The Evolution of Asian Cavalry Tactics

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Abstract

Cavalry warfare as experienced between China and the steppe nomads along its northern border in Central Asia is one of the best examples of this type of warfare. The nomads introduced the form of warfare to Asia, and the Chinese were quickly forced to adapt in order to combat them effectively. The Chinese took up cavalry warfare as a measure of competing with the nomads militarily. Various technological innovations helped to advance the art of mounted warfare in new directions from light cavalry to heavy cavalry. The conflict between the nomads and the Chinese centered around mounted combat for around two millennia. Over time, the nomads became more Chinese, and the Chinese were forced to adapt to the military pressures of the nomads to maintain their position. Many strategies, tactics, and policies were used by the Chinese to subjugate, subdue, and resist them. Ultimately, the combination of a modernizing world and firearms spelled the downfall of the nomadic tribal confederations on the steppe and thus the decline of cavalry warfare in Asia. The impact was not done being felt yet, though, as the Chinese emphasis on land warfare left their navy weak against modern naval powers from the West, as seen in the 19th century. All of these topics are discussed within this paper, and many of the complexities of the relationship between the two groups are delved into as they relate to cavalry warfare in Asia.

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-I want to thank Dr. Kenneth Swope for advising me through this project. His knowledge and experience were invaluable in guiding me through my work.
Cavalry units dominated warfare throughout most of the world from the rise of classical civilization until the modern period. The mobility provided by mounted combat as compared to conventional infantry units gave attackers the edge in many situations. As cavalry warfare evolved, various tactics, policies, and strategies were devised in order to mitigate the effectiveness of these highly mobile warriors. For the purpose of this paper, these three aspects, tactics, policies, and strategies, will all be discussed in examining the evolution of cavalry warfare, and at times will be referred to collectively as tactics. Advancements in the use of cavalry stemmed from necessity and technological advancement. Defensive strategies and policies were responses to the ever growing military threat of mounted combatants. This is true both in Europe and Asia, where the form of warfare as we know it originated.

China and its interactions with mounted units throughout history serve as an ideal place to examine the evolution of cavalry tactics as most of the advances in technology were either first used against the Chinese or by the Chinese. Many of these advances were spurred on by the conflicts between the Central Asian steppe nomads and the Chinese, who were perennially at war in varying capacities for thousands of years. The Chinese responses to these nomads ranged from adoption of techniques to diplomatic appeasement to outright conflict, all of which had significant impact on the evolving art of mounted warfare. As a result, the form of cavalry units used in Asia was heavily influenced by military engagements, topographical variances, and diplomatic relations between the Central Asian nomads and the upstart Chinese Empire.

The one constant in Chinese warfare from the fourth century BC onward was the presence of nomads. Whether they were the opposition, the ally, or even a part of the Chinese army, the nomads played a prominent role in Chinese warfare. Nomads were the dominant
warriors on the battlefield even when heavy cavalry was in use. In political terms, the nomads were very influential, having forced the Chinese to adopt strategies and policies in order to counteract the rising power and danger they posed. The constant presence of nomads perpetuated the importance of cavalry in warfare. Along with introducing the art of mounted warfare in Asia, the nomads assured its constant importance by continuing to practice and excel at it. This prowess greatly influenced the Chinese military and political structure throughout the medieval period, in turn propagating the evolution of the use of cavalry in warfare.

Before being influenced by contact with the nomads, the Chinese had previously primarily used chariots drawn by horses, but these proved ineffective against the more mobile light cavalry of the nomads and new realities of warfare within China. The unfavorable terrain within China made the widespread use of light cavalry therein impractical. Beginning in the 3rd and 4th centuries AD, the use of heavy cavalry became more important. Heavy cavalry, unlike light cavalry, requires the horseman to wear heavy armor, and ideally the horse would be armored with barding as well. The concept behind heavy cavalry is to be hard to take down while being effective offensively. The Medieval Western knight is a prime example of a heavy cavalry unit, and has been likened to a modern day tank, although the Asian version was a far cry from the western one. Heavy cavalrymen would often use lances, spears, or swords and were frequently used in charges or as shock troops. The importance of light cavalry was not forgotten, however, as light cavalry was still employed in large numbers for a very long time following the advent of heavy cavalry. If anything, the Asian conception of heavy cavalry was more of a hybrid; Chinese heavy cavalrymen were required to be skilled with a bow as well as melee weaponry,¹ and wore lighter scaled armor so as to reduce weight. In AD 311, Shi Le’s barbarian

cavalry encircled opposing Jin foot-soldiers, annihilating them. This demonstrates that both bows and tactics resembling the narge were still in use during the period in which heavy cavalry was on the rise. Several centuries later, heavy cavalry facilitated an important victory in 621 when Li Shimin used a “devastating tang cavalry charge” in order to defeat Dou Jiande, demonstrating the increasing value of heavy cavalry over time.

The switch from primarily using only light cavalry to incorporating other types of units such as heavy cavalry did not happen on a whim. The evolution of the use of cavalry in Asia was driven largely by innovations in technology. New technology allowed horsemen to more easily and skillfully work in unison with their horses. Among the inventions of the era are the saddle, stirrup, adaptations of armor, and new forms of weaponry. It is also important to note that while the smelting of iron had been discovered quite some time earlier, its use was becoming more and more widespread between the Warring States period and the Six Dynasties period. As such, all of the innovations that follow that incorporate or facilitate metal elements are more prone to take place as time goes on. While the eventual discovery of these uses of materials was inevitable, the Asian tendency towards cavalry drove the innovations for mounted combat.

The first important advance in technology for mounted combat was the saddle. Goodrich suggests that the first saddle may have existed prior to 200 BC, but demonstrates proof that they had been invented by around then. By the middle of the first century BC, the saddle was listed as common horse equipment. Goodrich also indicates the Chinese saddle that was put in use was most likely influenced by the saddles used by the steppe people, but that there is no proof of

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2 Graff, p. 49.
5 Goodrich, p. 155.
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The impact of the saddle was not immense, but it helped to facilitate mounted combat and made it easier to stay mounted for longer period of time, and certainly improved the comfort of the horseman.

The second advancement was in the form of armor. Upon the initial adoption of the use of light cavalry, metal armor was used briefly but then quickly abandoned in favor of lighter more flexible forms of defense. By the Qin dynasty the armor that the cavalry used was light and focused on trimness and efficiency. Light cavalrymen went through most of the Han dynasty without using armor very much until, in the late Han, heavy cavalry began to be used. The armor adorned cavalrymen were then the beginning of a new trend in the use of cavalry in China. Heavy cavalry was clearly important by the Three Kingdoms period as the Wei General Cao Cao was quoted as having said he had only 10 armored horses to his opponent, Yuan Shao, having 300. Albert Dien says that it is unclear whether Cao Cao was referring to armored horses and men, or simply armored men riding horses. Nonetheless, that this difference was apparent enough for Cao Cao to mention is an indication of its importance. By AD 300, new weapons were emerging as the favored weapons for and as defense against heavy cavalry. New swords and other edged weapons that were suited to mounted combat were created in addition to lances and new types of spears.

Without the invention of the stirrup, though, heavy cavalry may never have risen to prominence or even been effective. Albert Dien, who has done extensive research on the influence of the stirrup on Chinese warfare, traces the invention of the stirrup as we know it to

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7 Albert E. Dien, “A Study of Early Chinese Armor,” Artibus Asiae 43, (1984), p. 114, in Peter Lorge, Warfare in China to 1600 (Burlington, VT, USA : Ashgate, 2005). Hereafter referred to as Dien in Lorge. This is a debated date and others trace its invention as far back as the 2nd century BC.
8 Dien in Lorge, p. 88.
9 Dien in Lorge, p. 114.
10 Dien in Lorge, p. 93.
11 Graff, p. 41.
the fourth century AD.\textsuperscript{12} This seems to coincide with Graff's conception of the evolution of heavy cavalry, having stated that he feels the use of armor in mounted combat led to the invention of the stirrup, which then made armored horseback combat much easier.\textsuperscript{13} Whatever the case, in the mid fourth century there are accounts of "thousands of 'armored horses' in a single battle,"\textsuperscript{14} a number far greater than the 300 that Cao Cao said Yuan Shao used over a century earlier. Stirrups provide a sort of mounted base for riders to brace themselves on or even stand on, making mounted combat, both melee and ranged, much easier. This mobile platform allowed archers to stand more steadily while aiming, and gave those in melee range the advantage of leverage. This increase in ease of use is a logical explanation for the increased usage of heavy cavalry in Chinese warfare.

