposal of bailing wire with the inability to bale hay for the horses. Of course, this was once such observation alongside several others of carelessness or inattention to the care of the horses.¹⁴⁹

¹⁴⁴ Garson, p101

¹⁴⁵ Johnson, p23

¹⁴⁶ Johnson, p40

¹⁴⁷ U.S. Army Military History Institute publication MS #P-090, p53

¹⁴⁸ Ibid, p54

¹⁴⁹ DiNardo and Bay, p27

A final note on the supply train as it pertained to the care of horses; not only did feed being shipped to the front take up space in the railcars and wagons, but so did shipping horses. There was also the case of shipping goods back to Germany which took up space. This would include shipping horses back which were seeking medical care, as well as shipping manure back to be used as fertilizer.¹⁵⁰

¹⁵⁰ Ibi

THE MOUNTED CAVALRY OF WORLD WAR II

Organization

The Treaty of Versailles dictated the German Army have roughly 16,400 troops mounted on horseback¹⁵¹ Until 1928, a cavalry regiment consisted of a regimental headquarters with a bugle corps, a signals platoon, four field troops, one replacement or training troop, and one heavy machine gun platoon (split into two half-platoons) with four s.MG.08s. A field troop consisted of 174 men and 200 horses while a training troop had 114 men and 170 horses. There were additional troops assigned to seven regiments, which were to serve under the infantry for reconnaissance. 154 men and 180 horses made up these divisional troops. Prior to military sovereignty, the Reichswehr had 97 cavalry troops.¹⁵²

In 1934, the 11th, 12th, and 16th Horse Regiments were motorized into rifle regiments or motorcycle battalions. Other regiments saw the loss of entire troops, as men formed new tank, anti-tank, and armored reconnaissance units. The 4th and 7th became panzer regiments.¹⁵³ This left 13 cavalry regiments for the Wehrmacht at the start of the war. By 1939 the army had grown from the original 10 divisions laid out by Versailles to an impressive 55 divisions. Fourteen of these division were fully motorized. 51 additional divisions were formed in the days and weeks following.¹⁵⁴

Each infantry division possessed around 4,700 horses, with each infantry regiment holding roughly 640 horses. Each division and subsequent regiment also included motorcycles

¹⁵¹ Garson, p 9

¹⁵² Richter, p10

¹⁵³ Richter, p12

¹⁵⁴ Richter, p9

and motor vehicles. A standard regiment would have 3,000 men, 55 motor vehicles, and 45 motorcycles. The field army by 1939 consisted of roughly 514,000 horses.¹⁵⁵ The 1st Cavalry Brigade had a strength of 4,200 horses for 6,200 men, and specifically consisted of two regiments, a mixed regiment, an artillery battalion, a mechanized reconnaissance battalion, and a bicycle battalion.¹⁵⁶

A horse regiment, which would be assigned under an army corps, had a strength of just over 1,000 horses, composed of riding horses, remounts, and draft horses.¹⁵⁷ After 1935, an infantry horse platoon was assigned to each infantry regiment.¹⁵⁸

After 1939, the cavalry was essentially dissolved apart from the one standing division and divided amongst mounted reconnaissance sections and convoy escorts.¹⁵⁹ Within this role included the signals divisions, part of whose task included laying telephone lines, an activity conducted via horseback.¹⁶⁰

The Waffen-SS

The SS was originally a small troop of extremely loyal albeit arrogant soldiers, with disdain for the army and an unquestionable devotion to the Fuhrer.¹⁶¹ Led by Heinrich Himmler, the SS gained political and economic power, in addition to their military role. Initially, the SS's reach included the Police, Gestapo, and concentration camps. The SS grew in size and power, recruiting men from all backgrounds in an effort to create a 'classless' structure in favor of an

¹⁵⁵ Johnson, page 9

¹⁵⁶ "German horse cavalry and transport", p58

¹⁵⁷ Richter, p15-16

¹⁵⁸ Ibid, p17

¹⁵⁹ Müller, p51-52

¹⁶⁰ Appendix: Image 12

¹⁶¹ Müller, p37-38

overall elite force of men.¹⁶² Over the course of the war, the composition of the SS did indeed change, which created tension within the ranks. Himmler had to resort to acquiring men wherever he could, even if that meant acquiring “‘non-Germanic’ volunteers as cannon fodder.”¹⁶³ This ‘Fourth Arm’ of the Wehrmacht, with its cruel men dressed in black, ended the war with involuntary recruits and a loss of its elite status which was so highly prized.¹⁶⁴ The SS was in fact deemed a criminal organization at the Nuremberg trials, reflecting the radicalized and murderous attitudes of the ‘political soldiers’ it harbored.¹⁶⁵

In total, the Waffen-SS, which was brought up as Himmler’s army, was comprised of 38 divisions (armored, infantry, mountain, cavalry), armored Police units, and the *SS-Totenkopfverbände* or Death’s Head units. The SS considered cavalry “front-line troops” and appreciated the unique mobility advantages of horses.¹⁶⁶ The SS *-Totenkopf Reiterstandarte*, the Deaths-Head Horse Regiment, was created specifically for partisan and security operations in Poland. Hermann Fegelein took command of this unit in November of 1939.¹⁶⁷

Albert Schwenn’s account of his time as an SS cavalryman reflects quite a bit of bias in his unreliability and his deliberate omission of key events or experiences.¹⁶⁸ In 1943, Schwenn was assigned to the 1st SS Cavalry Regiment and traveled to Yarzevo with the 5th Troop. He notes that early that year there was a shortage of NCOs. In the 2nd platoon, Schwenn and the machine gun crews would practice training, which included lying the horses down and target

¹⁶² Garson, p70

¹⁶³ Müller, p40

¹⁶⁴ Ibid

¹⁶⁵ Ibid, p41

¹⁶⁶ Yerger, p7

¹⁶⁷ Fowler, Jeffrey T., and Mike Chappell. *Axis Cavalry in World War II*. (Botley, Oxford: Osprey Publishing Ltd., 2001.) p 20

¹⁶⁸ Michaelis, p79. Albert Schwenn was a member of the SS cavalry. The author attributes this omission – specifically surrounding the Pripyat Marshes – to both Schwenn choosing to forget the experiences but also to the potentially damning nature. Indeed, Schwenn did spend 11 years as a POW, a time that might have been lengthened if the true extent of his role in the marshes had come to light.

practice. Schwenn offers an interesting observation when describing the gun crews; when dismounted, the gunners attended to the artillery, but someone had to hold the horses. While there were designated horse-holders in a machine gun crew, one must consider across the infantry and cavalry the waste of manpower designated to simply hold the horses during combat or breaks.

Even the Waffen-SS Cavalry was not exempt from restructuring and throughout the course of the war saw reorganizations and shuffling of men and horses. Notable horse units within the Waffen-SS included the 8th SS Cavalry Division 'Florian Geyer,' the 22nd SS Volunteer Cavalry Division 'Maria Theresia,' and the 37th SS Volunteer Cavalry Division 'Lützow.'¹⁶⁹

Equipment and Uniform

Both horse and rider of the cavalry were issued equipment and a uniform.¹⁷⁰ Both parties saw their equipment change, both in the interwar years and during the course of the war. While many soldiers took liberties in their uniform, with corrections or adjustments, what follows begins to describe the kit and outfit.

Horse

A working horse is typically outfitted with four steel horseshoes on trimmed feet. Legs can be bare, although modern sport-horses tend to have their legs bandaged or booted to avoid

¹⁶⁹ Fowler, p20-22

¹⁷⁰ Appendix: Image 3

injury. Basic riding equipment includes a saddle, a pad to be put between saddle and the back, a girth, and a bridle with bit and reins.¹⁷¹

The leather saddle used by the German Army was known as the M25 or Army Saddle 25. The saddle came in five sizes, pertaining to the shape and size of the horse: the ribcage and the withers, specifically.¹⁷² The practice of different size ‘trees’ (the width of the channel beneath the seat) is both for the comfort of the horse and the rider. Tree sizing ensured the saddle was neither too wide nor too narrow, which would cause discomfort and sores. The saddle itself was fitted with hooks, straps, and reinforced leather. Each saddle would also have stirrup leathers, and steel stirrups which were polished or painted black.¹⁷³ A girth would be secured under the belly to keep the saddle in place.

In addition to the saddle, various saddle packs were used. Most well-known was the M34 saddle bags which were a double set of packs to be placed adjacent to the saddle. One bag held supplies for the horse, while the other held the rider’s gear. The left bag could contain extra horseshoes and nails, a blanket strap, mess kit, brushes, a lead line, and a cleat tool. The right held personal belongings which might have included a tent rope, sewing kit, soap, razors, towel, underwear, swim trunks, shoes, rations, and more.¹⁷⁴ Apart from saddle bags, a kit included a forage bag and a *zeltbahn*,¹⁷⁵ a multipurpose bag used for carrying a blanket or grain. This was attached behind the saddle and rider.¹⁷⁶ Near the end of the war, and used by the SS, a rear saddlebag was introduced, with a front weight to balance the saddle.

