The Influence of Horse Supply Upon Field Artillery in the American Civil War

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Abstract

The study of the field artillery of the American Civil War (1861–65) has often focused upon the technical aspects of the arm and assessed military performance largely in terms of these criteria. This article examines an understudied influence upon field artillery performance in the form of horse supply, highlighting the problems both armies faced trying to find and maintain animals for their guns. As well as creating strategic and tactical problems for both armies, shortage of horse supply influenced the Confederate decision to substantially reorganise their batteries by 1863. The difficulties of horse supply and its effect on artillery performance have implications for the wider debate on whether the American Civil War marked the beginnings of "modern" war.

The military historiography of the American Civil War (1861–65) at a tactical level has long been defined by the debate over whether the conflict marked the beginning of a recognisably modern style of warfare, as later exemplified by the First World War (1914–18). Some historians have argued that the deployment of new rifled muskets, accurate at up to 1,000 yards, decisively changed the balance of power between attack and defence on the battlefields of the Civil War.[1] The 1850s saw a sudden rush of technological developments in

1. For example: John K. Mahon, "Civil War Infantry Assault Tactics," *Military Affairs* 25 (1961): 57–68; Grady McWhiney and Perry D. Jamieson, *Attack and Die* (Tuscaloosa: University of Alabama Press, 1982); Edward Hagerman, *The American Civil War and the Origins of Modern Warfare* (Bloomington: Indiana University Press, 1988).

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both field artillery and infantry weapons, bringing increased range and accuracy. In recent years, a challenge to this traditional view has emerged: historians such as Paddy Griffith argue that this impact was far smaller than previously suggested, with fire-fights taking place at ranges roughly comparable to those found during the earlier Napoleonic Wars (1799–1815). Griffith contends that the apparent failure of assault tactics was principally caused by faulty command rather than any technological shift. Although fiercely challenged, the revisionist argument has forced a reassessment of the nature of combat in the American Civil War.

Within this discussion, however, the role and effectiveness of field artillery is largely limited to technical aspects, such as the range of field guns compared to infantry weapons. Traditionalist arguments contend that smoothbore field artillery pieces were now outranged by the new generation of rifled infantry weapons, denying them the chance to use the close-range tactics that the gunners had favoured in the Mexican War (1846–48).[2] Although still effective defensively, when used in an offensive role, attempts to rush the enemy line and overwhelm it with canister typically led to the battery being knocked out by infantry fire long before the guns could inflict significant damage. As a result field artillery was limited offensively to ineffective long-range shelling. However, recent revisionist work such as Earl J. Hess's study of the rifled musket disputes this assertion, suggesting that the range at which the new infantry weapons were used was typically short despite their theoretical capabilities, and that while infantry were capable of inflicting casualties on the gunners, this was not the only reason for the abandonment of close-range tactics.[3] Revisionist authors such as Paddy Griffith and Brent Nosworthy also argue that far from being ineffective, when handled astutely artillery could and did inflict severe damage upon enemy infantry.[4] However, in both traditional and revisionist interpretations, the role of the horse within artillery batteries is often overlooked. To draw the latest cannon or to execute the dashing charges of the Mexican War, a battery required a good team of strong animals to rush the guns into action. Without adequate horsepower, field artillery became tactically and operationally immobile, and any artillery doctrine was dependent on the physical ability of armies to put it into practice.

One of the great problems faced by the artillery of both sides in the Civil War was that as the conflict raged, finding good animals, or indeed, any animals at all, became increasingly difficult. Horses that were collected suffered terrible casualties not only on the battlefield, but also on the march and even in camp. In the Mexican War, the field artillery of the United States had achieved a reputation for excellent

2. L. Van Loan Naisawald, *Grape and Canister—The Story of the Field Artillery of the Army of the Potomac* (Oxford: Oxford University Press, 1960), x.

3. Earl J. Hess, *The Rifle Musket in Civil War Combat: Reality and Myth* (Lawrence: University Press of Kansas, 2008), 208–10.

4. Paddy Griffith, *Battle Tactics of the American Civil War* (Ramsbury, U.K.: Crowood Press, 2001), 109–11; Brent Nosworthy, *The Bloody Crucible of Courage: Fighting Methods of the Civil War* (New York: Carroll & Graf, 2003), 432–34.

mobility and rapidity of manoeuvre, but in the Civil War it became a challenge to keep the guns moving at all. Supply systems for Union and Confederate armies were taxed to the limit in providing artillery animals and neither side, particularly the Confederacy, was ever able to achieve a truly satisfactory horse supply. This severe lack of animals is often ignored in discussion of the battlefield effectiveness of field artillery, and its influence remains comparatively unstudied. For example, both J. B. A. Bailey and Boyd Dastrup fail to make any mention of horse supply in the Civil War in their respective studies of artillery in the period.[5]

Discussion of artillery effectiveness has instead focussed on the technical potential of the guns and the prevalent theoretical tactics of the era, with the issue of horse supply and its effects ignored. The purpose of this article is to examine this neglected area and study the problems Union and Confederate artillery suffered in trying to maintain their horse stock, and thus explore the extent to which these persistent, unresolved problems shaped artillery tactics and battlefield effectiveness. Ultimately any discussion of the tactical effectiveness of artillery and its interrelationship with theoretical doctrine and battlefield capability is dependent on understanding the constraints imposed by horse manoeuvrability.

The pre–Civil War U.S. regular army was a tiny force of around 16,000 men that suffered few problems in supplying its field batteries with animals. The field artillery had performed well in the Mexican War in 1846 and had impressed observers with its firepower and mobility. Typically operating independently, batteries had been able to take advantage of the largely flat terrain and the inflexible formations of the Mexican infantry to move to close range and deliver overwhelming fire. However, following that conflict, budgetary concerns became paramount in the minds of the government. Field artillery seemed to have little value in the Indian warfare that became the main duty of the army in the 1850s. Indeed, in 1851, Secretary of War Charles M. Conrad described mounted field artillery as "utterly useless" in peacetime and began a series of budget cuts that denuded the guns of their horses and left most field artillery batteries relegated to static emplacement in various seacoast and frontier fortifications.[6]

Given their small numbers, the handful of batteries that were lucky enough to retain their horses could afford to be specific about the kinds of animals they chose to employ. Mexican War veteran and regular artilleryman Captain John Gibbon devoted a full chapter to the selection and maintenance of horses in *The Artillerist's Manual*, and was keen to emphasise the preferred qualities of the animal:

> The horse for artillery service should be from five to seven years old (the latter age to be preferred) and should be from fifteen to sixteen hands high.