As can be evidenced by the advent of heavy cavalry, the use of mounted warfare evolved over time. On the whole it was a gradual process, only evolving as political and technological changes warranted. Horses were earlier used in warfare to draw chariots. In 714 BC, chariots and infantry were the main components that comprised a Chinese army.\textsuperscript{15} Chariots worked fine inside of China and there was no need for the Chinese to develop cavalry units until they began to fight against the nomads. It is believed that the nomads began to use cavalry somewhere between 650 and 350 BC,\textsuperscript{16} but it is difficult to say with any certainty as the nomads did not record their own history, and what we know of early nomads comes from the civilizations that came into contact with them. The Chinese do not appear to have developed cavalry on their own because Sunzi's \textit{Art of War} did not mention cavalry warfare.\textsuperscript{17} As noted, the light cavalry of the

\textsuperscript{12} Dien, p. 36.
\textsuperscript{13} Graff, p. 42.
\textsuperscript{14} Graff, p. 42
\textsuperscript{15} Creel, p. 288-289.
\textsuperscript{16} Graff, p. 22.
\textsuperscript{17} Goodrich, p. 147.
steppe people proved to be too mobile for the Chinese to effectively combat it. The Chinese, as a result, adopted the use of light cavalry in 307 BC. King Wu Ling of Chao is regarded as having been the first Chinese ruler to use cavalry.\textsuperscript{18}

From that point on, cavalry became an increasingly more important part of Chinese warfare. This importance can be traced over time by the number of cavalry troops used at certain battles. In 307 BC, when the Chinese are believed to have first used cavalry troops, there is record of the use of 13,000 cavalry, 1,300 chariots, and 150,000 infantry.\textsuperscript{19} By the second century BC, no record was made of the number of chariots in use, demonstrating their declining importance in warfare.\textsuperscript{20} At the same time, the number of cavalry in use during engagements was numbered somewhere above 50,000.\textsuperscript{21} This trend continued, and by the late fourth century AD Fu Jian used 270,000 cavalry and 600,000 infantry in his massive army.\textsuperscript{22} At some point, though, the importance of numbers in cavalry appears to have dwindled.\textsuperscript{23} In the year 500, Xiao Yan used only 5,000 cavalrymen and 30,000 infantry in his revolt.\textsuperscript{24}

The evidence provided by the numbers of cavalrymen used in Chinese warfare seems to coincide with trends in the overall importance of light cavalry. The nomads appear to have had a smaller military throughout this time than the Chinese. They relied on their individual skill and teamwork in order to combat their Chinese opposition. Lacking the skill necessary to compete on a one to one basis, the Chinese simply used the large number of capable men at their disposal in order to combat the nomads. The impact of mobilizing these massive numbers of men for military service however, proved to be taxing on China both economically and socially. When

\textsuperscript{18} Di Cosmo, p. 134.
\textsuperscript{19} Graff, p. 22.
\textsuperscript{20} Graff, p. 29.
\textsuperscript{21} Ibid.
\textsuperscript{22} Graff, p. 67.
\textsuperscript{23} It is also possible that the numbers recorded in later times were simply more accurate than in previous generations.
\textsuperscript{24} Graff, p. 88.
the use of heavy cavalry began to prove to be effective, the Chinese quickly latched onto it. They appear to have recognized what type of unit was advantageous in certain situations, and adapted as they felt necessary.

Terrain also appears to have played an important role in deciding what types of units were most useful to the Chinese in warfare. During the Warring States period, the chariot proved to be quite effective. Warfare during this time period occurred mostly within China itself and focused on pitched battles. The switch to light cavalry was necessary in order to compete with the nomads and their unconventional tactics on the open terrain in the north. During the period of conflict with the nomads to the north, the numbers of men used for cavalry escalated steadily. Around AD 200, when the Three Kingdoms period began, the combat primarily took place within China again. The terrain of China was still conducive to effective light cavalry use, but it led to favorable conditions for more chariot-like units as well. This change in terrain appears to have proven conducive to the adoption of heavy cavalry units and new tactics for mounted warfare. The Chinese quickly recognized this and adapted their technology to meet the needs of this new type of military unit.

Prior to 307 BC, horses were predominantly used in Asian warfare in pulling chariots, although their use even in this capacity was limited. Following this time, in which increased conflict with the steppe nomads created a need, horses were adapted to warfare in the same manner as the nomads: as light cavalry. Six hundred years later, the evolution of cavalry tactics had made its sweep, and mounted units with full armor were being employed in China. The reasons for these changes range from diplomatic necessity, new inventions, appropriate terrain, and military advantage, all related directly to the conflicts between the Chinese and the Central Asian steppe nomads.
It is important to grasp who precisely is being referred to as the steppe nomads in the analysis to follow. The nomads of Central Asia are commonly referred to as “barbarians” by historians and non-historians alike. As Jonathan Karam Skaff argues regarding Tang frontier generals and military men, this term isn’t really apt to describe them. Most of these men had been at least partially Sinicized, and many had been almost wholly incorporated into Chinese culture. I would argue that, increasingly as time goes on, this appellation of not calling them barbarians may be passed along to the nomadic people of the steppe themselves. Initially, they were merely a military threat that served to disrupt the Chinese empire. As a result of this, however, the Chinese Empire was compelled to interact diplomatically and culturally with the nomads, at times even capitulating to their domination for centuries at a time. Clearly, not all of the nomads were directly influenced by the rule in China by a few nomads, yet the overall effect was felt throughout the steppe. As time wore on, an ever growing number of capable and savvy tribesmen arose to challenge the autonomy of China, whether they intended to or not, with varying degrees of success. Furthermore, the nomads that succeeded in conquering all or part of China demonstrated acuity for governance that should surpass the expectations of any “barbarian” society. As such, it seems unfair to refer to them with a term, and its innate negative connotations, that belittles their proven abilities.

In examining the influence of the steppe people on the developing Chinese state, it is first necessary to understand what made them militarily strong. These people obviously lived on the steppes of Central Asia and were nomads. They lived on a diet consisting mostly of meat and animal byproducts, such as milk, because vegetation was sparse on the steppe and their nomadic wanderings did not afford them the luxury of agricultural produce. They raised domesticated

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animals, predominantly sheep, cattle, and horses. Of these animals, the horse was the most important to the nomads. Young nomads learned to ride from an early age, first by riding on sheep and then moving to a horse when they were large enough. They also learned the art of hunting as it was necessary in order to sustain a predominantly all meat diet. The most important tool the nomads used for hunting was the bow from which they fired arrows at their prey from horseback. Children would begin to use the bow as soon as they were able, shooting small game, which led to them being adept with the bow and more than strong enough to pull the draw line with ease. Writers throughout time wrote about the Inner Asian nomads in nearly identical terms, allowing us to apply what is said in one time to that of another with relative certainty. Sima Qian asserted that “all the young men are able to use a bow and act as armed cavalry in time of war.” Later, in the thirteenth century, John de Plano Carpini wrote similarly of the Mongols, showing that little had changed of life on the steppe:

“The men do not make anything at all, with the exception of arrows, and they also sometimes tend the flocks, but they hunt and practise archery, for they are all, big and little, excellent archers, and their children begin as soon as they are two or three years old to ride and manage horses and to gallop them, and they are given bows to suit their stature and are taught to shoot; they are extremely agile and also intrepid.”

These two components, horses and bows, were not enough to merit ultimate success for the nomads. They also had a social characteristic that enabled them to excel at hunting: extreme discipline. Denis Sinor explored the gamut of sources on this subject in establishing that group discipline was paramount among the nomads. He demonstrates that the Chinese, Persians,

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27 May, p. 631.
28 Sima Qian in May, p. 630.
29 John de Plano Carpini in May, p. 630.
Byzantines, and Hungarians all had reverence for the discipline possessed by the nomad armies. The broad-ranging geographical context of these accounts also lends to the notion that these traits are shared among nomadic confederations. Additionally, Sinor quotes Dominican and Franciscan monks, noted for their own discipline, as admirers of the nomads. Discipline helped the nomads to fight effectively as a group without any need to worry about someone not fulfilling their combative role.