¹⁷¹ Appendix: Image 11

¹⁷² Johnson, page 84

¹⁷³ Ibid

¹⁷⁴ Ibid, p94-95

¹⁷⁵ Appendix: Image 7

¹⁷⁶ Ibid, p149

A standard bridle was used for the horse; This included a set or sets of leather reins attached to the metal bit.¹⁷⁷ A noseband, crown piece, and throatlatch secured the bridle to the head. In some instances, a martingale (a leather loop around the neck with a perpendicular strap attached to the girth and noseband with the purpose of keeping the head from being thrown upright) was also worn. Halters were sometimes worn in addition to the bridle.¹⁷⁸

Rider

Cavalrymen had a similar uniform to the infantry, but with a few key differences to accommodate to life in the saddle. The grey standard uniform was paired with riding boots that went up the knee with spurs buckled around the ankle of the boot. NCOs and enlisted men received a greatcoat of gray fabric, dubbed the “horse-blanket.”¹⁷⁹ Cavalrymen wore full-seat breeches – riding pants with a leather “seat” from below the knees and up across the rear. The cavalrymen had the same pocket-less tunic issued in 1936 with distinct Brandenburg cuffs and cavalry-gold piping. Prior to the 1930s, the standard helmet, the “cavalry helmet,” had ear cutouts in the steel and possessed a wavy appearance from the side. This helmet was phased out with the standard M1935 helmet.¹⁸⁰ The rider had no field pack as his infantry counterparts did. Instead, the “trooper pack” which doubled as a saddlebag, could be worn on the back and carried his tent. True cavalrymen also wore gold, whereas the infantry horsemen wore white, as a service color.¹⁸¹

¹⁷⁷ Ibid, p108. The German Army used a variety of bits, the most common included a single-jointed “watering” bit used for light activity, an S bit, and a straight bar bit. A straight bar or solid metal rod is considered harsher, and the slight curve in the bit is meant to press into the roof of the mouth. The S bit was so called for the curve of the metal which was situated outside of the mouth.

¹⁷⁸

¹⁷⁹ Richter, p 6

¹⁸⁰ Dorondo, p 92

¹⁸¹ Richter, p 6

For weaponry, the old Reichswehr horsemen were each assigned a Karabiner 98a, a bayonet, a saber, and a 3.2-meter steel lance.¹⁸² Later, the Karabiner 98b replaced the former rifle. The karabiner 98k eventually became the standard issue rifle for the Wehrmacht, which was a shortened version of the M1898 Mauser rifle. This rifle was specifically designed for mounted troops.¹⁸³ Officers of the cavalry carried Pistole 08s as their personal pistol and were outfitted with MP38 and eventually MP40s. The 08 was a 9mm semi-automatic known as the ‘Luger.’ This was later replaced by the P-38. The *Sturmgewehr* 44 also made an appearance.¹⁸⁴

Another rifle used was the Mauser 98k carbine. The *k* stood for *kurz*, meaning short. It was a 7.92mm bolt-action rifle with a five-round clip. The rifle was 1 meter long and weighed up to over 9 pounds. This was the Wehrmacht’s eventual standard issue rifle. For the cavalry, it was held in a scabbard on the left side of the trooper behind the leg and attached to the belt. Eventually, the cavalry transitioned to slinging the rifle across the back. After 1940, semiautomatics and machine-pistols were added to the arsenal.¹⁸⁵

In terms of steel, issued until 1941, the M1916 saber had a blade of thirty inches and rested behind the saddle when mounted.¹⁸⁶ Later, a bayonet of fifteen and one quarter inches attached to the frog of the saber was added.

The original weapons, rather unique to the cavalry and effectively used at high speeds, was the lance and sword. The ten-and-a-half-foot lance itself was issued to German cavalrymen up until 1927.¹⁸⁷ As firearm technology improved, and indeed cavalrymen began training and using rifles, the use of steel arguably was becoming just as obsolete as the cavalry. Linked to the

¹⁸² Ibid, p10-11

¹⁸³ Fowler, p 3

¹⁸⁴ Garson, p 98

¹⁸⁵ Dorondo, p 93

¹⁸⁶ Ibid, p 91. The saber was sheathed on the right side for enlisted troops and on the left side for officers. In addition, the hilt had a fist strap in the color denoting the regimental squadron.

¹⁸⁷ Ibid, p92

romanticism of the cavalry, and the terror induced from flashing steel combined with a charging animal, steel still had supporters, from prominent military leaders as General Patton, as well as the European patricians, such as Austrian count Gustav Wrangel. The *Cavalry Training Manual* of the British Army, published in 1907, held that the rifle could never replace the full project involving steel, horses, and the charge. One can argue that the sentiment expressed by many at the turn of the century was a matter of principle and tradition, rather than facts. It is interesting to note that as the sword and lance fell out of favor, rather due to lack of use and efficiency, the bayonet, another form of steel, saw increasing use and prominence on the battlefield. Of course, the bayonet was to be used in a more intimate setting than the lance, but the general concept of steel being used in war is a testament to the metal's longevity as a weapon.¹⁸⁸

Cavalry Training and the Remount Program

General Hans von Seeckt¹⁸⁹ had a continuing interest in the cavalry, and, having served on the Eastern Front in World War I, understood and appreciated the horse's contribution to the mobility of forces. Seeckt was responsible for reorganizing Germany's cavalry from the Treaty of Versailles, grouping two regiments into three brigades under each division. The number of divisions and regiments stayed the same, but Seeckt shuffled the organization, as well as adding horse-drawn guns and enlarging the machine gun section to a company. Seeckt added units not only to the cavalry divisions, but to the divisional headquarters as well, believing that

¹⁸⁸ Ibid, p42-43

¹⁸⁹ Ibid, p78. Seeckt was the chief of staff for the German army between 1919-1920. From 1920 to 1926 Seeckt served as operational commander in chief as head of the General Troop Office. Seeckt and his subordinates were responsible in determining the mounted force's role in the army post-Versailles.

improvements to the technical aspects of the cavalry would increase their power and strength on the battlefield and keep the cavalry as a relevant and potent force in the German army.¹⁹⁰

Mobility was the cavalry's strength that arguably kept mounted-troops relevant. While armored cars, tanks, bicycles, and motorcycles were certainly mobile, horses continued to prove their unique versatility as they could cover ground inaccessible to wheeled vehicles, and even were occasionally needed to rescue those vehicles broken down or stuck.¹⁹¹

The major difference which separated cavalrymen and mounted infantry was, essentially, horsemanship.¹⁹² While both could be trained in combat, rifles, artillery, and more, it was really only and truly a horseman who could ride and care for his mount the way he deserved.

As per the Treaty of Versailles, soldiers had a twelve-year enlistment commitment to serve. Prior to 1935, a cavalryman would receive around 3,000 hours of training in the saddle over the course of those twelve years, to ensure proper equitation and riding skills were developed. Large-scale river crossings were also to be conducted at least once per year. Troopers had the opportunity to be awarded the Horseman's Badge in gold, silver, or bronze, reflecting their riding skill and theoretical knowledge. Surprisingly, many members of the cavalry did not earn this badge, although *Rittmeisters* and *Hauptmanns* (captains) were expected to pass.¹⁹³

Although by the 1920s the idea of the charge as a means for a cavalry attack had all but lost its luster, formation riding was still an essential part of training, supplementing equitation. A

¹⁹⁰ Ibid, p82. Seeckt added the machine gun company and two horse-drawn guns to each cavalry regiment. The division then included an infantry battalion, a bicycle battalion of three companies and two anti-tank batteries each, as well as a machine gun battalion. Divisional artillery was brought up to regiment and a motorized flak battalion was added as well, to protect against aerial attack. Finishing out the additions, Seeckt included an armored car battalion, an observation aircraft squadron, a motorcycle platoon, a pioneer battalion, a signal battalion, a truck-transport battalion, a horse-drawn wagon battalion, a medical battalion, and a veterinary detail. These above units were added either to the cavalry division or the divisional headquarters.

¹⁹¹ Ibid, p86

¹⁹² Ibid, p78

¹⁹³ Ibid, 81

double column replaced the regimental column as the standard column. Along with the platoon column (an even narrower formation), these column formations limited the front of the column to as little as fifteen feet across. This reduced front aided the cavalry on the march and allowed mounted troops to tackle topographically difficult terrain as well as access otherwise restricted terrain.¹⁹⁴ In the case of forested paths, a narrower formation was essential to travel. Utilizing such paths, cavalry found themselves sheltered from aerial attack and enemy fire. The double column formation was continued into World War II.¹⁹⁵ Apart from formational riding, cavalry continued to ride in screening and reconnaissance detachments, which served to aid the infantry.