5. J. B. A. Bailey, *Field Artillery and Firepower* (Annapolis, Md.: Naval Institute Press, 2004), 186–205; Boyd L. Dastrup, *King of Battle: A Branch History of the U.S. Army's Field Artillery* (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1992) , 89–107.

6. William Birkhimer, *Historical Sketch of Artillery* (Washington: J. J. Chapham, 1884), 65.

> The saddle horse should be free in his movements; have good sight; a full chest; be sure-footed; have a good disposition, with boldness and courage; more bottom than spirit, and not too showy.
>
> The draft horse should stand erect on his legs, be strongly built, but free in his movements; his shoulders should be large enough to give support to the collar, but not too heavy; his body full, but not too long; the sides well rounded; the limbs solid, with rather strong shanks, and feet in good condition.[7]

The small size of the army and tiny number of mounted batteries meant such specific demands could be met easily in the years before the Civil War.[8] Even during the Mexican War, the small American expeditionary force had experienced relatively little trouble replacing horse casualties amongst its artillery. In the 1850s, when the majority of field batteries were dismounted, supply more than matched demand and there seemed little reason to institute any sort of remount system or give serious consideration to horse procurement in the event of a major conflict. Nothing in their previous experience had prepared the artillery for the level of horse attrition which would confront it in the Civil War.

The outbreak of the American Civil War saw both sides rush quickly to equip themselves with artillery, and at first the problem lay in finding ordnance rather than supplying horses. Supplies of animals seemed to be abundant. It has been estimated that there were around 3.4 million horses in the Northern states and 1.7 million in the Confederacy at the outbreak of war, with a further 800,000 animals in the border states of Missouri and Kentucky. However, from an early stage it became apparent that the demand for horseflesh would be considerably greater than in earlier conflicts. The principal weapon of the prewar army was the 6-pound smoothbore, a tried and tested cannon that was comparable to the guns which had fought in the Napoleonic Wars half a century earlier. Depending upon the manufacturer and material of the gun, it weighed between 600 and 800 pounds.[9] A healthy artillery horse of the period was believed capable of pulling around 600 pounds in weight, and therefore a 4-horse team for the 6-pound smoothbore was considered adequate in peacetime. Nevertheless, the rigours of active campaigning, often away from roads and over difficult ground, proved to be very different from peacetime manoeuvres, and it was suggested that even for lightweight pieces such as the old 6-pound cannon, a 6-horse team was optimal during war. Furthermore, newer gun types that began to be deployed during the Civil War were considerably heavier and more demanding upon the horses. The direct replacement for the 6-pound smoothbore was the 12-pound Napoleon gun, but the new weapon weighed around 1,200 pounds, and

7. John Gibbon, *The Artillerist's Manual, Compiled from Various Sources and Adapted to the Services of the United States*, 2nd ed. (New York: D. Van Nostrand, 1863), 95.

8. The number of mounted batteries fluctuated throughout the 1850s, but was never more ten. See Dastrup, *King of Battle*, 86.

9. James C. Hazlett, Edwin Olmstead, and M. Hume Parks, *Field Artillery Weapons of the Civil War* (Newark: University of Delaware Press, 1988), 30–49.

Twenty-pounder Parrott guns being towed, 1st New York Battery, near Richmond, Virginia, June 1862 [Library of Congress]

although a 6-horse team was generally assigned to move it, the animals needed to be strong and healthy to handle the additional weight. Moreover, the armies of both North and South deployed even heavier field pieces during the war, with weapons such as the 20-pound Parrott rifle demanding eight or more horses to keep them moving.[10] When ammunition caissons and wagons were taken into account, it was considered necessary to have around 116 horses for a full-strength 6-gun smoothbore battery, and ideally more were desired to replace casualties and allow tired animals a chance to rest.[11]

Faced with these greater demands for animals, the armies quickly used up the best horses. As early as March 1862, one artillery officer in the Army of the Potomac complained in his diary, "I wish I had a better lot of horses to enter on a campaign with, but Captain [Thomas W.] Osborn tells me that there are none to be had in Washington."[12] These problems would intensify for both sides as the war developed and horse attrition began to rise sharply. Horse casualties during the hard-fought battles and campaigns of the American Civil War were extremely high. Although referring to his experience with cavalry, James Wilson wrote graphically of the suffering of horses during the Nashville campaign in late 1864:

> The men of both forces suffered dreadfully, but the poor cavalry horses fared still worse than their riders. Scarcely a withered corn blade could be found for them, and thousands, exhausted by overwork, famished with hunger or crippled so that death was a mercy, with hoofs dropping off from frost and mud, fell by the roadside, never to rise again.[13]

10. Hazlett et al., *Field Artillery Weapons,* 88.

11. Jennings Cropper Wise, *The Long Arm of Lee or the History of the Artillery of the Army of Northern Virginia: Bull Run to Fredericksburg* (Lincoln: University of Nebraska Press, 1991), 111; Charles Wainwright, *Diary of Battle: The Personal Journals of Colonel Charles S. Wainwright 1861–1865*, ed. A. Nevins (New York: Da Capo, 1998), 333.

12. Ibid., 26.

13. Quoted in John W. Morton, *The Artillery of Nathan Bedford Forrest's Cavalry* (Marietta, Ga.: Bellum Editions, 1995), 298.

Suffering from exhaustion, disease, and battlefield injury, artillery horses had a life expectancy of just seven and a half months during the Civil War.[14] During the Maryland Campaign and subsequent Battle of Antietam (1862), the Army of Northern Virginia suffered around 50 percent casualties amongst its artillery horse stock.[15] At the Battle of Gettysburg (1863), it is estimated that 3,500 to 5,000 horses from both sides were killed in action, a figure that does not include the thousands that were condemned after the fighting as a result of wounds or exhaustion.[16] The Army of the Cumberland left particularly precise records of casualties amongst its artillery horse stock during the Atlanta campaign in 1864. The army left Chattanooga in April 1864 to begin the invasion of Georgia with 2,445 horses in its various artillery commands. Over the course of the campaign it suffered 1,439 losses amongst its horses, a casualty rate of 59 percent, and received 599 replacements, leaving it with 1,595 animals on hand by 1 October 1864.[17]