Aside from being raised with their bows, horses and possessing excellent discipline, the Central Asian steppe people excelled at cavalry warfare for other reasons. The nomads had several tactics that they used for many centuries that proved effective time and again. The most important aspect of these tactics is that they were originally used by the nomads for hunting, and then they applied them to warfare. The Parthian shot was one such tactic in which the horseman would ride directly away from something or someone that was chasing him, then turn completely around on his horse and fire an arrow at it while still running away. The impact of this was massive, as it allowed the nomads to continue to attack while they were fleeing or feigning a retreat. This was especially important as another of the prominent tactics used by the nomadic light cavalry was to retreat into the desert or steppe if they were attacked, exhausting their enemies as they tried to keep pace. Eventually, the nomads would encircle their exhausted pursuers and fire arrows into them in their weakened state. This method was particularly useful when the nomads raided the borders of Chinese territory as it allowed for a quick and effective escape. In its most basic form, the act of encircling the enemy and firing arrows upon them is

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31 Sinor, p. 136-137.
32 Ibid.
33 May, p. 622.
34 Grousset, p. 23.
referred to as the *nerge*. This was adapted to warfare in several ways, as Timothy May has noted. The nomads would wrap the wings of their army around the opponent at times to encircle them, trapping them for easy pickings. Another technique for applying the *nerge* was to lure a column of an enemy army into such a circle, leaving a gap at their rear as an apparent escape route. If and when their enemies decided to flee, they would collapse their circle and pursue them, picking them off as they followed. As May also notes, these types of tactics were effective enough that skilled light cavalry, such as the nomads, were able to defeat armies that greatly outnumbered them due to their mobility, teamwork, and discipline. As Sinor has pointed out, these tactics appear to be common to nomadic peoples throughout time, employed by the Mongols of the Yuan dynasty as well as by the Xiongnu. He has found similar descriptions of these tactics and arrows falling upon their victims that were said to be more plentiful than hail during a storm. These are the techniques that the Central Asian nomads excelled at, and are also what made them so effective for such a long time. Since they used these techniques growing up in order to survive, virtually every adult male was a master of mounted warfare.

While these tools were enough to make them militarily powerful, the nomads of the steppe initially lacked the political unity necessary to pose a threat to any major power in the region. The various tribes of steppe people frequently fought one another, preventing them from mounting any significant military incursions into other territories. This changed in 209 BC when the Xiongnu arose to political supremacy on the steppe, naming their leader the “Majesty

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35 May, p. 619.
36 May, p. 620.
37 Ibid.
38 Sinor, p. 140.
Son of Heaven."\(^{40}\) The Xiongnu may be likened to the Huns that invaded Europe in the fifth century AD, as they are both thought to have descended from the same ancestors.\(^{41}\) Similar to the actions of the later Huns against the Roman Empire, the Xiongnu made deep incursions into Chinese territory. The issue that held the steppe nomads back was their lack of long term unity. The nomads existed in tribal confederations with the most powerful group dictating the action of the whole. Authority was frequently challenged, and such was the case when civil war greatly weakened the power of the Xiongnu,\(^{42}\) and in AD 48 the Xiongnu actually split into Northern and Southern entities. The Northern Xiongnu remained opposed to the Chinese while the Southern Xiongnu were incorporated into China and were permitted to live within Chinese borders.\(^{43}\) Just over a century later, the Northern Xiongnu were defeated and absorbed by another group of steppe nomads called the Xianbei.\(^{44}\) This trend of alternating unity and infighting among the nomads remained the status quo for the greater part of Asian history, and true unity was only established much later in the time of the Mongols. The nomads that settled in China gradually became more Sinicized over time,\(^{45}\) ultimately becoming Chinese themselves in every sense of the word. They intermarried with the Chinese, thus integrating genealogically and culturally. They also were incorporated heavily into the military, earning their place within Chinese society.

The Chinese, despite being inferior horsemen, were not inept at the art of mounted warfare. They adopted the use of cavalry for both offense and defense, as it was necessary to be


\(^{41}\) Grousset, p. 19.

\(^{42}\) Grousset, p. 37.

\(^{43}\) Grousset, p. 39.


\(^{45}\) Graff, p. 48.
mounted and mobile in order to keep up with the nomads.\(^{46}\) Despite increased mobility gained by using light cavalry, the Chinese were hampered by their dependence on slower moving supply lines. Over time, the Chinese became more efficient at it and began to make attacks deep into barbarian territory, allowing the Chinese to build walls or other installations behind them in order to further combat the nomads. The Chinese custom of building walls, however, was not originated in order to help combat the nomads, nor was it used exclusively for this purpose.

During the Warring States period, various rulers built walls within China in order to help maintain borders, mount attacks, and defend against invasions from other territories.\(^ {47}\) Having used this tactic for quite some time, it was only natural for the Chinese to adapt their walls to the new situation involving the nomads.

As the contact between the nomads and the Chinese increased over time, so too did the influence of the nomads on Chinese. The light cavalry units of the nomads donned trousers, tight sleeved shirts and boots by 307 BC,\(^ {48}\) making movement and the shooting of arrows more efficient. As the Chinese fought with the nomads, they realized the advantages of these garments and began to wear them as well. Previously the Chinese had worn robes, which did not provide adequate room for movement.\(^ {49}\) The Chinese also adopted some of the more decorative features of the barbarian attire, including belt buckles and plumed caps with three tail feathers in them. This willingness to adopt the garb and customs of the nomads grew over time, expanding into other facets of Chinese life. In later times, the Chinese on the frontier adopted the lifestyle of the Sinicized Northern Wei at garrisons, living a life more culturally akin to that of a nomad than to

\(^{46}\) Di Cosmo, p. 134.  
\(^{47}\) Di Cosmo, p. 139.  
\(^{48}\) GrafT, p. 22.  
\(^{49}\) Grousset, p. 20.
Chinese. This propensity towards adoption of steppe customs paved the way for future policies regarding the nomads.

Politically, the Chinese responded differently to the nomads at different times, largely depending upon the relative strength of their militaries. When the nomads and the Chinese military first began to clash, the Chinese had difficulties dealing with the cavalry of the nomads. This was in part due to the skill of the nomads, but it was even more a product of the type of units being used by each side. The Chinese had developed a military system that suited the climate of China proper and was effective there. The Chinese had used horses to draw war chariots, as they were well suited to the terrain and type of combat experienced in China at the time; although, chariots made up a small portion of the military with infantry comprising the bulk. The nomads developed their style of military for the steppe. They initially had very little contact with one another because there was a sort of buffer region to the north of the Chinese states that served to keep them from meeting. When the Chinese began to expand northward, however, they removed these buffer regions and began to have direct contact with the nomads. The nomads enjoyed a considerable advantage in mobility and did not have to rely on supply lines because they could live off of the animals they had with them. The immediate response of the Chinese was to rethink the composition of their military, adopting light cavalry forces similar to that of the nomads. This was not necessarily a product of their desire to adopt the cavalry style of fighting so much as it was a necessity for the Chinese to be able to make effective maneuvers against them, as the mobility of the barbarian cavalry afforded numerous advantages over the Chinese military.

Then, possessing the military capability and mobility to effectively combat the nomads, the Chinese were able to create policies for dealing with them. One of the primary policies for

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50 Although imperial Chinese militaries frequently did adopt new tactics and technologies to gain strength.
handling nomads was to use the Chinese light cavalry forces to drive the nomads back into the steppe, and then to build a wall behind them to push the border forward.\textsuperscript{51} This proved to be effective for quite a while, but war within China proved to be an issue. Shortly after the civil war that resulted in the rise of the Han Dynasty, the Xiongnu were able to penetrate deep into Chinese territory and even laid siege to the capital in 201 BC.\textsuperscript{52} As mentioned previously, the Xiongnu had just united the people of the steppe in 209 BC, making the timing of the Chinese civil war particularly detrimental. It is impossible to say whether or not the Xiongnu would have made such an impact in China militarily at this time had there not been infighting; but, their presence in China was felt nonetheless. Liu Bang, the first emperor of the Han, was forced to marry off a Chinese princess to the Xiongnu in order for them to break the siege,\textsuperscript{53} beginning a policy of appeasement towards the nomads.\textsuperscript{54} The appeasement policy, called heqin, consisted of a peace treaty through marriage with the enemy. This came at a time in which the barbarian army was more powerful than the Chinese one, and thus, the Chinese preferred to make concessions as opposed to fighting openly.

The Han emperor Wudi changed this, though, strengthening the Chinese government and military, levying new taxes that helped fund the effort to push back the nomads. Wudi employed the earlier system of dealing with the nomads, sending out large cavalry columns to push them back. Between 127 and 111 BC, Wudi built many military commanderies and prefectures along the northern borders of China to help keep the nomads out.\textsuperscript{55} This was no small task as sending standing military units to faraway regions of China was very costly both in terms of manpower

\begin{footnotesize}
\begin{enumerate}
\item Grousset, p. 27.
\item Grousset, p. 27.
\item Graff, p. 28.
\item Grousset, p. 35.
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and resources. Among the ways that Wudi dealt with this resource problem was having the government monopolize the salt and iron industries. This served to consolidate wealth and power in the government’s hands, making it easier for Wudi to protect his kingdom.