The army's major exercises of the mid-1920s included the cavalry with mock tanks, mobile artillery, and machine guns. In a sense, this was the field test, combining mobility with fire power as envisioned by General Seeckt. The result of these exercises, however, was the cavalry reinforcing their role as assisting the infantry. After 1933, the cavalry was cut down to squadron-size, assigned to infantry divisions, and to be delegate to the task of reconnaissance.¹⁹⁶

For the traditional German cavalryman, over 3,000 hours in the saddle comprised their training. After 1935, however, this number fell drastically as men would spend about an hour in the saddle each day.¹⁹⁷ This decrease in training was not unique to the cavalry; in order to keep up with replacing great numbers of casualties, training and enculturation were all shortened.¹⁹⁸ The remainder of their training turned to weaponry and combat. In regard to signal training and communication, the Wehrmacht used twenty-five different hand signals to communicate with one another while riding/in motion.¹⁹⁹

¹⁹⁴ See Appendix: Image 21

¹⁹⁵ Dorondo, p87

¹⁹⁶ Ibid, p88-90

¹⁹⁷ Garson, p9

¹⁹⁸ Müller, p92

¹⁹⁹ Garson, p36

Training involved group riding, taking jumps at a canter or gallop,²⁰⁰ riding through splits in the trees, and jumping narrow gates.²⁰¹ Riders would also be skilled in vaulting exercises,²⁰² fast mounting and dismounting, and firing while standing in the saddle. In regard to that particular feat, it was considered “unlikely to occur...[but] it demonstrate[s] the perfect obedience of the horse and the rider’s excellent training.”²⁰³ Horses were also trained to lay on the ground, to provide cover for their riders and cover for themselves.²⁰⁴ Additionally, extra precautions were taken to protect horses from enemy fire: protecting the soldiers extended to protecting their mounts as well.²⁰⁵

Hand in hand with horsemanship was being able to care for the animal. Riders and drivers were trained in basic needs, including medical. This was in conjunction with the veterinary and blacksmiths schools across the Reich which supplied men for those purposes.

Equestrian Games

Before 1952, equestrian events and competition were restricted for military males, as the events were an avenue to showcase cavalry training.²⁰⁶ The International Military Horse Show was one such venue in which European cavalymen would come together to compete. In the jumping event, high jumps would be taken at speed, and other obstacles, such as a raised bank,

²⁰⁰ Appendix: Image 1

²⁰¹ Training of German military officers--outtakes. (Fox Movietone News Story 23-505.) Fox Movietone News Collection. Moving Image Research Collections. University of South Carolina.

²⁰² Appendix: Image 10

²⁰³ Garson, p57

²⁰⁴ Ibid, p50

²⁰⁵ Appendix: Image 18

²⁰⁶ “Equestrian / Eventing Equipment and History - Olympic Sport History,” International Olympic Committee, November 9, 2020, <https://www.olympic.org/equestrian/-/eventing-equipment-and-history>.

would be present.²⁰⁷ The Olympic games was another; the 1936 games were held in Berlin, Germany, and was absolutely dominated by the Germans who took home all three gold medals.

Horse racing was another notable sport undertaken by the Wehrmacht. Each battalion or regiment would have their own silk pattern, resulting in 38 different racing colors. Fox hunting was also popular, as it was adjunct to battlefield skills.²⁰⁸

The Remount System

Supplying horses for the army required a large number of animals before combat, and then maintaining a constant stream of replacements. In preparing for war and her expansion, the German Army relied on foreign purchases of horses, in addition to established remount programs. These purchases would either supply cavalry horses or support horses. In the 1930s, Germany bought many of the British Army's horses when the units motorized. Another large grouping of animals came from Hungary.²⁰⁹

To keep up with the demand for horses lost, either due to age during peacetime or disease and death in war, the Germans had a well-established remount program. The German Army relied on local horses and commercially employed horses to serve as remounts during the war. For an expedited training process but also in the name of efficiency, horses within the nation must have been adequate and suitable cavalry mounts. This thinking is part of the reason why the government and state influenced horse breeding within Germany to satisfy the army in war and in peacetime.

²⁰⁷ International Military Horse Show--outtakes. (Fox Movietone News Story 21-882.) Fox Movietone News Collection. Moving Image Research Collections. University of South Carolina

²⁰⁸ Garson, p56

²⁰⁹ DiNardo, p12

Before World War II, Germany purchased horses at remount markets. The Inspectorate of Riding and Driving was responsible for authorizing these purchases, as well as observing the overall management of army horses. Under the pre-war system, horses were purchased at the age of three and spent a year conditioning. At age four, specific intensive training began.²¹⁰ Training lasted until the horse was six.²¹¹ It is important to note that horses are slow developers and do not fully mature until the age of six. Not all remounts were used or bought. This was in part due to farmers or citizens bringing either older horses or unfit horses to market, such as stallions.²¹²

To secure horses during the war, the Germans employed three methods: requisitioning, purchasing, and hiring. Purchasing involved horses being brought to a town's headquarters in specific numbers and were paid for at established prices. Farmers, along with their horses and wagons, were employed by the German Army which enabled the use of the horse but prevented a hungry farmer from joining the partisans in opposition.²¹³

In addition to having state sponsored studs, the Germans also required every animal to be listed in a registry, thus considering commercial horses for military use if the need arose. Germany employed a pre-war program in which every horse in the nation were registered by the Inspectorate of Conscription and Recruiting. This system proved vital in securing suitable horses for the Army's need.

In occupied territories, Germany employed similar measures to procure horses in that all the horses in a region were not taken as to preserve economic life and agricultural production. When economies were less developed, more horses were taken, as densely populated regions would have felt the loss in animal life substantially more. The reasons for this were clear in the

²¹⁰ Johnson, p65

²¹¹ Garson, p 9

²¹² DiNardo, p 17

²¹³ Johnson, p66

Russian campaign, where the loss of the local panje horses would perhaps spur the local population to join the partisan groups the Germans were so desperate to rid themselves of. Also, requisitioned horses could carry diseases which would be spread amongst the combat ready horses, without adequate quarantine and integration. Headquarters was responsible for horse requirements, as they were able to the numbers at more of an executive level. Only in desperate times would individual units seek out horses in unconventional manners.²¹⁴

Russia is a prime example of requisitioning gone wrong, as mistakes were made when selecting horses to fill open mount positions. Mistakes would include horses that were too large a horse, or too old, too immature, or even a valuable stud. Pregnant mares could not work, and neither could horses overcome with overexertion.²¹⁵

²¹⁴ Ibid, p66

²¹⁵ Johnson, p65

SELECT CAMPAIGNS OF WORLD WAR II

This section deals with a few select campaigns from World War II, primarily focusing on operations in which cavalry had a role, or the use of the horse proved significant. Of course, an argument could be made that the role of the horse was critical in all major infantry²¹⁶ operations. However, this selection is not all inclusive and serves to highlight major operations or events.

Polish Campaign, 1939-1941

The Second World War broke out on the morning of September 1, 1939 when Adolf Hitler's Wehrmacht invaded Poland. Two army groups pushed on into Poland, Army Group North and Army Group South.²¹⁷

The cavalry was involved from the start: The 1st Cavalry Brigade protected the eastern flank of the 3rd Army as they advanced into Poland. Separately, the 1st Mounted Regiment was positioned in the Fürstenwalde forest, with orders to attack Mysienice. The 2nd Mounted Regiment was to follow, positioned to the east. By the afternoon, the Polish 18th Uhlan Regiment of the Pomorska cavalry Brigade was engaged in the first cavalry attack of World War II against the Germans. The cavalry attack was ordered to enable Polish infantry to retreat. By early evening, the Polish cavalry had regrouped and began the first cavalry charge of World War II from the woods near Krojanty. 1st Squadron led, with sabers pointed and soldiers low on horses' necks. 2nd Squadron joined to create a mass of 250 men and horses charging at German infantry. In the adrenaline of the charge, the Polish cavalry failed to notice a column of motor vehicles and

²¹⁶ Appendix: Image 8

²¹⁷ Citino, p256

tanks arrive. What resulted was a massacre, a mess of horse and rider at the mercy of German steel.²¹⁸

While the Polish cavalry charge inspired an inaccurate myth and legend of the Uhlans charging the German tanks, the moral and hope the charge inspired would only have been reinforced by the 10th Uhlan Regiment of the Podlaska Cavalry Brigade advancing across the German border into East Prussia.²¹⁹ Along with the Polish 9th Mounted Light Infantry and the 5th Uhlans, the Poles were repulsed by German artillery fire and trenched bunkers.²²⁰