In battle, artillery horses were particularly vulnerable. Although the battery crew would try to keep their horses in cover, this often proved impractical or impossible, and the teams were thus forced to stand behind the battery in the open. As large static targets, horses presented an ideal mark for infantry sharpshooters, and were also vulnerable to artillery fire aimed at the battery that overshot and landed amongst them. At Gettysburg, one Union officer remembered, "I saw one shell go through six horses standing broadside."[18] Infantry fire was equally deadly, although the endurance of wounded horses could prove impressive. Infantryman John Billings described horses under fire:

> A peculiar dull thud indicated that the bullet had penetrated some fleshy part of the animal, sounding much as a pebble does when thrown in the mud. The result of such wounds was to make the horse start for a moment or so, but finally he would settle down as it was something to be endured without making a fuss, and thus he would remain until struck again. . . . I saw one such brute struck by the seventh bullet before he fell for the last time.[19]

The same horses would be used to move the guns to and from the battlefield as well as to manoeuvre upon it. Although in some cases it was possible to move guns by other means such as by railway, the field artillery still relied on their

14. Philip M. Cole, *Civil War Artillery at Gettysburg: Organization, Equipment, Ammunition and Tactics* (New York: Da Capo Press, 2000), 110.

15. Wise, *The Long Arm of Lee: Bull Run to Fredericksburg*, 321.

16. Cole, *Artillery at Gettysburg*, 118–19.

17. United States Government, *The War of the Rebellion: A Compilation of the Official Records of the Union and the Confederate Armies*, *128 Volumes plus appendices* (Washington: Government Printing Office, 1881–1891), series 1, vol. 38, pt. 1, 186. [Hereafter referred to as *O.R.* Unless otherwise noted, all citations are from series 1.]

18. Fairfax D. Downey, *The Guns at Gettysburg* (New York: David McKay Company Inc., 1958), 130.

19. John D. Billings, *Hardtack and Coffee or the Unwritten Story of Army Life* (Boston: George Smith & Co., 1887), 327.

animals to provide tactical movement. Heavy losses amongst a battery's horses stripped the guns of mobility, which could pose a serious problem if the unit was called upon to manoeuvre quickly, and especially if it was required to retreat. Without horses field artillery was of use only in static emplacement, lacking tactical versatility. In the event of a battery suffering heavy losses to its horses, teams would be consolidated to tow the guns. Caissons would be stripped of their animals and abandoned before cannons, but sometimes losses demanded greater sacrifice. Lieutenant Charles Humphrey of the Fifth Wisconsin Battery related such abandonment in his report on the Battle of Murfreesboro in 1862–63:

> the order was given to limber up and fall back. This was done in good order, though we were obliged to leave one gun and two caissons on the field, on account of the horses being killed.[20]

In the Confederate armies during the later years of the war, horse supply had become so precarious that some Rebel batteries were forced to balance the risks to guns and animals. Southerner Robert Stiles recalled in his memoirs:

> After Gettysburg it was our habit, when a piece became engaged, to send the horses to the rear, to some place of safety, preferring to run the risk of losing a gun occasionally rather than the team that pulled it.[21]

Even assuming horses were available and on hand, limbering up while under enemy fire was a dangerous manoeuvre that was extremely vulnerable to interruption. A single dead or injured horse would have to be cut from the harnesses before the rest of the team could move off, possibly causing crucial delays. At the Battle of Gettysburg, the commanding officer of Battery C, Fifth United States Artillery, reported these problems:

> The enemy were too close. I endeavoured to get my guns off the field; succeeded in getting off but three, as some of the drivers and horses were disabled while in the act of limbering up. My horse was shot at this time, and, as I was rising from the ground I was struck with a spent ball, and everything seemed to be very much confused.[22]

If a damaged battery had enough time, it was possible to attach ropes to a gun and drag it by hand, but this process was slow and often caused the enemy to redouble their efforts, sensing that the battery was vulnerable to capture. At the Battle of Chancellorsville in 1863, Confederate Major Robert Hardaway engaged a Union battery and witnessed such an attempt:

> After many of their horses had been killed, an attempt was made to lash the guns together with prolonges, leaving the limbers on the field, and using drag ropes. . . . Thinking canister would reach them,

20. *O.R.*, vol. 20, pt. 1, 267.

21. Robert Stiles, *Four Years Under Marse Robert* (New York: Neale Publishing Co., 1904), 52.

22. *O.R.*, vol. 27, pt. 1, 880.

> I tried it at high elevation. I soon cleared the place of infantry, and shot down two or three teams of horses that had been brought back. The guns were abandoned by the enemy.[23]

Although the scale of losses surprised many, casualties amongst the horse stock during battle were to be expected and little could be done to prevent it. However, a more serious and worrying problem for the armies of both sides was the heavy attrition their horses suffered away from the battlefield. A key factor in the cause of these non-combat casualties was the inability of the already overburdened supply networks to provide the enormous amount of forage that the artillery's horses consumed every day. As large draft animals these horses were particularly demanding, and their ration was prescribed as 14 pounds of hay and 12 pounds of grain per day.[24] In the winter of 1861–62, even though not on an active campaign, the Army of the Potomac required 400 tons of forage per day to feed its artillery horses.[25]

Maintaining this level of supply was to prove impossible, particularly during active campaigning in areas with weak transport networks. Called upon to carry out considerable labour on inadequate rations, the health of the horses inevitably suffered. Union artillery officer Charles Wainwright lamented over the issue in his diary:

> February 12th 1863: The condition of the horses . . . was poor throughout, owing to the short supplies of hay. I found them looking much worse than they did a month ago, although they have had nothing to do.
>
> Captain Thompson returns but an average of twenty-seven and one-third ounces of hay per horse for each day's feed in January. Many of the oats too, are musty, and the horses are falling off at such a rate that from fifty to one hundred [replacements] a month will be required to keep the batteries efficient, unless our quartermaster turns over a new leaf.[26]

Horses weakened by hard labour and lacking in good forage were especially prone to disease. A number of contagious diseases, particularly glanders, an infectious disease of the skin and sinus, would bedevil the artillery animals of both armies. In the crowded conditions of army camps, disease outbreaks could spread quickly. Wainwright experienced such an outbreak in November 1862:

> November 2nd, 1862: . . . I find a terrible disease breaking out among the battery horses which seems to be spreading very fast. The captains tell me that they first noticed it five days ago at Berlin, and already a large number in all the batteries are dead lame. The hoof cracks right around the crown, in some cases so badly that you can put your finger in between it and the crown.