Later in the Han Dynasty, the Chinese military was in a stronger position than the nomads, and was actually able to influence the nomads as a result. One policy of the later Han was to "use nomads to attack nomads." In more familiar Western terms, this policy is similar to that employed by the Romans against the various tribal confederations along their northern borders. This served the Chinese well as it kept them from expending resources directly on the problem and weakened their enemies by pitting them against one another. In one case, the Chinese sent a Xiongnu king who was revolting to attack the Xianbei, in Manchuria, where he died - "a disaster from which the northern Xiongnu were never entirely to recover."

Another policy of the late first century AD was to try to recreate the buffer zone that had previously existed between the Chinese and the nomads. The best example of this was the military commander Ban Chao, who spent several decades of his life attempting to achieve military rule of the Tarim Basin. He took control of border towns that the Chinese did not rule directly so that they would absorb the brunt of any barbarian incursions. This policy is similar in practice to other buffer zones that have been created in various places around the world.

Eventually, the Northern Xiongnu fell to the Xianbei. When the Xianbei gained preeminence on the steppe, the Chinese struck peace with them, lasting until the Three Kingdoms period (220-280) when there was no united China to form policies for dealing with the nomads. An unfortunate effect of the prolonged period of conflict with the Northern Xiongnu was that

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56 Grousset, p. 44.
57 Grousset, p. 46.
58 Grousset, p. 42-47.
59 Grousset, p. 46.
generals and military commanders were able to consolidate power over time. When they no longer had an external enemy to make war with, they turned inward and began several centuries of disunity by dissolving Han rule. This was also a product of a weakening central government in the late Han, but without the constant pressure of the nomads, the Chinese warlords would never have had the power and influence necessary to end Han power once and for all.

As mentioned above, the Chinese used the nomads occasionally. They had different uses for them at various times, although almost all of them were military in nature. When the two groups first met in the centuries preceding the unification of China by the Qin (221 BC), neither was particularly dominant and as such they would fight with or against one another based on the situation. Sometimes the nomads would fight for the King of China, at other times they would fight against him. Later, in the time of Emperor Wudi, the Chinese were in direct conflict with nomads. In order to augment his military power, Wudi employed foreign cavalry troops from various nomadic tribes. This trend continued and became more pronounced when the Southern Xiongnu were settled inside of China. The Chinese used the aforementioned policy of using “nomads to attack nomads,” preferring to let the nomads do their dirty work for them.

Cao Cao began the trend of using nomads as his primary military component when in AD 207 he conquered the Wuhuan and moved them to his territory within China. He divided them into five hordes that were directly loyal to Cao Cao and the Wei state. These troops were regarded as the “best cavalry force in all of China,” setting the precedence for future Chinese commanders to utilize the powerful nomads. In 304, the armies that defeated the Prince of

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60 Graff, p. 31. 
61 Creel, p. 213. 
62 Graff, p. 39. 
63 Grousset, p. 44. 
64 Graff, p. 40.
Chengdu were considered to be formidable due to their Wuhuan and Xianbei cavalry. As time went by, armies relied more and more upon nomadic cavalry units. Ultimately in the Six Dynasties period, steppe people constituted the backbone of the army as cavalry units, while the Han Chinese were used mostly as foot-soldiers, for hauling, and building. The continued success of the barbarian cavalry demonstrates the importance of their presence in China.

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65 Graff, p. 46.
66 Graff, p. 60.
As noted above, the foundations of cavalry warfare had been laid by the 4th century AD. Light cavalry and heavy cavalry were the standard by which most militaries were judged in Asia through most of the medieval period, and because of this it became a necessity for states to develop effective systems of both employing and defending against cavalry units. Throughout most of this period, as in the previous period during which cavalry warfare rose to prominence in Asia, the two major powers were China and the nomadic confederations of Central Asia. Many of the major developments in tactics regarding mounted warfare were either developed or best demonstrated in these regions once again, making it possible to look at the conflicts between the two. This helps to gain an understanding of the evolution of cavalry tactics at large in Asia throughout this period. The Chinese possessed greater technology which they employed against cavalry units. Raudzens argues that the technologies of the crossbow and gunpowder weaponry served to stop the widespread disruption of China by the incursions of the steppe nomads.¹

While these two technologies were obviously of great importance, it is my contention that the Chinese use of cavalry tactics and effective policies, defensive strategies throughout this period proved to be more effective in combating the nomads. Various tactics were devised based on what was available in terms of technology, resources, manpower, and topography. These tactics, at their most basic, take the form of controlling both people and resources for war, including horses themselves. In other cases they take the form of the outright uses of cavalry tactics in the field of battle in order to gain a military advantage. Further applications of tactics involve the mobilization of civilian manpower and the devising and construction of defensive

¹ George Raudzens, “War-Winning Weapons: The Measurement of Technological Determinism in Military History,” The Journal of Military History 54 (Oct 1990), p. 406. These technologies clearly played a large role in holding the nomads back, but their invention alone was not enough to fend them off. Raudzens’ article primarily focuses on the West, and this singular assertion about Asian warfare has little evidence in his argument to substantiate it. His lack of evidence and/or desire to back up this claim serves as a point of contention.
methods to impede the effectiveness of cavalry units. Finally, as new challenges arose
technologically the uses of and defenses against cavalry must necessarily change. The following
analysis will examine the most effective and innovative uses of tactics, strategies, and
adaptations that were made in order to either survive or achieve political hegemony. The
Chinese always desired hegemony, but were forced, at times, to settle for mere survival.

Throughout the entirety of the time that cavalry units dominated Asian warfare, the
nomads enjoyed one very clear advantage in terms of military resources: they had horses that
were better suited to such warfare than anyone else. As Creel notes, horses preferred for war
were superior in the qualities of “speed, agility, and stamina” to ordinary horses. Horses that
are best suited to warfare are generally large; but, those used by the nomads appear to have been
smaller in stature than the usual conception of a warhorse. He goes on to say that:

“...the successful use of cavalry in war required three things: the mastery of the
technique of riding and using the paraphernalia of cavalry warfare; the technique of
training horses for war; and the breeding of, or the acquisition of, horses suitable for
mounted warfare, which must possess qualities not found in the ordinary horse.”

While the Chinese were not inept in any of these regards, they were, in all aspects, inferior to the
steppe nomads. As noted in the previous section, the nomadic lifestyle of the steppe demanded
excellence in terms of the riding techniques and using the paraphernalia of cavalry warfare. This
also resulted in the adequate training of the horses, and out of necessity led to the breeding of
ideal horses. The nomads engaged in selective breeding practices in order to ensure that they
had an ample supply of proper horses. Frequently the nomads would castrate horses that were
not deemed adequate for warfare in order to limit the gene pool to desirable horses and eliminate

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3 Ibid.
4 Creel, p. 649.
more unsavory traits from their horse population. In contrast, China’s more sedentary agrarian culture meant that they were, by and large, not as well versed in the techniques necessary for cavalry warfare. Additionally, they did had substantially less time invested in the training of their horses as they did not live with their animals constantly. The final factor that hampered the Chinese in cavalry warfare was that their climate was not as well suited to the raising of horses. They could raise horses in neither the quality nor the quantity that the Central Asians could, and because of this they often found themselves trading with their enemies in order to obtain quality horses for cavalry warfare. Thus, from a practical standpoint, the Chinese were at a tremendous disadvantage from the start with regards to the nomads. The nomads commanded a greater proficiency and control over the resource of horses throughout the age of cavalry warfare in Asia.

Given the culturally ambiguous nature of living in the northern regions of China during this time, where there were no clear boundaries as we know them today between steppe and China proper, many rulers attempted to bring the two groups of people together. The Chinese simply adopted some of the customs of the nomads, often of their own volition, while the nomads tended to change much more drastically, becoming increasingly Sinicized over time. The general goal of unifying these groups was to help solidify control of the region and limit conflict while also drawing upon the military expertise of the steppe. Through pacifying this region, rulers could more effectively govern their lands as a whole, since they no longer needed to devote resources to keeping the peace. The Northern Wei emperor Xiaowen instituted a policy of changing Xianbei surnames from having multiple syllables to the Chinese norm of single syllable surnames in 493. This served to make his tribesmen more Chinese culturally, as they no longer were distinguishable based on their names. The Chinese emperor Tang Taizong

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5 Creel, p. 654.
implemented the strategy of assimilating conquered steppe tribes into his military and using them for further actions on the steppe. Assimilation militarily also led to assimilation culturally and politically over time, and continued the overall trend of a melding of the two peoples. While it took them quite some time in China, the Mongols of the 13th century employed the tactic of attacking the leadership of their opponents in order to effectively take over the infrastructure of states that they conquered. Each of these strategies was used in order to at least temporarily achieve the goal of political hegemony over the regions in question.