The 1st Cavalry Brigade saw further action during the first week of September. They were met with night attacks along the roads connecting the Polish towns of Rozan, Pultusk, and Ostrow Mazowiecki. The day-time attack on September 7th, in which the Polish singled in on the 1st Mounted Regiment and attacked the horses at the rear, had the Germans so shook, that secret papers were burned as to keep them out of Polish hands.²²¹ Apart from the sneaky movements of the Polish infantry, the Polish cavalry proved to be quite adept at combatting the Germans. Not only had the Uhlans utilized their lances in a successful manner, but the “small cavalry units flushed out enemy forces” and were met with little resistance.²²² Although the “desperate courage” of the Polish cavalry could be viewed as admirable and a testament to the traditionalism of the mounted forces, in the end they were no match for the Germans. An unfortunate event for the Poles occurred on the night of September 11th, when the cavalry mistook an order meant for scouts as an order to charge on the German-occupied Kaluszyn. Opposing Panzers with sabers, it is little surprise that 33 of the 85 Polish horses returned.²²³

²¹⁸ Piekalkiewicz, p8

²¹⁹ Ibid, p9

²²⁰ Ibid, p10

²²¹ Ibid, p11

²²² Ibid, p11

²²³ Ibid, p11

The first few weeks in Poland for the cavalry and mounted units were a series of late nights, burning villages, and harrowing encounters with the enemy, on both sides. One morning during the second week of the campaign, the reconnaissance unit of the German 14th Army awoke to discover they had spent the night right under the noses of a Polish cavalry regiment.²²⁴

The Polish campaign is an excellent example of perhaps some of the more testing experiences a horse and rider might go through together. A German scout noted on a patrol that “[the riders] were scared that the horses might take fright” at the burning villages they rode past, or even worse, that the “horses might catch fire.”²²⁵ The Poles experienced the influence of the herd dynamic or mentality when approaching German-occupied Czeczotki. Galloping into artillery fire, “the horses were tired, the pitch of nervous tension induced the weaker beasts to keep up the tempo and the entire cavalcade careered directly at the screen of fire.”²²⁶ Certainly the campaign was taxing on all involved, however the horses were pushed to their limits, physically, and asked to ride straight into what could only have looked like hell to them, with fire and noise and the earth opening in front of them as they charged.

The German 1st Cavalry Brigade’s offensive role in the Polish Campaign, according to the words of one author, came to an end on September 21st, when they took up defense of the Army Corps on the path to Warsaw.²²⁷ However, one last great cavalry battle between the Germans and the Polish was still yet to happen. On September 23rd, the German cavalry was surprised by a force of Uhlans, who rode through the morning mist with steel lances glinting and the roar of their battle cry surely cutting across the field in a bone-chilling manner. Near the town of Krasnobrod, the German cavalymen rode down a hill, sabers drawn, to meet the opposing

²²⁴ Ibid, p12

²²⁵ Ibid, p12

²²⁶ Ibid, p14

²²⁷ Ibid, p14

cavalrymen. The end result was a German victory, and striking losses for the Uhlans.²²⁸ While this battle was cavalry versus cavalry, the losses were arguably more devastating due to the incorporation of firearms alongside sabers and lances. In this instance, bullets took the lives of both horses and men.

As for concluding the Polish campaign, Warsaw was taken on September 27, 1939, just ten days after the Soviets invaded Poland. While the Germans altogether did not lose many men, nearly a quarter of the tanks used were lost, reflecting just a portion of their equipment losses.²²⁹

Once Poland was under German occupation and Warsaw had been taken, the Waffen-SS cavalry had the duty to conduct ‘mopping up’ of partisan activity – an assignment for which the *Berittene Abteilung* was specifically created.²³⁰ Controlling partisan activity involved search and seizures of weapons, hunting for partisans, and protecting the *Volksdeutsche*, or ethnic Germans. Here the SS’s duties were primarily policing and security, enforcing laws and handling deportation of Polish prisoners to work camps. Of course, the punishment was doled out both informally and formally; any sign of resistance and the offender would be shot.²³¹ In more than one instance, groups of prisoners, were executed by the SS, although the reasons vary.²³²

The SS remained in Poland²³³ to continue with partisan duty and security as the war advanced elsewhere. The ‘Florian Geyer’ division was originally formed from the original brigade in June of 1942, and after some front-line action returned to the marshes. In December of

²²⁸ Ibid, p16-17

²²⁹ Citino, 259

²³⁰ Yerger, p40

²³¹ Ibid, p42

²³² Ibid, p53. One instance referenced was a transport group infected with dysentery. It was decided that the train cars were not to be sent to their final destination.

²³³ Appendix: Image 16

1944, after having seen growth over the previous years, ‘Florian Geyer’ was sent to Budapest where the soldiers met their demise.²³⁴

Being a rider, Albert Schwenn’s account offers another insight to the inefficiency and perhaps degradation felt by the cavalry. He describes one day during the invasion into Reich Commissariat Ukraine, RKU, when the troops awoke early in the morning and rode for a few miles before “[leading] our horses for three miles, as they had to be spared.”²³⁵ Of course, the motorized units in the Kfz15s quickly overtook the cavalry early in the morning.

In RKU, Schwenn operated in the infamous Wet Triangle, which lay between the Pripyat and Dnieper rivers. Here in the Pripyat Marshes, Schwenn conducted Operation Vistula I, and swept for partisans. He described seizing livestock to deprive the partisans of food and burning villages. The reconnaissance rides were met with bullets, and even abandoned villages were set with booby traps to catch the SS soldiers.²³⁶

In stark contrast to patrolling for partisans and sweeping villages, Schwenn described an event in which the soldiers played tricks on the other units, despite “the hardship” experienced in war. In one instance, the soldiers rode their unsaddled horses in nothing but bathing trunks at speed through the forest, imitating “cowboys, screeching and shouting” to frighten other units.²³⁷ It is curious to see the horses incorporated into more of the personal lives of the soldiers in this way. Of course, Schwenn “loved [his] horse but [he] would gladly have given him up for a place in an assault gun.”²³⁸

²³⁴ Fowler, p21

²³⁵ Michaelis, p20

²³⁶ Ibid, p23-24

²³⁷ Ibid, p25

²³⁸ Ibid, p35

The Western Front, 1940

After the invasion of Poland, before the war took the west, the Germans looked at the Nordic countries. Although the seaborne landing in Norway was successful, heavy naval losses handicapped the Germans, which was evident later on, upon anticipating facing Britain. Half of Germany's destroyers were lost, almost a third of her cruisers, and other ships suffered heavy damage as well.²³⁹

After Poland and Norway, the Nazi war machine was turned toward the West. The campaign was initially delayed from its original November 1939 date, and the invasion plan was further drastically revised upon the original falling into the hands of the Allies.²⁴⁰ Much of this revision included debate on panzer unit positioning. Although successful in the Polish Campaign, the inferiority of the Polish equipment and arms called into question the effectiveness of the tanks. Were tanks and their strategy actually successful or was it chance and luck that allowed the armored vehicles to penetrate so successfully into Polish territory?²⁴¹ On May 10, 1940, German troops attacked the West via land and air with 136 divisions sweeping into and over Luxembourg, Belgium, and Holland; three neutral countries toward which Hitler had previously vowed to honor that said neutrality.²⁴² The success of these strikes came not from the size of the German forces, but rather the calculated and precise attacks by aircraft and panzers. This continued to be the successful strategic deployment of German mechanized forces, and only supported the propaganda of a war machine. Seven concentrated tank divisions breaking through

²³⁹ Shire, p 711

²⁴⁰ Shirer, p715-717

²⁴¹ Citino, p260

²⁴² Shirer, p720

a weak point in the line, supplemented by air attacks and airborne troops, moved fast and effectively into Western Europe.²⁴³

The horse was ideally suited for the Eastern campaign, as the Germans would encounter, or at least prepared for, unpaved roads, questionable soil, and great distances for supply chain and advancement.²⁴⁴ Specifically in Holland, the cavalry was well adept to cross and conquer the numerous dykes and waterways, although advancement was slow. The 1st Mounted Regiment of the 1st Cavalry Division, attached to the 18th Army, had orders to break through the Dutch frontier and proceed to the coast.²⁴⁵ Within the first 20 minutes of their campaign on the 10th of May, the cavalry had advanced almost 3km into Holland. By the second day, German cavalry had ridden approximately 180km over terrain almost impassable to motor vehicles.²⁴⁶

The first Germans to cross the Seine River in France happened to be the cavalry reconnaissance squadron of the 6th Infantry Division, under the leadership of Lieutenant von Boeselager.²⁴⁷ June 9 was the day the cavalry's water training was put to the test, as twelve soldiers held their magazines in their mouths, rode their horses into the French water, and held mane and reins as the current swirled around them. Fire was exchanged across the banks, but the Germans remounted and rode their horses up the bank, successfully bringing Germany into France.²⁴⁸

The 1st Cavalry Brigade had been expanded to a division in time for combat on the Western Front and served both in Belgium and in France. After Holland, they were assigned to the 38th Army Corps. Part of their assignment were to send reconnaissance riders or scouts ahead

²⁴³ Ibid, p200

²⁴⁴ Johnson, p9

²⁴⁵ Piekalkiewicz, p27

²⁴⁶ Ibid, p28

²⁴⁷ Ibid, p30

²⁴⁸ Ibid, p30

of the infantry on their way to Paris.²⁴⁹ Their other duty was to protect the left flank of the corps. In a particularly untoward event, when the corps were positioned near Meulen, the French sent horses out into the fields approaching the Germans. These horses were riderless, and the fields were actually littered with mines.²⁵⁰ What resulted was a carnage of horseflesh, and a rather gruesome example of the horse being used as an asset and victim of war.