23. *O.R.*, vol. 25, pt. 1, 879–80.
24. Gibbon, *Artillerist's Manual,* 352.
25. Cole, *Artillery at Gettysburg,* 111.
26. Wainwright, *Diary of Battle,* 165.

Blacksmith shoeing horses at headquarters, Army of the Potomac, Antietam, Maryland, September 1862 [Library of Congress]

> November 9th, 1862: The disease among my battery horses, which first broke out at Berlin, has got to be quite a serious affair . . . I made an inspection through all the batteries this morning, and found 315 horses attached more or less, about half of which are absolutely unserviceable.[27]

Each battery carried basic veterinary equipment in its chests, but, in the face of serious outbreaks, homespun cures and amateur treatments were inadequate, frequently resulting in the afflicted horses dying. In early 1864 the Confederate Army of Tennessee was struggling with a particularly severe outbreak of distemper. As well as establishing a horse infirmary to quarantine diseased stock, in desperation the artillery requested a veterinary surgeon be attached to the army, "the want of whom is very much felt."[28]

Another factor in causing horse casualties away from the battlefield was the lack of basic equipment needed to tend the animals. Currycombs, harnesses, and especially horseshoes quickly became highly desired items. Edward Porter Alexander remembered efforts to secure horseshoes while fighting in Tennessee in 1863:

> We were so deficient in horseshoes that on the advance to Knoxville we stripped the shoes and saved the nails from all the dead horses, killing for the purpose all wounded and broken-down animals, both our own and those left behind by the enemy . . . the river brought down a number of dead animals thrown in within the town. We watched for these, took them out, and stripped their feet of shoes and nails.[29]

27. Ibid., 121–24.

28. *O.R.*, vol. 32, pt. 3, 694.

29. Edward Porter Alexander, *Military Memoirs of a Confederate* (Chapel Hill: University of North Carolina Press, 1992), 491.

During mobile operations, horseshoes were vital for the well-being of the animals, particularly if travelling over roads with hard surfaces. Both Union and Confederate artillery suffered from these problems, especially as cavalry horses had priority for supplies of shoes. As a result, many artillery horses became casualties while simply marching, with their unprotected hooves bloodied and injured. In the aftermath of the Gettysburg campaign, Robert E. Lee wrote to Confederate President Jefferson Davis:

> We are in great need of horseshoes, having been able to procure none on our expedition, and our constant motion preventing their manufacture from iron that fell into our possession, more than half the cavalry is dismounted, and the artillery horses and wagon teams have suffered equally.[30]

Harnesses were also in particular demand in the Confederacy, where leather was difficult to obtain. By 1864, leather cost $5.30 per pound in the South and replacement harnesses were increasingly rare, making captured Union harnesses a much sought after prize.[31] Other basic equipment was often lacking, especially after a battle where kit would inevitably be broken or lost. After the Battle of Missionary Ridge in late 1863, a single Confederate battery in the Army of Tennessee filed a request for twenty-four saddle blankets, six bridles, eight halters, three saddles, and fifty horse brushes.[32] These minor deficiencies in equipment all contributed to the generally poor health of artillery horses.

Horses that fell ill or were otherwise injured would be kept with the battery if possible, but if the animal's condition deteriorated it would be condemned and removed from service. Union gunner John Rhodes remembered the fate of one set of condemned horses:

> It had been a very hot day, and very fatiguing to both man and beast, so much so that five of the horses, that had been worn out on the march and could not be made to travel any further, were condemned and shot.[33]

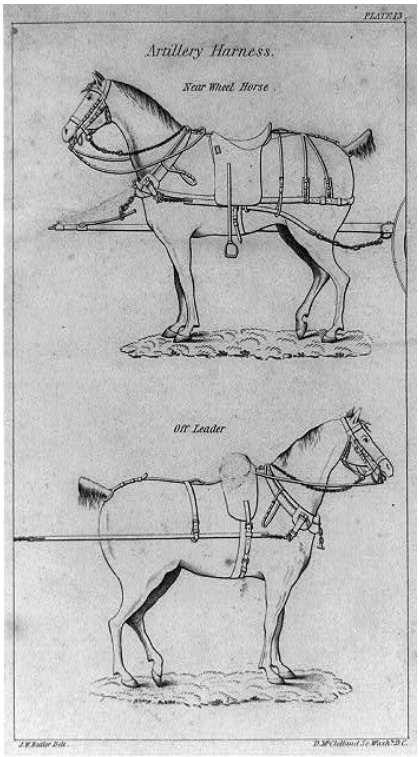
However, not all condemned horses were executed in such a manner. For example, on the retreat from Gettysburg, the Confederate army simply abandoned condemned horses at the roadside, where many were subsequently appropriated by Union officers to serve as pack animals. Indeed, it was not uncommon to find abandoned or escaped animals wandering the rear areas of an army. In Tennessee in 1862, Union quartermaster Simon Perkins sought and received permission to

30. *O.R.*, vol. 27, pt. 2, 302–4.

31. Jennings Cropper Wise, *Long Arm of Lee or the History of the Artillery of the Army of Northern Virginia: Chancellorsville to Appomattox* (Lincoln: University of Nebraska Press, 1991), 908.

32. Larry J. Daniel, *Cannoneers in Gray: The Field Artillery of the Army of Tennessee 1861–65* (Tuscaloosa: University of Alabama Press, 1984), 122.

33. John Rhodes, *The History of Battery B, 1st Regiment Rhode Island Light Artillery* (Baltimore, Md.: Butternut and Blue, 1997), 229.



Engraving of two horses fitted with artillery harnesses, 1861–1865 [Library of Congress]

round up stray horses, subsequently finding twenty-seven healthy animals roaming the countryside to the rear.[34]

Although failing horses were often abandoned or shot, regulations suggested that condemned animals with any hope of recovery were to be turned over to the quartermaster department, which would endeavour to bring the animals back to a level of health sufficient for them to resume service. In reality, however, the system was flawed and hopelessly inefficient. The armies of the Civil War began the conflict with no system of remount stations or meadowing depots, which made replacement and rehabilitation of broken-down stock a haphazard, ad hoc arrangement. Faced with a sudden influx of condemned animals, quartermaster departments frequently failed to cope, and horses, which had been sent from the front line in the hope they might recover, died in the care of the officials. For example, the Confederate horse infirmary at Lynchburg, Virginia, received 6,875 broken down horses from October 1863 to February 1865, but over half of these animals died in care, with just 1,057 being returned to the Army of Northern Virginia fit for service.[35] The situation in the west was little better. In early 1864, the artillery officers of the Confederate Army of Tennessee were bombarding Richmond with requests for fresh horses to restore mobility. In April, an inspector was sent west to study these "frequent calls for horses" and subsequently discovered that the quartermaster of the army had not been turning in broken-down stock for rehabilitation, with the result that around 2,500 horses had been needlessly lost between January and April 1864.[36]

However, in truth the quartermasters faced an unenviable task. Nothing in previous American military experience had prepared either army for the scale of

34. Lenette S. Taylor, *The Supply for Tomorrow Must Not Fail: The Civil War of Captain Simon Perkins Jr., a Union Quartermaster* (Kent, Ohio: Kent State University Press, 2004), 55–56.