Unfortunately for the nomads that managed to conquer part or all of China, their Sinicization ultimately and inevitably led to their falling out of touch with the people of the steppe. This was a constant issue for steppe rulers, and even the Northern Wei had to deal with the Rouran tribe while they ruled northern China. In many cases, it would only take a few generations for nomads ruling in China to experience a disconnection with the contemporary steppe people. Some nomads, such as the Turks, rather than conquering China opted to attempt to undermine the power of the most dominant faction in the region that could oppose their power. Initially, the Tang were weak, and the Turks gave them 2,000 horses. Later, as the Tang were rising in political and military power, the Turks withdrew their support and gave it to other competing groups. It is likely that the Turks used this strategy to ensure that no one political entity in the region had the power to eliminate them, not necessarily to achieve or maintain superiority.

8 Peter Lorge, *War, Politics, and Society in Early Modern China, 900-1795*, (London ; New York : Routledge, 2005), p. 68. This strategy worked throughout most of their campaigns, but it also led to popular resistance movements that outlasted the governments that had been toppled, such as in Sichuan within China.
9 Graff, p. 98.
10 Graff, p. 185.
Over time, trends in military composition developed. Under the Northern Wei, the core of the military remained the North Asians, while the Chinese continued to be the secondary troops.\(^{11}\) Following the fall of the Northern and Southern dynasties, during the time of the reunified Sui and Tang dynasties, cavalry comprised a minority of the overall military because horses were scarce in the agrarian Chinese empire.\(^{12}\) The ratio of infantry to cavalry during the Sui is believed to have been 2:1.\(^{13}\) Concurrently, there was a large shift from the use of light cavalry to a cavalry force primarily comprised of heavy cavalry. Light cavalry did not disappear in China, but they were not as useful in as many situations. It is important to realize that during this time period, the Chinese had just conquered the steppe nomads who had dominated them for centuries, and because of this the Chinese power relative to the steppe was greater than it had been. Much of the fighting during this time was within China, where the topography favored the use of heavy cavalry as shock troops. The correlation between the shift from fighting on the steppe to fighting in China and the decline in cavalry use is also related to the terrain. Cavalry was ill-suited for fighting on Chinese soil, and thus cavalry was not used as widely.

Cavalry was even less effective in southern China due to topography. South China is filled with water systems and has very few open plains in which to raise horses. The result was that south China had an even smaller number of cavalry units, and they rarely played as large of a role in the outcome of battles as a good naval force did. Even around AD 500, the rebel Xiao Yan in the Yong Province along the Han River had a force that consisted of a mere 5000 cavalry units to his 30,000 infantry.\(^{14}\) Given that the ratio of 2:1 infantry to cavalry was considered small an entire century later, this even smaller amount of cavalry in military composition

\(^{11}\) Graff, p. 97.
\(^{12}\) Graff, p. 176.
\(^{13}\) Graff, p. 148.
\(^{14}\) Graff, p. 88.
demonstrates the limitations of cavalry warfare in the southern part of China. Many nomadic conquerors experienced first-hand the weakness of cavalry units in the region as only two nomadic confederations ever successfully conquered it.

In order to more effectively deal with rebellions within China and incursions along the borders, a new system of military organization was instituted in the provinces during the Tang. Previously, armies were stationed in the heart of China and had to march to the periphery in order to take action. In the new system, each province had its own military headquarters and a system of garrisons. In the garrisons, cavalry accounted for approximately 10% of the troops, while in the headquarters they made up closer to 50% of the troops.\textsuperscript{15} According to Graff, the higher concentration of cavalry units in the headquarters was meant to provide an effective mobile strike force that could move to the periphery quickly in order to support garrisons. This huge leap forward in military organization helped to strengthen the periphery and limit the disruptions caused by nomad invasions and rebellions alike.

The practice of adopting the tactics and technologies of one’s enemies in Asia continued throughout this time. The Tang demonstrated their willingness to use whatever was necessary in order to combat the Turks of the steppe when they abandoned their usual style of warfare in favor of launching an all out assault on Xieli’s\textsuperscript{16} camp under Li Jing around 630. Li Jing took a page out of the Turks book of tactics when he organized a force of 10,000 cavalry to charge directly into Xieli’s camp in the midst of thick fog.\textsuperscript{17} This proved to be effective, as Xieli retreated and his forces were decimated at the camp he left behind.

\textsuperscript{16} A general of the Turks.
\textsuperscript{17} Graff, p. 188.
When the Mongols invaded China during their conquest, they were forced to adopt the use of naval warfare in order to effectively combat the Chinese in southern China. Had they not done this, they likely would have ended up failing in the same way that the Xianbei and Jurchens had before them. The Mongols proved to be incredibly savvy in the adoption of new technology and tactics, employing both Chinese and foreigners alike in order to gain the edge. Later, during the rise of the last conquest dynasty, the Qing, the Manchus were forced to take up the use of cannons to compete against Chinese firepower both in the field and at fortified locations. Before using artillery weapons, the Manchus were inferior to the Ming in siege situations, but still thrived in field engagements. After the adoption of Western style artillery, they were able to defeat the Chinese both in siege battles and in the field. As Kenneth Chase argues, the overwhelming focus on cavalry in the region stunted innovation elsewhere. Other civilizations, both in Europe and Asia, evolved other aspects of warfare more rapidly than the Chinese. However, throughout the age of mounted warfare in Asia, the dominant power in China tended to be the one that was most willing to adapt to new technology, tactics, and topography in order to more effectively combat their opponents.

The primary reason for this constant need for adaptation was the ever evolving use of cavalry in warfare. As time wore on, more and more elaborate tactics and formations were devised with the use of cavalry in mind. The tactics of the nomads remained largely unchanged while the Chinese had a more diverse military composition that necessitated the new formations. The chief strength of mounted warfare was its speed and mobility. Many of the

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18 Lorge, p. 62.
19 Both groups had conquered large portions of North China, but failed to penetrate into the southern region.
20 Lorge, p. 140.
22 The nomads, as discussed in the first section, remained largely the same organizationally and logistically from at least the Han to the Yuan dynasties, meaning their military composition did not vary enough to warrant new formations.
applications during specific battles utilized this speed advantage over normal troops in order to gain a competitive advantage. In 576, Emperor Wu of Zhou was besieging the walled city of Pingyang. He surrounded the city with his main force and then sent his contingents to fan out “in an arc to the north and east to cover the besiegers against a possible relief effort.” While surely not all of these troops that fanned out were cavalry units, the use of this style of defense is usually primarily carried out by mobile units, such as cavalry. In the early 7th century, Li Shimin demonstrated a brilliant use of tactics involving his highly mobile cavalry. He held his troops back in defense in order to force his opponents, the Xia army, to stand in formation for hours without actually fighting. His aim was to make them uncomfortable, and he succeeded in this by around noon.

Perceiving the discomfort and disorganization in the enemy’s ranks, Li Shimin now ordered a detachment of 300 cavalry to ride along the front of their formation and test their reaction. When the Xia troops wavered and drew back, the Tang commander [Li Shimin] ordered some of his cavalry units to move to the south and then east in order to turn the enemy’s left flank.24 The Xia commander then decided to withdraw his troops to a more defensible position; but, this action caused his forces to break their linear formation. Reacting to this, Li Shimin personally led “a strong force of light cavalry,”25 and crushed the retreating Xia army. Li demonstrated a masterful understanding of the possible effects of cavalry units on enemies and was able to move his opponents as if in a game of chess in order to gain the advantage that he needed to win. Li Jing of the Tang also seized upon the mobility of cavalry when he charged into the Turk camp of

23 Graff, p. 113.
25 Ibid.
Xieli in the fog. He realized that non-cavalry units would be too slow for him to take the camp by surprise, so he left them behind and attacked with only his more mobile cavalry units.\textsuperscript{26}

The successes of innovative uses of cavalry such as these ultimately led to widespread application of policies that promoted the use of such tactics. As demonstrated by the exploits of Li Shimin, commanders in the Sui and Tang periods used cavalry in battles for their mobility. Their strategies for using cavalry often involved intimidation, quickly exploiting openings in enemy defenses, and scouting.\textsuperscript{27} As discussed earlier, the new system implemented around the mid 8th century involving garrisons and headquarters in the provinces was an institutionalized application of the mobility of cavalry units, intended to capitalize upon their superior mobility in times of defensive need. This institutionalization demonstrates the acknowledgement and acceptance of the strengths of cavalry warfare by administrative powers previously only applied on the field of battle by specific commanders.