The German cavalry division attempted to cross the Loire on June 19, but were met by the cadets of the famous calvary school at Saumur, an establishment boasting the equestrian educations of the notable figures of General Patton and Charles de Gaulle.²⁵¹ For two days, the bridges were blown, and the French and Germans squared off across the river. The cadets were defeated when the fighting concluded in hand-to-hand combat, and the Germans advanced across the Loire river.²⁵²

The Battle of Britain and Operation Sealion

Upon the surrender of France,²⁵³ the next hurdle in Hitler's war would be Great Britain. Churchill's refusal to enter into a peace agreement prompted Hitler to order an aerial attack, which would then clear the way for an invasion.²⁵⁴ The Battle of Britain was the result of these air attacks and ultimately Britain emerged victorious. Here the naval losses were significantly felt as the invasion had hinged upon success in the air, whereas the proposed land attack, Operation Sealion, would have followed. Thus, Operation Sealion was the operation fated never to be. The proposed land assault of Great Britain would require sea transport for soldiers and the

²⁴⁹ Ibid, p31

²⁵⁰ Ibid, p32

²⁵¹ Ibid, p32

²⁵² Ibid, p33

²⁵³ Armistice of 22 June 1940

²⁵⁴ Müller, p167

numerous horses Germany planned to take over, before acquiring British vehicles. It was anticipated that the first wave of Sealion would require 4,200 horses, and a second wave of 7,000.²⁵⁵ Not only would transporting the horses across the Channel require immense preparation, resources, and time, but also training the horses to load into ships and keep calm and uninjured while sailing. In the end, Operation Sealion never came to fruition, although the sea-training for horses had begun in anticipation.²⁵⁶

Operation Barbarossa and the Eastern Front, 1941-1945

The German Army invaded Soviet Russia on June 22, 1941. The initial invasion employed 750,000 horses, although a majority of these were for artillery or as pack horses.²⁵⁷ Germany and her allies – a strength of 3.5 million men and 153 German divisions – quickly took the front which stretched between the Baltic and Black Seas. So quickly did the Germans advance to the front, that both cavalry and infantry had to leave exhausted horses behind and continue on foot.²⁵⁸ Entering Russia, the infantry divisions each employed 4,842 horses and 918 horse-drawn transport vehicles.²⁵⁹ Operation Barbarossa placed the 1st Cavalry Division with the 24th Motorized Corps of the 2nd Panzer Group of Army Group Centre.²⁶⁰ The 1st and 2nd Cavalry Brigades of the 1st Cavalry Division were the first to cross the River Bug early in the morning. By June 23, the cavalry was in Russia, on full alert for the anticipated onslaught of tanks. Losses and panic abounded when Soviet planes attacked from the sky; cavalry and horse-artillery were

²⁵⁵ DiNardo, p131

²⁵⁶ See Appendix: Image 23

²⁵⁷ Piekalkiewicz, p43

²⁵⁸ Pieper, Henning. *Fegelein's Horsemen and Genocidal Warfare: the SS Cavalry Brigade in the Soviet Union*. (Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2014.) p52-54

²⁵⁹ Fugate, Bryan I. *Operation Barbarossa: Strategy and Tactics on the Eastern Front, 1941*. (Stevenage: SPA Books, 1989.) p 346

²⁶⁰ Fowler, p11

attacked with no cover in the Russian marshes. Riders crashed into each other as panicked horses caused the columns to lose formation, some torn from their saddles in the midst.²⁶¹

The Germans would face not only Russian tanks and planes, but also the Russian calvary, which proved to be an intense force. The Cossacks Squadrons were formed within the cover of darkness, in dense forests. The cavalry units, under the command of General Lev Mikhailovich Dovator were able to disrupt German communications during the early weeks of the campaign.²⁶²

Commanding the SS Cavalry, Hermann Fegelein sought to insert and reaffirm specifically the SS Cavalry's role in Russia. He aggressively attempted to position them in a role of importance, to the point of exaggeration, as when amplified the calvary's appearance during the first combat of the campaign.²⁶³ In reality, the cavalry of the SS and the Wehrmacht performed both offensive and defensive roles, in pursuing Soviet forces but also engaging in combat.²⁶⁴ The 1st Cavalry Division found themselves once again occupying an area known as the Pripet Marshes, a wetland stretching over two hundred miles east to west and occupying over 100,000 square miles. The marshes were an interesting land area, with dry and wet areas, rivers and basins, as well as forest and dense habitat suited for boar, wolves, fowl, insects, and partisans of Soviet and Polish nationality.²⁶⁵ Operations in this area were a continuation from the Polish Campaign. The SS Cavalry Brigade encompassed the 1st and 2nd Calvary Regiments, were also occupying the Pripet Marshes around the same time as the Wehrmacht's cavalry.²⁶⁶ It was here in the marshes in which the SS cavalry later took part in the gruesome mass killings of

²⁶¹ Piekalkiewicz, p43

²⁶² Ibid, p43-44

²⁶³ Pieper, p55

²⁶⁴ Fowler, p11

²⁶⁵ Dorondo, p142

²⁶⁶ Ibid, p175-177

Jews.²⁶⁷ The first of such missions, on August 6, 1941, the SS cavalrymen initiated in the massacre at Pinsk. The exact number of Jews murdered over the course of a few days is estimated between 7,000 and 9,000, if not more.²⁶⁸ Further examination of the SS cavalry operations in the marshes and in Russia is necessary as this is perhaps the greatest significance of the cavalry's role during the Second World War. Additionally, the SS cavalry's decision to execute other groups of victims has been linked to an escalation of the Holocaust, due to the sheer excess and brutality of the SS cavalrymen, specifically.²⁶⁹

The Germans as a whole began to encounter issues as early as August, when the cold was enough to crave the greatcoat at times.²⁷⁰ The muddy season began in September, when the rains created a muck that even the most formidable German draught horses could not conquer.²⁷¹ The snows started in October, and the biting winds and following rain created a hinderance to German operations.²⁷² The issue of fodder for the horses became a real issue in Russia, when the lack of feed stockpiles and inadequate local options caused horse to “[die] en masse,” and starvation drove the animals to consume just about anything, from sawdust to saplings.²⁷³

Not just limited to the Germans, other nations utilized horses in the Second World War, with disastrous consequences as well. War never ceases to create unparalleled events of tragedy and horror. For the horse, a deeply unsettling event occurred on the shores of Lake Ladoga. In the forests surrounding the lake the Russians and the Finnish were in opposition. The Finnish cavalry assisted the VI and VII Army Corps and surrounded Russian troops in October of 1941. The forest was set ablaze, and the Finnish determinedly began firing into the burning trees.

²⁶⁷ Pieper, p62

²⁶⁸ Ibid, p94-96

²⁶⁹ Ibid, p120

²⁷⁰ Piekalkiewicz, p44

²⁷¹ Appendix: Image 17

²⁷² Piekalkiewicz, p45

²⁷³ U.S. Army Military History Institute publication MS #P-090, p74

Thousands of horses, driven on by pain and fear, tore through the burning trees and blaze of ammunition. Horses burned to death on the banks and those lucky enough to dive into the icy waters of the lake were frozen to death, entombed in ice.²⁷⁴

Rain and wind soon turned to snow and ice, and left the Germans battling an unprecedented cold.²⁷⁵ Here, the hardy panje horses with their thick coats served another purpose than pulling the ‘homemade’ Russian sleds. A soldier on the Western Front, Guy Sajer, described hanging onto a horse’s harness, his hands buried in its thick fur.²⁷⁶ At night, horses were made to lie down, just to provide warmth for the freezing soldiers. Frost bite and pneumonia ravaged the troops, and some saw their last days in the icy desert, by their hand or by nature’s, in the Russian tundra.²⁷⁷

The winter took many lives, four-legged or otherwise. As harsh as the ice and snow was, the real struggle came about when the snow gave way to sludge and mud. Not only did the appearance of ground mean the loss of sleds and the emergence of wagons, but the horses struggled with adjusting to life once again with fodder available. Just as a man left alone with meek rations will quiver in sickness at the reintroduction of steak to his diet, did the horse struggle with the addition of grain following the winter months.²⁷⁸

These winter conditions, coupled with an ongoing fuel shortage, left many vehicles out of commission or use by the German Army. This is where horses filled in the gaps, when vehicles were moved to areas of more prominent need.²⁷⁹ To meet the constant need for vehicles Germany set up maintenance facilities and increased part production. However, considering the