35. Charles W. Ramsdell, "General Robert E. Lee's Horse Supply 1862–1864," *American Historical Review* 35, no. 4 (1930): 759.

36. *O.R.*, vol. 32, pt. 3, 772–73; Wise, *Long Arm of Lee: Chancellorsville to Appomattox*, 709.

the problems they faced and supply officers were forced to learn from scratch in the midst of active campaigning. There were limited options available to the quartermaster departments for restoring the health of broken-down horses. Condemned animals needed good forage and rest, but healthy animals inevitably had priority for already scarce supplies. Meadowing depots offered a solution, providing a place where horses could be rested and have the opportunity to eat green foods far from the battle line. Although green forage was not a true substitute for hay and oats, in combination with rest and rehabilitation a condemned horse could recover its health in these depots. Unfortunately, at the outbreak of war, no such depot system existed in the United States. As the problems of horse attrition became severe, both sides began to work on creating a strong supply network, but trying to build one during the midst of active campaigning meant the results were inevitably somewhat limited. The Army of Northern Virginia was the first force to make a serious effort to develop an artillery meadowing depot system, in the aftermath of the Gettysburg campaign, but even with this improvement horse supply remained severely limited in the Confederacy.[37] The depots helped ease some of the pressure, but as the South lost territory they became harder to maintain. For example, by January 1865 the artillerymen of Jubal Early's army in the Shenandoah Valley area were being offered "horse furloughs," whereby they would be allowed a furlough provided they took an artillery horse home with them to feed, care for, and rehabilitate.[38]

The lack of a genuine remount system became most apparent in the aftermath of a hard-fought battle, when horse casualties would be severe and replacements would be urgently required. For example, on 4 July 1863, a day after the Battle of Gettysburg, Rufus Ingalls, Chief Quartermaster of the Army of the Potomac, wrote to the War Department on the subject of replacement horses for the artillery and cavalry:

> The loss of horses in these severe battles has been great in killed, wounded and worn down by excessive work. Gen. [George] Meade and staff for instance, lost 16 in killed yesterday [sic]. I think we shall require 2,000 cavalry and 1,500 artillery horses, as soon as possible, to recruit the army . . . I hope you have enough to make up the deficiencies.[39]

The War Department replied, but could not offer the kind of help that Ingalls had undoubtedly hoped for:

> To improve the victory, you will need, doubtless, many remounts. Stand on no ceremony, but, by purchase or impressment of all serviceable horses within range of your foraging parties, refit the artillery and cavalry in the best possible manner.[40]

37. Ramsdell, "General Robert E. Lee's Horse Supply, 1862–65," 764–65.
38. *O.R.*, vol. 46, pt. 2, 1135.
39. *O.R.*, vol. 27, pt. 3, 542.
40. *O.R.*, vol. 27, pt. 3, 569.

This exchange of letters illustrates the relatively ad hoc nature of the remount system even by the middle stages of the war. The War Department possessed no reserve of horses on hand for resupply in the event of heavy casualties, and was instead largely reactive to events. Although the War Department did attempt to collect horses for the Army of the Potomac from all across its territory, including far western cities such as Detroit, Michigan, and Minneapolis, Minnesota, this inevitably took time and was of little use to the Union forces eager to restore their mobility and pursue the defeated Confederates. Ultimately, the Army of the Potomac was forced to reorganise its wagon trains in the aftermath of the battle, downsizing their teams, to free up fresh horses for the field artillery.[41] A further limitation on Union horse procurement throughout the war was the policy introduced by Chief Quartermaster Montgomery C. Meigs forbidding the purchase of mares, because of the risk they would become pregnant and also the need to preserve future breeding stock.[42] While this concern was valid, it served to exacerbate the problems of ensuring adequate horse supply.

With Ordnance Department procurement proving ineffective and remount depots inadequate in scale, both sides were forced to rely heavily upon local impressments, known as "pressing for shorts."[43] Although initially the Union rejected this method as it was effectively seizing private property, by 1862 it had been embraced as a valid tactic for denying the enemy supplies. Both sides scoured their areas of operations and beyond looking for suitable horses, to the consternation of the local population. One Confederate artilleryman remembered searching Pennsylvania for horses during the Gettysburg campaign:

> Of course, it goes without saying, that the quartermasters, especially of artillery battalions, were, confessedly and of malice aforethought, horse thieves. It was perhaps, adding insult to injury to offer to pay for the horses, as we did, in Confederate money; yet occasionally the owner took it, as "better than nothing"—how better it would be difficult to say. I felt sorry for the farmers, some of who actually concealed their horses in their dwelling houses, or, rather, attempted to conceal them, for we became veritable sleuth-hounds in running down a horse, and were up to all the tricks and dodges devised to throw us off the track.[44]

Although the Confederates took advantage of their forays into Northern territory to search for animals, for the most part they were forced to look internally for their needs. In Georgia, quartermaster agents from both the Army of Northern Virginia and the Army of Tennessee found themselves in competition for the best horses with the result that much of the state was stripped bare of appropriate animals. Army of Tennessee commander Braxton Bragg finally issued an order impressing all available horses in Atlanta, with guards posted on the roads out of

41. *O.R.*, vol. 27, pt. 3, 542, 569.
42. Taylor, *The Supply for Tomorrow*, 116.
43. Wise, *Long of Arm of Lee: Chancellorsville to Appomattox*, 697.
44. Stiles, *Four Years Under Marse Robert*, 199.

the city to stop owners trying to smuggle their horses away. The policy was ended only when Governor Joseph Brown issued a formal complaint.[45] In May 1864 the Army of Northern Virginia imposed a similarly draconian requisition order upon Richmond to bring its artillery up to strength for the Overland Campaign.[46]