The nomads of the steppe relied on the mobility of cavalry as well, frequently crossing the ill-defined Chinese borders to attack and loot. This served to strengthen and enrich the nomads as well as to unsettle and weaken the Chinese. The Kitan Liao, in particular, used this strategy along the northern border of the Hebei province. The goals of the Liao, according to Nap-Yin Lau, were to exhaust Chinese military forces, to deprive the Chinese of a “springboard to invade the Liao,” and to loot as much as they needed in order to pay for the costs of “executing the first two aims.”\textsuperscript{28} They organized what Nap-Yin Lau refers to as small operations that consisted of 60,000 cavalry into the Chinese countryside, ignoring fortifications so as to

\textsuperscript{26} Graff, p. 188.  
\textsuperscript{27} Graff, p. 176.  
avoid heavy casualties and resistance. The drawback to such a strategy is that, since nomad cavalry troops live off of the land, they often could not return through the same passes of land that they had looted on the way into Chinese territory. In heavily fortified Hebei province at the time, this turned out to be a logistical hindrance on occasion. When the Chinese employed similar tactics of crossing the border in order to repel further invasions, it often resulted in favor of the nomads for logistical reasons that will be discussed later. Suffice it to say, the main issue with trying to extend power into the steppe for the Chinese was that all of the nomads’ property was mobile and could simply be moved away from the coming Chinese troops. The Chinese enjoyed no such luxury when the steppe armies invaded; being a settled, agrarian society, their property was not mobile and was thus subject to the depredations of the nomads. This uneven playing field in terms of the success of incursions can be summarized for better understanding: short wars favored the Chinese because they would, in theory, be able to penetrate and unsettle the nomad populations, forcing them to move, while longer wars favored the nomads because they had the ability to move out of harms way. Short wars also limited the amount of damage that the nomads could cause in the Chinese countryside.

The mobility of cavalry units proved to be very successful in the defense of individual fortified locations and borders, as well. One good example of this in Asia is in Hebei province around the same time that the Liao were repeatedly invading, right around AD 1000. The Chinese were building a long hydraulic defense system of ditches filled with water that connected the fortified cities of the region. Along this system they deemed it necessary to build forts and garrisons in order to maintain a military presence on the portions that were distant from

29 Lau, p. 191.
30 Lorge, p. 55.
a city. During the construction process, the Chinese mobilized their military, first to protect the workers and then afterwards manned these garrisons. The practice of using a mobile strike force to protect the area surrounding a fortified location was neither new nor unique to Asia. Pericles had employed this tactic in the 5th century BC against the Spartans when he built his long wall connecting the city of Athens to its port city of Piraeus. The Athenians brought the citizens into this walled region from Attica, the surrounding countryside, in order to protect them. This had the detrimental effect of allowing the Spartans to ravage Attica; so, Pericles put together a mobile strike force of mounted warriors to go out and combat the Spartans. His strategy was effective until disease within the walls ravaged the Athenians’ ability to effectively mount further resistance. This tactic was also later applied with great success in Japan by the daimyo Oda Nobunaga when he built his Azuchi Castle, completed in 1579. Previously, Japanese castles had occupied mountainous terrain that made them difficult to access. Nobunaga changed this practice by building Azuchi on a simple hill in the middle of the plains. This allowed him to bring his defenders, the samurai, into a sort of castle town around the castle. The samurai could then easily move out to defend the castle with their mobile strike force comprised of cavalry units and riflemen.

Occasionally, conventional forms of defense against the nomad cavalry troops simply were not effective. The reasons for this varied from outdated tactics to opposing superior forces to logistics. When this happened, the best way to address the issue was to develop new tactics for the specific situation that would help to gain the advantage. For example, in the southern regions of China where there were fewer horses and the military was largely comprised of

32 Lau, p. 189.
33 Sviatoslav Dmitriev, “Lecture on The Development of Greek Civilization,” History class.
infantry troops, the Chinese buttressed their infantry units with carts and used boats on the many rivers as mobile firing platforms. The buttressing of the infantry with carts served to create a semi-defensible location so as to prevent the nomad cavalry from overrunning them. On the steppe, in the early 7th century, Tang troops were frequently falling to the Turks. Yang Su, a Tang commander, realized that the issue was the formations that the Chinese were using. The Tang were marching through the steppe in a largely defensive formation that consisted of encapsulated squares. Yang employed a different formation that allowed his cavalry to go on the offensive and won a series of battles against the Turks. Unfortunately, his strategy did not catch on amongst other Tang commanders, and they continued to use the ineffective square defensive formations.

During the An Lushan rebellion, the rebels enjoyed the advantage of having superior cavalry mounts due to An Lushan’s previous role as the “Commissioner of Stables,” which allowed him to divert the best horses to his future troops. In the face of superior forces, Li Guangbi countered effectively in defending against the rebel cavalry. “Li deployed his foot soldiers with their backs to the town wall and kept the enemy horsemen at bay with a dense spear formation and 1,000 crossbowmen divided into four sections so as to keep up continuous volleys.” This effective combination of fortification, infantry formation, and the apt application of the crossbow technology served the purpose of overcoming superior cavalry troops. In another example of countering superior mounted forces, the Sui encountered Champan troops on war elephants. The Sui forces used feigned flights in order to lure the elephants into traps, and also used crossbows to scare the elephants into trampling their own

36 Graff, p. 125.
37 Graff, p. 144.
38 Graff, p. 219.
39 Graff, p. 220.
All of these instances of tactics overcoming great obstacles demonstrate that, even when at the disadvantage, commanders always had the opportunity to turn the tide of battle into their favor through the use of crafty and innovative tactics.

When defending specific locations or borders for extended periods of time, however, armies couldn’t always rely on tactics to save the day. Out of the necessity to defend settled locations and regions, the Chinese often built defensive structures, including town walls, fully fortified cities, long walls, ditches, and hydraulic defense systems. All of these defensive constructions had the goal of ideally deterring or stopping the nomads entirely, although they usually only served to slow them down. Most of the time, this slowing of the enemy advance worked at least to some extent because the Chinese had garrisons from which they could send out mobile strike forces to combat the invasion. Town walls were the most common defensive measure taken by the Chinese, as most towns had walls and nearly all cities were fortified further. These walled towns worked to stop the nomadic cavalry because they negated their advantage of mobility. Walls had been used in China since the Warring States period in China for multiple reasons, which have been discussed in the previous section. The Great Wall as we know it today was built during the Ming, and had more specific aims than previous walls. The Ming needed an effective way to curb incursions by the Mongols from the steppe, and couldn’t afford to frequently invade the steppe in order to stop them. As a cheaper alternative, the Ming decided to build the Great Wall.

Along a similar vein, the Song dynasty created a hydraulic defense system in Hebei province under Zhenzong around the year 1000. The hydraulic defense consisted of connecting fortified cities with a “complex of canals, ditches, paddy fields, pools, swamps, floodgates, water

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40 Graff, p. 145.
41 These defensive measures were taken both along borders and internally at strategically vital locations.
42 Lorge, p. 124.
barriers, and the like." This served several purposes at once: impeding the Kitan cavalry, providing rice, and facilitating shipment of goods and troops. To bolster the strength of this long defense system, as noted earlier, the Song built multiple garrisons so they could move to defend more easily. The strength of this hydraulic system is evident in that the Liao failed to take over any part of China, despite regular raids and attempts to do so. In contrast, when the Jurchen Jin attacked the same region in 1125, the hydraulic defense system was long gone and the Song were forced to cede the Hebei province to them. The southern part of China enjoyed a natural defense system of rivers that served as a serious impediment to nomadic cavalrymen as well. Until the Mongols succeeded in the 13th century, no nomadic army had penetrated and conquered the southern parts of China. This is because previous nomadic confederations had failed to find a way to effectively cross the rivers in the south in order to continue their conquest. The Chinese naval presence in these rivers kept them from ever mounting a force on the opposite bank, but the nomads were determined that as soon as they crossed they would be victorious. It is uncertain as to whether or not the Song had the insight to make the connection between the natural defenses of the south and their hydraulic defense system in the north. Regardless, both proved to be very effective in hampering the progress of nomadic armies. On a more site-specific basis, ditches worked well in slowing cavalry advances. At Pingyang in 576, a protective ditch was dug to the south of the fortress, between Fen River and Mount Qiao. This forced the attacking army to stop and fill in the ditch before they could continue their advance. None of these tactics seem to have entirely stopped the advance of the steppe armies, but they

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43 Lau, p. 187.
44 Lorge, p. 52.
45 Lorge, p. 62.
46 Graff, p. 113.
47 With the possible exception of the rivers in the South. This point is arguable, however, as the Mongols were able to cross the rivers and continue their conquest, but only after converting a portion of their military into a navy, thus changing the nature of their 'steppe army.'
all certainly proved useful in slowing them down and, at the very least, buying the Chinese more
time to prepare for the coming attack.