²⁷⁴ Piekalkiewicz, p47

²⁷⁵ See Appendix: Image 24

²⁷⁶ Sajer, Guy. *The Forgotten Soldier*. (Washington, D.C: Brassey’s, 2000.) p 59

²⁷⁷ Ibid, p 61

²⁷⁸ Piekalkiewicz, p222

²⁷⁹ Johnson, p20

large number of vehicle models, this proved to be a difficult project. Coupled with the “long overland supply routes,” there was an “excessive strain” on vehicles on the Eastern Front.²⁸⁰

German High Command disbanded the cavalry on November 5, 1941.²⁸¹ Straight from the Fuhrer, whose contempt for the cavalry surfaces in few writings²⁸², the command converted the cavalry into the 24th Armored Division and sentenced the horses, whose breeding and training dictated highly trained and valuable animals, to pull wagons and artillery.²⁸³ The use of mounted units continued, however, such as in quiet sectors in the East, which were easier to be captured by horse, rather than vehicle. Partisan control and smaller operations also called for horses.²⁸⁴

While the use of mounted units declined following this announcement, horses were still a vital and integral part of the supply chain and artillery movement. By mid-November, 85% of the 500,000 vehicles that entered Russia were no longer in use.²⁸⁵ Horse-drawn supply trains are most effective covering short distances, but the Russian campaign forced horses to being used in the rear of the trains. Covering long distances necessitated the creation of a relay system.²⁸⁶ Arguably an efficient solution to the problem of distance in the case of supply train, the Germans were not free from failure in the use of horses. In the fall of 1942, the 6th Army made the decision to send most of its horses to the rear. The remaining horses were then eaten, to provide food for the trapped and starving soldiers.²⁸⁷ When the army found itself in retreat of Stalingrad, there were not enough horses to pull the artillery and wagons.²⁸⁸

²⁸⁰ U.S. Army Military History Institute publication MS #P-090, p7

²⁸¹ Johnson, p48

²⁸² Ibid, p43

²⁸³ Ibid, p48

²⁸⁴ U.S. Army Military History Institute publication MS #P-090, p39

²⁸⁵ Garson, p100

²⁸⁶ U.S. Army Military History Institute publication MS #P-090, p51

²⁸⁷ Garson, p126

²⁸⁸ Dunn, p231

In regard to Eastern Front operations, it is important to note that members of the equestrian tribes of Cossacks and Calmucks, while originally fighting for Soviet Russia, eventually switched sides to fight for the Germans.²⁸⁹ This began as early as 1941, when in the fall, Cossack volunteers faced off against Soviet partisans.²⁹⁰

The Revival of the Cavalry

The German cavalry units were revived when von Boeselager, the same man who crossed the Seine, bent the ear of Field-Marshal von Kluge and was allowed to form the Boeselager Mounted Force. Although difficult to pry men away from the soldier hungry infantry, by February 1943 von Boeselager had acquired his horses and he had his men as well, including some Cossack recruits.²⁹¹ The German cavalry was officially back. By April, it was officially designated the Cavalry Regiment (Center) and this addition then spurred the creation of Cavalry Regiment (North) and (South).²⁹² The primary duty of these new regiments was once again partisan patrol.

The Slaughter of the Horses

In January 1944, the Germans descended upon Novgorod to capture the Danube Line unsuccessfully.²⁹³ Cavalry Regiment (North) deployed three squadrons, which all suffered considerable losses. Soon after the capture, they were ordered to evacuate.²⁹⁴ Similar situations occurred across the Crimean Peninsula, where a series of strongholds were evacuated.

²⁸⁹ Piekalkiewicz, p218

²⁹⁰ Ibid, p223

²⁹¹ Ibid, p221

²⁹² Ibid, p223

²⁹³ Richter, p29

²⁹⁴ Piekalkiewicz, p227

While the newly formed cavalry regiments proved to be useful and essential on the Eastern front, tragedy was creeping up on the Germans. When the Germans evacuated Crimea in May of 1944, they had a big problem – a 30,000 strong problem. The men, many of which could not do the deed himself, led his horse to one of the vets who shot the animal before pushing the body over the cliff and into the Bay of Severnaya. The purpose of this execution was to prevent the animals from being acquired by the advancing Soviets.²⁹⁵ Of course, the system was quickly proven too slow, as horses being held began to get agitated. In what could have only been described as chaos and lawlessness, the horses were driven to the cliff's edge and mowed down by machine guns.²⁹⁶

In this unsurpassed moment of terror, a heartbreaking farewell to a loyal mount captures what can only be described as true sorrow and grief:

“I had to hide behind a mask of anger, so as not to seem too tender-hearted. But I had to be alone to say farewell to my Paprika. She looked at me with those enormous eyes which always seemed to convey a feeling of melancholy. She nuzzled her head against my chest and finally laid it in her favorite position, on my shoulder.... We loved each other, we really did, Paprika, and the whole company knew it.... I never told you, Paprika, that I wanted to buy you a happy retirement after the war and had already found you a place to live in Berlin with some good people. But now we must go our separate ways, torn asunder by the merciless fortunes of war.”²⁹⁷

²⁹⁵ Ibid, p227

²⁹⁶ Ibid, p228

²⁹⁷ Ibid, p228

Tanks on the Eastern Front

German Panzer Commander Otto Carius described his time during the war from the perspective of his tank. His memoirs offer a different perspective to the life of the cavalymen, and the plight faced by the horses. In particular, Carius described two interesting supply issues, one in which field bakeries were held up at the rear, implying both a supply chain delay but also the difficulty in which soldiers acquired food at the front. Furthermore, the soldiers were instructed not to drink water from wells, as there was great potential that they would be poisoned. Instead, at halts, they would look for puddles from which to drink.²⁹⁸ Poisoned water supplies would indeed threaten an entire infantry or cavalry division, affecting both man and horse.

Carius's memoir offers a unique take on the terrain over which the German Army traveled. Panzer drivers had to be extremely skilled and have an instinct for the ground beneath his tracks. He described the frozen ground in Leningrad, and the sheer impossibility of leaving the road, causing great traffic jams and further delays. Marshes were a cause to abandon the tanks, which were subsequently burned as to be kept out of enemy hands. Along the Rollbahn, they were constrained to traveling at night, and Carius notes for the "slow, horse-drawn units, it was practically impossible to move forward."²⁹⁹

Russia was a test of the human body and the spirit; "inhuman conditions" matched with sheer inexperience and unpreparedness of the German Army for the cold winter left men in states of starvation, depression, and frigid numbness. Of course, Carius was adamant that the spirit of

²⁹⁸ Carius, Otto and Robert J. Edwards. *Tigers in the Mud: The Combat Career of German Panzer Commander Otto Carius*. (Guilford, CT: Stackpole Books, 2020.) p 7

²⁹⁹ *Ibid*, p27

the Germans was showcased quite positively in this campaign, due to the continued performance and success of the army.³⁰⁰

No matter how motorized certain divisions came to be, or how propaganda painted a picture of mechanized power, horses were prevalent throughout the army. Case and point, Carius, huddled in a metal tank, encountered horses at various stages. During the Russian campaign, Carius wrote of a mounted messenger who approached his tank, which was driven slowly as to not frighten the animal. The horse, young and panicky, was unfortunately caught under the tank. The body was recovered quickly though and found its way into the soldier's rations.³⁰¹ Sajer described a similar experience, viewing an animal strung up in a tree, being transformed into rations.³⁰²

Tanks, or the armored cavalry, retained similar characteristics to that of their predecessors. When ordered to leave their tanks, drivers had difficulty, much as riders would struggle with leaving their mounts behind.³⁰³ Many tank officers did come from the cavalry, and perhaps felt somewhat at home with large maneuvers and spacing, which was needed when working with horses.³⁰⁴

Operation Spring Awakening and the End of the War

The cavalry saw a great reorganization in the summer of 1944. The 1st Cavalry Corps, also known as the Harteneck Cavalry Corps, combined the German cavalry with the 1st Hungarian Cavalry. This addition of the *hussars* spurred similar situations as the

³⁰⁰ Ibid, p31

³⁰¹ Ibid, p36

³⁰² Sajer, p 63

³⁰³ Ibid, p49

³⁰⁴ Ibid, p136

Cossacks; namely, the Hussars refused certain orders, such as opposing Polish partisans, and they proved fierce and effective on the battlefield, a homage to their tradition as a horse people.³⁰⁵

In the final months of the war, the Cossack cavalry units saw combat in the Papuk mountains in Yugoslavia against the Red Army. On May 8th the Cossacks received orders to suspend operations and thus turned towards the advancing British Army, in an attempt to provide their services. However, the British, removing their weapons, turned them back over to the Russians.³⁰⁶