The quality of replacement horses brought in by the various procurement methods steadily declined as the war progressed and the best horses were used up. Charles Wainwright commented in his diary: "As a rule, one-half of the horses received from the corrals are totally unfit for artillery use."[47] A Confederate artilleryman condemned one set of replacements he received in 1864 as "among the poorest specimens I have seen since the beginning of the revolution."[48] Sometimes, cavalry were dismounted and their horses transferred to the batteries to restore mobility, as occurred in the Confederate army after the Battle of Shiloh in 1862, but more often the artillery found itself competing with cavalry and transport for the best animals, and it was not uncommon for the gunners to come off worst. In April 1864 an inspection discovered that of 525 fresh horses sent to the Army of Tennessee to serve with the artillery, around 100 of the best animals had been appropriated by wagon trains and officers for their own use, leaving the artillery short.[49]

The consequences of these persistent shortages were threefold, and all must be incorporated into any discussion of artillery effectiveness in the Civil War. Confederate armies in both the eastern and western theatres were forced to reduce their battery strength from six guns to four guns, and subsequently developed the battalion system, a method of grouping the individual batteries of the division into a single battalion to facilitate the massing of large numbers of guns, in part due to the ineffectiveness of committing batteries piecemeal as had occurred in the early part of the war. Second, the field artillery of both North and South also chose to move away from the close-range tactics that had been successful in Mexico, as the difficulty of moving heavy guns across rugged terrain with weak horses and the consequent danger of casualties from infantry fire meant that the risks seemed to outweigh the rewards of such bold tactics. Instead, batteries generally chose to engage at long range. Finally, the overall poor condition of horse supply placed limits on strategic manoeuvre and created serious logistical problems for armies in all theatres.

Although Union officers often complained of lack of horses, their problems were generally smaller than those of their Confederate opponents. The North had more resources to draw upon, both in terms of horses and forage, and also had the advantage of campaigning in enemy territory for much of the war, slowly constricting the Confederate borders and sources of supply. For the Rebels

45. Edward Turner Sykes, *Walthall's Brigade; A Cursory Sketch, with Personal Experiences of Walthall's Brigade, Army of Tennessee 1862–1865* (Columbus, Miss.: s.n., 1905), 525.

46. William M. Owen, *In Camp and Battle with the Washington Artillery of New Orleans* (Baton Rouge: Louisiana State University Press, 1999), 310.

47. Wainwright, *Diary of Battle*, 269.

48. Daniel, *Cannoneers in Gray*, 125.

49. *O.R.,* vol. 32, pt. 3, 772–73.

however, the problems were greater and were to have a severe tactical impact. From an early point in the war, Confederate armies experienced difficulty in supplying all the horse requirements for six-gun field batteries. Edward Porter Alexander commented on the problems after the war:

> The batteries were generally composed of but four guns, which is not an economical arrangement. . . . the scarcity both of horses and ordnance equipment made it difficult to get, and more so to maintain a six-gun battery, it resulted in that few six-gun batteries were put in the field, and nearly every one of these was eventually reduced to four guns.[50]

It would take the shocking horse casualties suffered during the campaigns of 1862 to make the Confederate armies formally adopt the four-gun standard. In the west, the Battle of Shiloh in April 1862 left the Rebel artillery in a shambles. Three weeks after the battle, a formal reorganisation reduced each battery to four guns and assigned six horses per gun. Cavalrymen were forced to dismount to provide horses to help bring the batteries up to full strength, compensation being paid to the horsemen as in many cases their animals were their private property.[51] The four-gun standard would remain in place for the rest of the war.

The Army of Northern Virginia initially enjoyed a better supply of horses, but as early as June 1862 the quartermaster general warned that lack of animals and forage meant that his department could not sustain any increase in artillery strength.[52] Although the army maintained some six-gun batteries throughout the year, the appalling horse casualties during the Maryland campaign markedly reduced their number. Indeed, losses were so serious at Antietam that in the aftermath of the battle, a number of artillery batteries were reported out of action for want of animals.[53] While the Army of Northern Virginia was able to recover and fight the Battle of Fredericksburg in December 1862, this was a largely static defensive battle and did not require the guns to display great manoeuvrability. The problems of horse supply remained, however, and by January 1863 the artillery had formally adopted a four-gun standard. Surplus guns were sent to garrison duty or placed in reserve, and horse supplies were consolidated wherever possible. A number of factors influenced this decision, including the desire to phase out obsolete weapons and a drive to create uniformity of armament within individual batteries, but the difficulty in supplying and maintaining adequate numbers of horses was undoubtedly highly important. Yet, even two months after the reorganisation in the Army of Northern Virginia, horse problems remained and Chief of Artillery William Pendleton wrote anxiously to the Confederate Inspector of Transport: "I have gotten in the statement of what will be needed by

50. Edward Porter Alexander, "Confederate Artillery Service," *Southern Historical Society Papers* 11 (1883): 98–113.

51. *O.R.*, vol. 10, pt. 2, 642.

52. Ramsdell, "General Robert E. Lee's Horse Supply, 1862–65," 759.

53. Wise, *Long Arm of Lee: Bull Run to Fredericksburg,* 327.

the batteries . . . there are needed for efficiency fully 1,200 horses. They ought to be ready on demand. Are they?"[54]

A four-gun battery required around eighty-four horses when at full strength and could be taken into action with as few as fifty, and thus proved substantially less demanding on animal procurement than a six-gun battery.[55] However, the cost was a sacrifice of a significant amount of firepower per unit. In combination with the generally lower quality of Confederate guns and ammunition, this seriously weakened an individual battery's potential, especially during counter battery duels when the greater weight of fire that could be brought to bear by a six-gun Federal unit could prove too heavy for outgunned Rebel artillerymen to withstand. Although operational and tactical mobility was maintained under the four-gun system, individual battery firepower was reduced by a full third. The fact that this retrograde tactical step was considered a fair trade off at the time indicates the extent to which the South struggled to supply its artillery with horses.