In times of great threat to the Chinese population by the Central Asian steppe nomads,
popular support was garnered to bolster the defense effort. The use of militias made up of
ordinary Chinese citizens was effective because they were able to utilize guerilla tactics to strike
an unsuspecting enemy instead of confronting them in pitched battles. Previously, militias had
been put into effect in times of need in order to combat things ranging from rebellions to
banditry. The use of militiamen was institutionalized along the hydraulic defense system in
Hebei during the Song. The militiamen worked on a reward based system, and were expected to
conduct guerilla warfare, spy on the Liao through family ties on the other side of the border, and
to report on enemy mobilizations.48 This system was effective and helped to strengthen the
already formidable defense network that the Song had established in this region. Later, during
the invasions of the Jin and Mongols, the people would once again play a role in the military
defense of China. Volunteer armies used similar tactics against both the Jin and Mongols.49
They occupied mountain fortresses that were designed with defense and sustainability in mind,
and used them as launching points for guerilla activities against the invading steppe peoples.

Mountain fortresses had been used throughout Chinese history during times of distress in
order to defend from both banditry and invasion.50 As noted, volunteer armies would occupy the
fortresses in order to mount a military resistance. The primary function of these fortresses was to
create a sustainable defense network that was locally maintained and not dependent upon outside
resources. One of the most documented uses of these mountain fortresses was during the

48 Lau, p. 190.
49 Huang K’uan-Chung, “Mountain fortress defence: The experience of the Southern Song and Korea in resisting
the Mongol invasions,” in Van de Ven, p. 226.
50 Huang p. 225.
Mongol invasion, when Yu Jie decided they would be an effective measure to defend Sichuan after the fall of its military bases. Under Yu Jie, twenty mountain fortresses were constructed, and to paraphrase Huang K’uan-Chung, had the following strategic features:

1. They were located on top of cliffs, which made them easy to defend and hard to capture. They also had cultivated land to provide food in addition to springs for water.
2. They were near rivers, which protected them from cavalry attacks in addition to allowing the navy to come into play and keeping lines of communication open with the outside world.
3. They were near large metropolitan areas, which allowed the local government bodies to quickly retreat to a safe fortress. This kept the military command structure intact and limited the effectiveness of Mongol tactics.

The constant supply of food and water within these mountain fortresses was crucial to the long term sustainability of the defensive system in Sichuan. The intelligent choice of locations to be close in proximity to both rivers and cities allowed the defenders to establish a sort of defensive network that connected them, enhancing “the military capabilities of the Song forces” and making guerilla tactics feasible. This system of combined offensive and defensive capabilities that arose from mountain fortresses in the Sichuan was highly effective in combating the Mongols, as they held out for more than thirty years in some cases. The Chinese willingness to adapt to circumstances that made conventional warfare impossible resulted in the development of these bastions of hope which served to demonstrate that they would not simply roll over easily as many of the opponents of the Mongols had. Holding out against the Mongols for over thirty years was impressive in and of itself; to do so in the absence of a conventional military presence was virtually unthinkable.

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51 Huang, p. 233.
52 Huang, p. 234.
53 Ibid.
54 Huang, p. 237.
As mentioned earlier, one measure of limiting the ability of the nomads to disrupt Chinese life was to strike them in the steppe and force them away. This tactic had been used since the early Han when emperor Wudi employed large columns of cavalry to penetrate into the steppe. In later periods, however, this proved to be somewhat less effective for various reasons. Many of the dynasties from the Sui on had issues extending their will to the steppe. The Sui used heavy cavalry units when they attempted to attack the nomads on the steppe. The lesser mobility of heavy cavalry as compared to the light cavalry units of the steppe people was exacerbated by their lack of efficiency in establishing supply lines. This resulted in failed attempts to establish a presence in the steppe. The Tang, as we have seen, largely used defensive formations when they attacked the steppe. They were only able to achieve limited success, and a good deal of that success came from commanders like Yang Su who were willing to adapt to the situation and use varying formations to facilitate offensive maneuvers and Li Jing who simply adopted the tactics of the Turks in order to crush Xieli’s camp. The Song and Ming both opted to play a more defensive role in dealing with the steppe, building hydraulic defense systems and walls respectively. The Yuan dynasty was allied with the steppe and largely didn’t have to worry about exerting force upon it. It wasn’t until the rise of the Manchus to power that the Chinese were able to establish a lasting presence in the steppe, most notably under the leadership of the emperor Qianlong in the 18th century. Qianlong enjoyed an unprecedented reach and power over the steppe, mostly because he was able to solve the issues that previous dynasties had encountered on the steppe. The Qing, unlike the Ming before them, had the funds necessary

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55 Graff, p. 144. This is not necessarily to say that the Chinese supply lines were terrible by any means. The supply lines of any agrarian civilization will, by nature, be less mobile than that of a nomadic population and have issues extending far enough to maintain a military presence.

56 These generalizations merely fit the dominant mindset of the dynasties. Some rulers were much more aggressive while others preferred to sit back and defend, using offense primarily as a deterrent.

57 Lorge, p. 181.
to send forces into the steppe, as is demonstrated by his ability to establish supply lines
thousands of miles into the steppe, even through deserts, that were able to support armies of
around 50,000 men for several years. In addition to his unprecedented ability to project men
and supplies into the steppe, his troops had a distinct technological advantage in that they were
employing gunpowder weapons by this time.

Another tactic employed by the Qing in this time was to fix steppe tribes within
boundaries after their surrender. Having removed their rights to move freely around the steppe,
they then promoted trade between the tribes and the interior of China. Peter C. Perdue provides
insightful knowledge regarding the use of economics as a weapon of war in dominating the
Mongol tribes. “The Mongol nobility and clergy established close ties with merchants through
debt relationships that made them dependent on capital flows from the interior.” These ties
grew over time and even spread into the masses, leading to their pacification. “The Mongols
who submitted to the Qing gave up both their economic autonomy and geographical mobility in
exchange for peace, material goods, and the mixed blessings of ‘civilization,’ in Chinese
terms.” The aims of the Qing appear to have been achieving hegemony as opposed to
economic dominance, although they did profit by gaining a reliable source for quality horses.

Gunpowder weaponry ultimately spelled the downfall of the period in which cavalry
units were dominant in Asia and around the world. Unlike in the West, however, the advent of
gunpowder and gunpowder weaponry did not quickly revolutionize the face of warfare in Asia.
As Chase argues, the Chinese focus on cavalry hindered the adoption gunpowder weaponry and
the innovations that accompany it. The Chinese invented the first forms of these weapons, but

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60 Ibid.
61 Ibid.
they never came to dominate warfare in the same way that they did in Europe by even the 15th century. Likewise, even Japanese warfare became centered on gunpowder weaponry within half a century of the introduction of the Portuguese arquebus on Tanegashima in 1542. The Japanese used a combination of cannon and small arms fire in order to crush the cavalry charge of the Korean general Sin Ip during the Japanese invasion of Korea in 1592, a mere fifty years following the first encounter between the Japanese and firearms. In China, the adoption and application of firearms came at a much slower rate of adoption and resulted in a different warfare style than was experienced in much of the rest of the world; Japan and the West used the widespread application of castles and cannons for siege warfare, whereas China primarily stuck to more meager fortifications in the form of walled towns and cities. The fundamental difference between warfare in this region of Asia and the rest of the modernizing world allowed for the continued importance of the cavalry tradition through parts of the 18th century, although the strength of firearms increased steadily through the 17th century.

Tactics previously used with crossbows in China were often later applied to firearms. For example, in southern China, boats were used as stable shooting platforms for crossbows. This tactic was obviously a precursor to the use of small arms and cannons on naval vessels. Similarly, gunpowder weapons were used to defend fortified locations much in the same way that Li Guangbi fended off superior cavalry forces during the An Lushan rebellion with crossbow volley fire. Behind defensive positions, the Chinese focused on using cannons to repel the steppe cavalry. However, they realized the effectiveness of cannons and small arms in warfare, and employed a sort of joint system between gunpowder weaponry and cavalry units by the time of the Japanese invasion of Korea. The Chinese troops in Korea consisted mostly of cavalrymen

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62 Lorge, p. 132.
63 GrafT, p. 125.
64 Lorge, p. 125.
and carts carrying cannons. 65 In order to combat the late Ming, the Manchus were forced to adopt the use of similar tactics. In 1631, near the fortress of Dalinghe, “cavalry charges were important, but it was the cannon and arquebuses used on both sides that were truly central to the contest.” 66 Along with the rise of the firearm came the resurgence of infantry units, as they were the primary benefactor of primitive firearms, which were not effective from horseback. This trend of firearms overtaking cavalry in importance continued, although in relations with the Central Asian steppe nomads, whose access to gunpowder weaponry was more limited, cavalry still proved to be useful.