The 4th German Cavalry was sent to Hungary in December 1944, in an attempt to rescue the German and Hungarian forces which were under fire from the Russians. By May 8, 1945, with the surrender of Germany, the 4th Cavalry was still in Hungary, near Knittelfeld. The original operation had failed, and so the cavalry went west, moving 16,000 horses and 22,000 men towards the British forces. The German Cavalry saw its last days in the Mur Valley, and by May 11, 1946, the cavalry ceased to exist.³⁰⁷

³⁰⁵ Piekalkiewicz, p229

³⁰⁶ Ibid, p235-236

³⁰⁷ Ibid, p236

THE HORSE BEYOND COMBAT

Psychotherapy

The reaction of men to the horrors and stress of war manifests itself in what the German Army during World War I categorized as nervously ill or mentally ill. Miraculously cured during the interwar period, the Germans entered World War II still unfamiliar with the concept of combat fatigue. In the early campaigns, which were intense albeit limited in duration, psychiatric cases were limited. However, once the German Army advanced on Russia, war-induced neurosis sent many men to the psychiatrists, as psychoneurosis was considered to be psychiatric cases.³⁰⁸ “Battle neurotics” however were considered a sign of weakness and troops were subsequently punished.³⁰⁹

About one-third of war-induced neurosis cases were considered purely psychiatric; the rest of the cases were in conjunction with physical wounds or thought to be neurological or resulting from contusions in action. Treatment primarily took place in field hospitals, where after a period of recovery, most patients returned to their units. Soldiers who did not respond to field treatment, which was a combination of sedation and verbal assurance, were sent to military hospitals or *Kriegslazaret*. Military hospitals employed electric current therapy, hypnosis, and cardiozol dosing. Here, the suggestion of pain was thought to be an effective method of treatment. Roughly 85% of cases returned to their units after a stay in the military hospital.

³⁰⁸ Van Creveld, Martin. *Fighting Power: German and US Army Performance, 1939-1945*. (Praeger Publishers, 1982.) p 91

³⁰⁹ Müller, p84

Soldiers who did not return home, and further failed remote treatment, were put in mental institutions.³¹⁰

Ernst Göring, the nephew of Herman Göring, was not only training to practice psychotherapy but was a horseman. He trained with the SA Riding Corps and discovered, as many horsemen do, that riding helped with managing his stress. Combined with his previous experience and knowledge in gymnastics, Göring created ‘riding therapy’ as a means to use horses in rehabilitation programs. Göring was in charge of the Luftwaffe hospital’s psychotherapy war in Brunswick in 1940. Into 1941, Göring used horses to help ‘flown-out’ Luftwaffe pilots regain strength and the ability to mount – both horses and their eventual Messerschmitt Bf 110s. By 1942, however, Göring relinquished the program to work on the Russian front; the equine rehabilitation program was “a luxury the hard-pressed Nazis could no longer afford.”³¹¹

Eugenics

The manner of breeding horses specifically suited for war was not a new concept introduced by the Germans. As mentioned, the German State Stud farms had all been long established by the 20th century, with tenured breeding operations and renowned horseflesh. In a country reliant upon large numbers of horses for the economy but also for military, the breeding of horses was an important business.

³¹⁰ Ibid, p92

³¹¹ Geoffrey Cocks, 1948. *Psychotherapy in the Third Reich: the Göring Institute*. New York: Oxford University Press, 1985. page

Gustav Rau, a prominent name in the equestrian competition world at the time, took charge of German horse breeding. Eventually his operations included stud farms across Poland, the SS stables, and an experimental stable at Auschwitz.³¹² It was Rau who ended up driving the equine eugenics program geared towards breeding the perfect warhorse. In order to achieve this, the finest European horses were to be accumulated across Europe and the world. Rau eventually set his sights on the Polish Arabians and the Austrian Lipizzaners.

Made famous by Walt Disney's *Miracle of the White Stallions* and Elizabeth Lett's *The Perfect Horse*, the Lipizzaner breed was almost lost due to Rau's greed, as was the classical art of dressage. The director of the school at the time, Alois Podhajsky, concocted a plan to evacuate the stallions from Vienna to the town of St. Martins. There, the stallions were safe in the mountains until the advancing Soviet Army threatened the lives of the precious stallions. In a lucky coincidence, General Patton was near the town of St Martins and attended an exhibition to see the stallions. Learning of their fate, and the fate of the other captured horses, Patton initiated Operation Cowboy to liberate these white stallions, along with the breeding stock of mares, from both the Germans and advancing Russians. In the process, American POWs were also liberated.³¹³

³¹² Letts, Elizabeth. *The Perfect Horse: The Daring U.S. Mission to Rescue the Priceless Stallions Kidnapped by the Nazis*. (New York, NY: Ballantine Books, 2017.) p 37

³¹³ For more, refer to Elizabeth Letts' book, *The Perfect Horse*

CONCLUSION

The disparity between the propagandic image versus reality of the Second World War reveals striking gaps within the common conception of the war, and furthermore the understanding as a whole of the German force specifically. The horse, with the role of cavalry mount and artillery pack horse, boasted a large and impactful role within the German Army during World War II. Further examination reveals a complex and varied performance, across all campaigns, even in the face of mechanized and modernized warfare. The ever-faithful servant, the horse, carried his rider across the French riverways and Russian tundra, pulled supply wagons, and towed metal artillery. As much as propaganda elevated the German Army to a seemingly formidable force composed of terrorizing Panzers and other steel machinery, the horse was the living and breathing heart literally behind much of the German Army's movements. Almost 3 million recorded horses served under the German banner alone, pulling ambulances and field kitchens, to riding scouting missions and patrolling partisans. How many more have been lost to history may never be known.

The horse held a prominent position within the German ranks, and history has hidden them under a banner of steel and iron and fear. Whether in Polish soil or preparing to cross the English Channel, the horse was a part of the German Army and alas also fell victim to the path of destruction blazed by the events of war. Placed initially by the infamous Treaty of Versailles, the role of the horse continued to exist as the Nazis encountered shortcomings in their mad dash to modernization and world dominance. The use of the horse was not without difficulties, in that large amounts of resources were diverted to attend to the care and needs of the animals, from fodder taking up valuable train cars, or to the manpower behind the veterinary companies alone.

The end of cavalry, not just the German cavalry, was an inevitable result of a modernizing world and mechanizing warfare. As a testament to the warhorse, it is crucial to understand the sacrifice of the four-legged and consider a side of the war that has been relatively overlooked. However, the larger truth is that of the use of the horse remaining an integral part of the German army and understanding the complex nature of this utilization is critical to comprehending the true nature of the blitzkrieg and the Nazi war machine.

BIBLIOGRAPHY

- Carius, Otto and Robert J. Edwards. *Tigers in the Mud: The Combat Career of German Panzer Commander Otto Carius*. Guilford, CT: Stackpole Books, 2020.
- Citino, R. (2002). *Quest for decisive victory: from stalemate to Blitzkrieg in Europe, 1899-1940*. University Press of Kansas.
- Cocks, Geoffrey, 1948-. *Psychotherapy in the Third Reich: the Göring Institute*. New York: Oxford University Press, 1985.
- Condell, Bruce, and David T. Zabecki. *On the German Art of War: Truppenführung*. Boulder, Colorado: L. Rienner, 2001.
- DiNardo, R. *Mechanized juggernaut or military anachronism?: horses and the German army of World War II*. New York: Greenwood Press, 1991
- DiNardo, R. L. and Austin Bay, "Horse-Drawn Transport in the German Army," *Journal of Contemporary History* 23, no. 1, January 1988: p129-42
- Dorondo, D. R. *Riders of the Apocalypse: German Cavalry and Modern Warfare, 1870-1945*. Annapolis, MD: Naval Institute Press, 2012.
- Dunn, Walter S. *The Soviet Economy and the Red Army, 1930-1945*. Westport, CT: Praeger, 1995.
- Engelmann, Joachim. *German Light Field Artillery, 1935-1945*. Atglen, PA: Schiffler Publishing Ltd., 1995
- "Equestrian / Eventing Equipment and History - Olympic Sport History." International Olympic Committee, November 9, 2020. <https://www.olympic.org/equestrian/-/eventing-equipment-and-history>.
- Fowler, Jeffrey T., and Mike Chappell. *Axis Cavalry in World War II*. Botley, Oxford: Osprey

Publishing Ltd., 2001.

Fugate, Bryan I. *Operation Barbarossa: Strategy and Tactics on the Eastern Front, 1941.*

Stevenage: SPA Books, 1989.

Garson, Paul. *Warhorses of Germany: The Myth of the mechanized Blitzkrieg.* Gloucestershire:

Amberley Publishing, 2018.

German cavalry on parade--outtakes. (Fox Movietone News Story 9-163.) Fox Movietone News

Collection. Moving Image Research Collections. University of South Carolina.