There were some attempts to upgrade from the four-gun system, especially amongst the horse artillery. In May 1863, J. E. B Stuart's Chief of Artillery, Robert Beckham, began to equip the Stuart Horse Artillery to a six-gun per battery standard. A request for additional horses to pull the extra guns drew a personal reply from General Lee:

> As to artillery horses, I fear none can be given you. The horses brought in by Gen. W. E. Jones, I understand, have to be put in condition for service before they can be used. We are unable to supply teams for the medical wagons, ambulances, and ammunition trains of the army. You have increased your artillery, when it is a question of whether we shall not have to reduce the guns in the army. Four to a battery of horse artillery is as much as we can horse and maintain, as far I can now see. If efficient, it is probably as much as necessary.[56]

The pressure upon horse supply and consequent reduction to a four-gun battery standard helped push the Confederate artillery in the east towards the adoption of the battalion system. Prewar organisation had assigned a single battery to an infantry brigade, but this had been found inadequate in combat and limited the ability to mass firepower. The result was that during the Peninsular Campaign of 1862, Confederate artillery was frequently committed piecemeal against larger numbers of Union guns, often with disastrous consequences. The decision to reduce to a four-gun standard further exacerbated the weaknesses of the old battery-brigade system, and the importance of tactical reform to avoid such uneven artillery duels became paramount. For the Southern gunners, who lacked the material to compete with Union batteries on a one-on-one basis, concentrating their available artillery rather than allowing it to

54. *O.R.*, vol. 25, pt. 2, 695.

55. Wise, *Long Arm of Lee: Bull Run to Fredericksburg*, 111; Wainwright, *Diary of Battle*, 333; Stiles, *Four Years Under Marse Robert*, 52.

56. *O.R.*, vol. 25, pt. 2, 820.

be overwhelmed individually became crucial. The Army of Northern Virginia was therefore forced to develop ways to operate that avoided ineffective individual battery action and instead allowed the deployment of massed guns.

However, because of the Confederacy's overall numerical and material inferiority to the Union artillery, Confederate gunners could not rely on sheer mass to counter the Northern long arm. Instead, as J. B. A. Bailey has argued, it was necessary for them to possess the tactical flexibility to manoeuvre and achieve local concentrations at critical points.[57] Grouping batteries together under the tactical command of a corps-level Chief of Artillery, the battalion system took advantage of the mobility of the artillery and made rapid deployment possible, allowing the four-gun system to minimise the effect of reduced firepower per battery while taking advantage of the manoeuvrability gained from having a full horse team to move the pieces. The battalion system provided a framework which allowed the Confederates to mass guns at crucial moments, and these tactics proved particularly successful on the defensive at Antietam and on the offensive at Chancellorsville. Although the Confederate armies in the western theatre did not adopt the battalion system until early 1864, artillery had a much smaller role in the Tennessee and Georgia areas and suffered from weak leadership which failed to improve its organisation from its prewar roots.

While the battalion system was a tactical success and helped the Confederate artillery to compete effectively against its Union rivals in the east throughout 1863 and 1864, it was still dependent on horse supply to achieve its full potential. The system provided the tactical framework to achieve local artillery concentrations, but to put this into practice required a strong horse supply to ensure the ability to manoeuvre to critical points. As the war continued and demands upon horseflesh increased, maintaining this mobility became a grave difficulty for the Confederate artillery, particularly in the aftermath of bloody battles such as Antietam and Gettysburg. For example, in August 1863, the risk of destroying the mobility of his artillery bedevilled Robert E. Lee's desire to advance against the Army of the Potomac, Lee noting in a letter to Jefferson Davis, "Nothing prevents my advancing now but the fear of killing our artillery horses."[58]

The unresolved problems of horse supply and the crucial need to maintain mobility placed serious limits on the potential of Confederate artillery, even after the reduction to a four-gun per battery standard. While the number of guns with the Confederate armies generally remained high in proportion to infantry strength, over the course of the war there was growing pressure for further reductions within the long arm due to the difficulties of providing animals. Following the Maryland campaign, the Confederates were forced to reorganise and consolidate their artillery strength to ensure adequate horse supply, reducing the number of batteries from seventy-three to fifty-four.[59] Lee complained six weeks after

57. Bailey, *Field Artillery and Firepower*, 201.
58. *O.R.*, vol. 29, pt. 2, 664–65.
59. Wise, *Long Arm of Lee: Bull Run to Fredericksburg*, 329–30, 337.

Gettysburg that he had been forced to reduce the number of guns with the army for want of horses and forage, and feared further reductions were inevitable.[60] The situation became worse as the war continued, and in April 1864 the ordnance bureau suggested that a cut in artillery strength would ease horse supply problems, a proposal that was firmly rejected by Lee himself.[61] However, after the hard fighting of May 1864, a number of field batteries were forced out of action by casualties amongst their horses. Due to the difficulty of providing fresh animals, the Ordnance Department suggested that the guns could simply be removed from the overall artillery strength of the army.[62] The settling of the Union and Confederate armies into relatively static lines around Petersburg reduced the need for draft horses and thus staved off further calls for reducing Confederate field artillery. However, when the Confederate long arm was required to move again in March 1865, the lack of horses and forage virtually crippled its mobility.

Although typically overlooked in the wider debate on Civil War tactics, the lack of horses also created difficulties for artillery on the battlefield. A battery that lost many horses was at risk of being captured by enemy infantry, and caissons and even guns were often abandoned to ensure at least some of the cannon could be saved. The generally weak condition of horses on campaign also played a role in denying the artillery the ability to manoeuvre rapidly to close range, as had been possible in Mexico. Historians have generally been satisfied to cite the technological mismatch between rifled muskets and smoothbore cannons as the reason guns did not fight at short range, but as Earl J. Hess has argued, such a solution is overly simplistic.[63] Other factors also influenced the inability of artillery to approach to canister range, including the inexperience of the gun crews and the threat of counter battery fire while the guns were limbered and at their most vulnerable.[64] Furthermore, the great weight of modern weapons such as the Napoleon gun compared to the old six-pounders used in Mexico made the rapid movement necessary to get to close range considerably more challenging. This factor, combined with rugged, difficult terrain and the generally weak condition of the horses, seriously reduced the mobility of the artillery, making fast-moving "artillery charges" as employed in the Mexican War virtually impossible. Although these latter factors are often overlooked, all of these issues contributed to a rejection of close-range tactics. Instead, longer-range and less-accurate firing was generally employed.

Lack of a long-term solution for the adequate supply of artillery horses had an effect on wider army strategy. For example, following the Maryland campaign, horses were in such short supply in the Army of Northern Virginia that entire battalions, although fully armed and satisfactorily crewed, were reported as out of action. These supply problems were still a concern months after the campaign and played a part

60. *O.R.*, vol. 29, pt. 2, 664–65.
61. *O.R.*, vol. 33, 1285.
62. Ramsdell, "General Robert E. Lee's Horse Supply, 1862–65," 768.
63. Hess, *The Rifle Musket*, 209.
64. Steven Fratt, "The Guns at Gettysburg," *North and South* 7, no. 5 (2004): 44–55.

in causing General Lee to send Lieutenant General James Longstreet's Corps to southern Virginia to ease pressure on sources of forage. By 1864 the problems of horse supply were acute, especially in the western theatre. Confederate General Joe Johnston repeatedly rejected calls from Richmond to move against Union forces on the grounds that his artillery was so short of horses that it prevented any sort of offensive. For several months Johnson blamed lack of movement on shortage of artillery animals, arguing "To make our artillery efficient, at least 1,000 fresh horses are required, even should we stand on the defensive."[65] His opposite, William T. Sherman, was experiencing similar problems. Upon taking over the Union forces in the west, Sherman reorganised his artillery to ease logistical pressure, leaving behind a number of batteries and disbanding others. In a rare example of artillery having remounts on hand, horses from disbanded batteries were placed in a reserve to be used to replace casualties in the front line. Yet even with this consolidation, during the Atlanta campaign his army received just 599 artillery horses to make up for over 1,000 lost.[66] While artillery horses were not the only logistical burden shouldered by the opposing armies, they remained one of the most persistent and debilitating limits on strategic movement, especially in the west where the ground was rugged and road networks particularly poor.

Conclusion

The problems of supplying one of the most basic requirements of field artillery in the American Civil War, the horse, were to have considerable impact. Although the effect of these problems was felt less in the Union, in the Confederacy they forced artillery to consciously weaken individual battery firepower in return for staying mobile. Unable to compete on a gun-for-gun basis, the Southern artillery considered it vital to retain operational mobility to allow massing of artillery at a particular point, even if this necessitated a significant reduction in the number of guns per battery. The root cause of these problems can be traced to the prewar United States army. Simple lack of experience in meeting supply problems on the vast scale that would be faced in the Civil War meant that there was no pre-existing remount or depot system to build upon. Even in the opening months of the conflict, lack of anticipation of how demanding the war would become meant that outdated and inefficient procurement methods continued at a time when there was an opportunity to put in place a more effective system for recruitment and, especially, for care of horses. However, it would not be until the war intensified in 1862 that both sides began to realise the importance of providing a good supply of animals, and by then it was considerably more difficult to institute a remount system as the demands were already so great. Lack of experience and foresight proved the root causes of many of the organisational problems that would affect the armies of the American Civil War, and the failure to anticipate or provide for the insatiable demand for horses offers another example of this.

65. *O.R.*, vol. 32, pt. 2, 809.
66. *O.R.*, vol. 38, pt. 1, 186.

The problems were especially acute in the armies of the Confederacy, and helped contribute to the adoption of a four-gun battery standard. Although other factors such as lack of ordnance played a role in this, maintaining a full-strength team for the battery was vital to provide mobility. Attempts to increase the number of guns in Confederate batteries were rejected on the grounds that horses could not be provided to draw the extra cannon, and indeed there were calls from the Ordnance Department to further reduce artillery strength in 1863 and 1864. Although the reduction in firepower was offset to an extent by the adoption of the battalion system, it still represented a considerable weakening of individual Confederate artillery battery strength and battlefield potential. This was in part a direct consequence of inadequate horse supply.

Horses were crucial for keeping artillery mobile during the Civil War. Any analysis of the battlefield effectiveness of the long arm can be understood only in light of the issues and problems of quality and quantity of horse supply. Field artillery of the Civil War represented a "weapon system" rather than simply a weapon, requiring not only cannon, but also crew, prime movers in the form of horses, and ammunition carriers in the shape of caissons. All of these requirements had to be met for the artillery to prove effective on the battlefield. Indeed, the difficulty of supplying horses to the batteries was almost as important as providing the cannon themselves, as without draft animals the field guns were useful only for static operations. The artillery of both sides suffered from the same basic problems of procuring and feeding their horses during the conflict, and neither side managed to solve these issues entirely satisfactorily. These problems would prove to be some of the most significant ones confronting artillerymen during the war, and although alone they were not decisive, in combination with other procurement issues, particularly in the South, they contrived to hinder the mobility and effectiveness of field artillery on battlefields throughout the war.

The difficulty in providing adequate horse supply deprived the artillery of tactical options, and was a factor that limited their ability to offer effective fire support when used in an offensive role. While rifled muskets posed an undoubted threat to gun crews, the considerable weight of modern cannon, the difficult terrain, and the weak condition of the artillery horses also played an important part in discouraging close-range action. Lacking the great mobility enjoyed by the light guns that had operated on the plains of Mexico, Civil War artillery was forced to operate in a comparatively static style. This was effective defensively but deprived the guns of some of their offensive punch, forcing them to engage at distant ranges where much of their ammunition was wasted and the damage they inflicted was often negligible. In this respect, to attribute the failure of artillery to operate at close range purely to the effect of the rifled musket represents a narrow approach that ignores the fact that field artillery constituted a multi-faceted weapon system. Instead, any assessment of the tactical performance of artillery in the Civil War has to consider the debilitating effects of inadequate horse supply, and the consequent reduction of mobility.

The implications of this would seem to offer support to the revisionist contention that the American Civil War was not necessarily a "modern" war dominated by new technology. While the increased range of infantry weapons posed difficulties for gun crews in the attack, the failure to provide a basic supply need in the form of horseflesh also limited the potential of the field artillery. In many ways the difficulties experienced by the guns seem to support the theories of Brent Nosworthy, who contends that the Civil War was a conflict fought in a transitional period.[67] Field artillery possessed longer ranged and more powerful weapons than had been available in the 1850s, but the guns were not yet so developed that they could have a decisive impact at long range. Conversely, the guns were considerably heavier than the cannon the army had used in Mexico and, given the weak condition and poor supply of horses, they proved harder to manoeuvre. Preserving horse supply became vital as the war developed, and close-range manoeuvres placed the animals at such a great risk that many artillerymen abandoned the tactic. Lacking the mobility of an earlier age or the long-range firepower of later conflicts, field artillery in the American Civil War was caught in transition.

Consequently, any evaluation of doctrinal changes and developments in the employment of artillery in the Civil War can only be seen in light of the problems of horse supply, and it is therefore necessary to amend our understanding of the continuing debates over the place of the Civil War in the historiography of "modern" warfare.

67. Nosworthy, *The Bloody Crucible of Courage*, 642–49.