<https://digital.tcl.sc.edu/digital/collection/MVTN/id/6152>

“German horse cavalry and transport.” *Intelligence Bulletin*, United States War Department,

Military Intelligence Service. March 1946. [https://archive.org/details/1946-](https://archive.org/details/1946-03IntelligenceBulletin/page/n57/mode/2up?q=horse)

[03IntelligenceBulletin/page/n57/mode/2up?q=horse](https://archive.org/details/1946-03IntelligenceBulletin/page/n57/mode/2up?q=horse)

Hayes, M. Horace. *Veterinary Notes for Horse Owners*, 18th edition. Vintage/Ebury, 2002.

Henderson, Ernest F., *Germany's Fighting Machine*. Indianapolis, MD: The Bobb-Merrill

Company, 1914.

International Military Horse Show--outtakes. (Fox Movietone News Story 21-882.) Fox

Movietone News Collection. Moving Image Research Collections. University of South

Carolina. <https://digital.tcl.sc.edu/digital/collection/MVTN/id/1380>

Johnson, Paul Louis. *Horses of the German Army in World War II*. Atglen, PA: Schiffer Military

History, 2006.

Knox, Philander C. *Treaty of Versailles*. Washington, Govt. print. Off, 1919. Web.

<https://lccn.loc.gov/43036001>

Letts, Elizabeth. *The Perfect Horse: The Daring U.S. Mission to Rescue the Priceless Stallions*

Kidnapped by the Nazis. New York, NY: Ballantine Books, 2017.

Michaelis, Rolf and Albert Schwenn. *Albert Schwenn's Memories of the Waffen-SS: An SS Cavalry Division Veteran Remembers*. Schiffer Military History, 2017.

Mueller-Hillebrand, Generalmajor Burkhard "Horses in the German Army (1941-1945)." *U.S. Army Military History Institute publication MS #P-090*. Historical Division, Headquarters, United States Army, Europe.

Müller, Rolf-Dieter, and Janice W. Ancker. *Hitler's Wehrmacht, 1935-1945*. Lexington, KY: University Press of Kentucky, 2016.

Parker, Geoffrey. *The Cambridge Illustrated History of Warfare*. Cambridge: Cambridge Univ. Press, 2008.

Pieper, Henning. *Fegelein's Horsemen and Genocidal Warfare: the SS Cavalry Brigade in the Soviet Union*. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2014.

Piekalkiewicz, Janusz. *The Cavalry of World War II*. London: Orbis Books, 1979.

"Politics and Strategy in the Second World War: Germany, Great Britain, Japan, the Soviet Union, and the United States: Papers Presented Under the Auspices of the International Committee for the History of the Second World War, San Francisco, August 26, 1975." Manhattan, Kan: [Military affairs/Aerospace historian Publishers], 1976.

"Rapallo Treaty." *A Dictionary of Contemporary World History*. Oxford University Press, March 21, 2019.

Richter, Klaus Christian. *Cavalry of the Wehrmacht, 1941-1945*. Atglen, PA: Schiffer Military History, 1995.

Sajer, Guy. *The Forgotten Soldier*. Washington, D.C: Brassey's, 2000.

Schmit, Tawny. "Soldier Builds Unbreakable Bond with Military Working Dog."

www.army.mil, December 19, 2020.

https://www.army.mil/article/241952/soldier_builds_unbreakable_bond_with_military_working_dog.

Shirer, William L., and Ron Rosenbaum. "*The Rise and Fall of the Third Reich: A History of Nazi Germany*." Simon & Schuster, 2011.

Training of German military officers--outtakes. (Fox Movietone News Story 23-505.) Fox Movietone News Collection. Moving Image Research Collections. University of South Carolina. <https://digital.tcl.sc.edu/digital/collection/MVTN/id/610>

Van Creveld, Martin. *Fighting Power: German and US Army Performance, 1939-1945*. Praeger Publishers, 1982.

Vernon, Arthur. *The History and Romance of the Horse. Illustrated by Ernest John Donnelly*. New York (State): Dover Publications [1946, c1939], 1946.

Von Bernhardt, Friedrich. *Cavalry*. New York, NY: George H. Doran Company, 1914.

Von Bernhardt, Friedrich. *How Germany Makes War*. New York, NY: George H. Doran Company, 1914.

Von Clausewitz, General Carl. *Principles of War*. Harrisburg, PA: The Military Publishing Company, 1936.

Yerger, Mark C. *Riding East: The SS Cavalry Brigade in Poland and Russia 1939-1942*. Schiffer Military History, 2004.

APPENDIX



Image 1. Training: Multiple horses and riders taking a jump. Adapted from Johnson, p31 Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P31



Image 2. Horses outfitted with the *Sielengeschirr 25* breast harnesses. This harness was used when the horse was to be driven by the saddle. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P131



Image 3. Two troopers with their mounts. Riders are wearing the M18 helmet. The curved bit is referred to as the “S” bit. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P122



Image 4. Horse-drawn wagons crowd together following combat at Andrezejewo, during the Polish campaign. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P177



Image 5. Cavalry at the trot. Natural cover from trees was gladly taken advantage of. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P175



Image 6. Example of a river crossing with horses. Unsaddled horses would swim alongside the boats, held by the troopers. In this manner, the horse could propel the boat across in the absence of ropes or oars. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P169



Image 7. Rear-shot of cavalry. The rifle is slung across the back – a practice which was discontinued in 1941. The rear pack also contains the feed bag and the *zeltbahn* – which held grain or a blanket. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P149



Image 8. A mounted officer in front of infantry. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P143



Image 9. A French road littered with the destruction of war – wagons and horses create a traffic jam for oncoming vehicles and infantry. Adapted from Garson, Paul (2018) *Warhorses of Germany: The Myth of the mechanized Blitzkrieg*. Gloucestershire:Amberley Publishing. P117



Image 10. A trooper shoots a rifle on top of his horse. This training exercise tested the obedience of the horse, but also the confidence of the rider. Further vaulting exercises were incorporated into training, increasing the riders' maneuverability and mobility in the saddle, not to mention confidence. This also helped the horse get used to movement in the saddle and worked to 'de-spook' him. Adapted from Garson, Paul (2018) *Warhorses of Germany: The Myth of the mechanized Blitzkrieg*. Gloucestershire: Amberley Publishing. P58



Image 11. A horse with a curb bit, and a forage bag strap around the neck. During the Russian Campaign. Adapted from Richter, Klaus Christian (1995) *Cavalry of the Wehrmacht, 1941-1945*. Atglen, PA: Schiffer Military History. P150



Image 12. A signals member laying telephone lines. Adapted from Richter, Klaus Christian (1995) *Cavalry of the Wehrmacht, 1941-1945*. Atglen, PA: Schiffer Military History. P123



Image 13. A 1st machine gunner removing his IMG 34. Adapted from Richter, Klaus Christian (1995) *Cavalry of the Wehrmacht, 1941-1945*. Atglen, PA: Schiffer Military History. P189



Image 14. A likely dispatch rider crosses a river. Note the halter worn in addition to the bridle. Adapted from Richter, Klaus Christian (1995) *Cavalry of the Wehrmacht, 1941-1945*. Atglen, PA: Schiffer Military History. P56



Image 15. A rider with standard equipment before 1940. Note the S bit and the scabbard.
Adapted from Richter, Klaus Christian (1995) *Cavalry of the Wehrmacht, 1941-1945*. Atglen,
PA: Schiffer Military History. P38



Image 16. A river crossing in which the horses joined their riders on the boat. This particular river crossing took place across the Pripet River in Poland. This is SS Cavalry Regiment I.
Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen,
PA: Schiffer Military History. P273



Image 17. The Russian muddy season proved a challenge to even the strongest horses. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P273



Image 18. Everyone must take cover from enemy fire – even the horses. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P329



Image 19. Horses could be moved via wagon or railcar. Measures such as these were implemented when the horses needed to be conserved, or speed and time was of the essence. This practice was also used to move injured horses. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P320



Image 20. Artillery horses being led away after delivering their guns. Adapted from Johnson, Paul Louis. (2006). *Horse of the German Army in World War II*. Atglen, PA: Schiffer Military History. P333



Image 21. Riders conquering terrain otherwise difficult for vehicles. Adapted from Richter, Klaus Christian (1995) *Cavalry of the Wehrmacht, 1941-1945*. Atglen, PA: Schiffer Military History. P84



Image 22. An example of horse artillery. Note all crew are mounted. Adapted from Richter, Klaus Christian (1995) *Cavalry of the Wehrmacht, 1941-1945*. Atglen, PA: Schiffer Military History. P102



Image 23. An example of a sea loading in anticipation for Operation Sealion. Adapted from Piekalkiewicz, Janusz. *The Cavalry of World War II*. London: Orbis Books, 1979. P92



Image 24. An ice-coated horse during the winter months in Russia. The photo is captioned noting a temperature of 45 degrees below zero. Adapted from Piekalkiewicz, Janusz. *The Cavalry of World War II*. London: Orbis Books, 1979. P171