By the late 17th century, Qing armies were comprised of a combination of traditional units and Banners, a form of organizing the military traditional to the Manchus. Banners in this time were largely armed with gunpowder weaponry and functioned to support and augment the already formidable might of the traditional units. Under Qianlong, the combination of these groups helped to subdue the steppe. Cavalry forces moved in quickly and weakened enemy forces, and then the “slower-moving firearms could be brought up to destroy them.” 67 Prior to this time period, small firearms were too ineffective to be used as an adequate counter to cavalry units because they were predominantly smoothbore matchlock rifles, lacking in accuracy and rate of fire. 68 As the technology developed, guns became “lighter, handier, [and] more accurate,” 69 making them an effective weapon against cavalry units. Eventually the importance of gunpowder weapons outweighed that of mounted warfare, but it took centuries of tweaking the technology of firearms for this to happen.

66 Lorge, p. 149.
67 Lorge, p. 165.
The 18th century saw both the fall of mounted cavalry units as the most dominant force on the battlefield in Asia and the fall of true steppe power. The efforts of the Qing played a major role in the loss of political influence of the steppe nomads. The crucial role in the fall of the steppe was played, however, by the growing Russian empire. As the Russians expanded their territories, fueled by the wider use of firearms, the amount of steppe lands available for the nomads to wander was diminished greatly. Eventually, the Russian empire grew powerful enough to assert its strength and establish a border in a sense that we would recognize today. Additionally, the rise of the telegraph and railroads greatly diminished the superiority in mobility that the nomads had enjoyed, removing their one remaining advantage.\textsuperscript{70} Caught between two powerful states, the nomads no longer enjoyed the ability to move freely across borders and flee away from coming attacks, ultimately leading to the loss of their autonomy. This undermined their political importance, henceforth, effectively ending the age in which cavalry warfare dominated Asia.

Many scholars have attributed the rise of gunpowder weaponry with the ultimate downfall of steppe power and cavalry warfare in general, and while this assertion is not false, it deemphasizes the roles that various tactics employed throughout history played in this trend. The Chinese demonstrated a myriad of brilliant stratagems that served to undermine the power of the Central Asian steppe nomads. Cavalry was, indeed, the most powerful tool at the disposal of militaries around the world until the advent of accurate, powerful, fast, easy loading gunpowder weapons. The continued strength of these units was exhibited by tribal nomads for several millennia in Asia, causing perhaps more political and social upheaval in their time than any other unsettled population in history. The most powerful empires across the Eurasian landmass felt the impact of these fearsome warriors, from Rome to China. No empire contended with these

\textsuperscript{70}Chase, p. 27.
nomad armies for as long or as regularly as the Chinese did. The ability of the Chinese people to maintain their cultural identity, even while under the rule of these nomads, was quite remarkable.

Sinicization went a long way towards easing the tensions between the two groups, but new tribal powers on the steppe were never in short order. This constant supply of cavalry opposition served to provide a Chinese necessity to find countermeasures to this form of warfare, and even when they found themselves at an extreme disadvantage they always found a way to, at the very least, mount a resistance that was successful in slowing down the cavalry hordes. The cavalry tactics and defenses against cavalry warfare employed by the Chinese throughout time are a great example of the evolution of cavalry tactics in Asia.
From the 4th century BC until the 17th century AD, virtually every military threat to the Chinese Empire of significance came from the steppes of Central Asia. As has been detailed in the previous two sections, the Chinese went to great lengths in order to combat the constant threat posed by their northern neighbors. Due to this constant, and often exclusive, outside threat from the northern steppe, the focus of warfare in this region of Asia was primarily on land. This emphasis of warfare almost exclusively on dry land led directly to the perpetuation of cavalry as the penultimate military unit in Asia throughout most of this time period. The unfortunate result of this constant land warfare was the degradation of Chinese naval strength by the time of the modern era. This is not to say that the Chinese navy was inept, especially during the time period in which cavalry dominated, as it fared quite well against all opposition. As time wore on, the Chinese faced no significant opposition at sea, and therefore had no need to enhance their naval power; why fix something that is not broken? The lack of naval opposition coupled with the constant threat from the steppe on land led to the weakness demonstrated in the 19th century. The Chinese navy was beaten by a number of Western powers and, most notably, by the Japanese at the close of the century. The overwhelming landward tendency of Asian warfare along with the technological leaps of the West resulted in Chinese naval inferiority.

The focus of this work is cavalry tactics, so the following examples will be highlighted only briefly as a demonstration of the impact that the overwhelming emphasis placed upon cavalry warfare had on naval power in China. The Chinese very rarely faced an opposing naval force. This is as much a product of the lack of formidable opposition in the region as it is one of the rather difficult waters, having no enclosed sea to sail on. Many of the early naval threats to the Chinese came from within on the waterways and river systems, primarily in South China.
This was especially true during the period of disunity preceding the rise of the Sui. River battles were important and decided the political landscape of the region during this time.¹

Later, the Mongols adopted the use of naval warfare in order to effectively combat the Chinese on these southern waterways. They did not, however, just pick up the form of warfare and excel immediately. Rather, they used the technological know-how of already conquered Chinese provinces and other civilizations in order to obtain a proper naval force. In this way, the naval battles in the south during the 13th century were not much different from those of earlier times in that they were essentially battles between contemporarily equivalent Chinese vessels.

One of the greatest naval threats posed to the Chinese empire prior to the 19th century came not from a formal military opponent, but from pirates, wokou, during the Ming dynasty. This was one of the few naval threats that came from outside the Chinese domain. China had no standing naval capacity with which to combat these pirates, so they were forced to divert resources to deal with the piracy. As Lorge notes, the Chinese mustered a relatively small force and combated the wokou using a combination of land and naval forces.² The Chinese naval forces were armed with firearms and other gunpowder weapons that proved effective against the pirates. The recently recruited and trained Chinese men won the day against the wokou, who were previously known for their "ferocity, discipline, and effectiveness."³

Given the relative ineffectiveness and scarcity of the opponents that the Chinese had fought in naval engagements to the 19th century, it should be no surprise that they were unprepared for the superior technology and tactics possessed by the westerners. The naval inferiority of the Chinese was first truly felt during the Opium Wars (1839-1842 & 1856-1860)

³ Ibid.
between the British and the Chinese. These wars were fought over a trade dispute between the
two empires concerning the British import of opium to China. The British crushed the Chinese
and forced them to sign the Treaties of Nanjing and Tianjin, opening further coastal Chinese
cities to foreign trade and, ultimately, strong foreign influence. Later, the French helped the
Chinese to assemble a modern western-style navy, but then promptly destroyed it when the
Chinese attempted to eject the French from Vietnam in 1883.

The reasons for Western naval superiority over the Chinese during the 19th century are
myriad. Experience in naval warfare is merely one of the contributing factors. Others include
the industrialization of the West, which led to their booming economies at the time. Their
centuries old maritime empires also gave them motivation to have established strong naval fleets
capable of asserting themselves across the globe. One of the central problems the Chinese had
with establishing a modern naval fleet was simply that they had not experienced the factors that
were felt in the West. There was no comparable maritime competition in Asia, and if there had
been one China was already at the top of its own tributary trade system. This allowed them to
focus on land battles between themselves and the steppe confederations, internal rebellions, and,
perhaps most notably from a foreign standpoint, the Russians.

The case of Japan highlights several other factors that hampered Chinese naval growth
specifically in the 19th century. Japan had isolated itself from the majority of foreign contacts
early in the 17th century under Tokugawa rule. They did not open up their ports to foreign trade
en masse again until the Meiji Restoration in 1867 when they became a capitalist nation. Less
than three decades later, the Japanese navy was able to defeat the Chinese in the Sino-Japanese
War. The rapid application of new military technologies mirrored the Japanese adoption of
firearms in the 16th century. Other than Japan’s aptitude for adopting new technology quickly,
factors that contributed to its rapid ascent to naval power included a conversion to capitalism and industrialization, which was facilitated by their already complex road system.

Japan’s ability to modernize its navy in such a short amount of time following their renewed foreign contacts is a stark contrast to the incredibly slow modernization efforts of the Chinese, which were virtually non-existent until the first Opium War. China had the resources and manpower to modernize long before they decided to attempt to do so, infrastructure notwithstanding. One common argument for the failures of the Chinese navy in the 19th century is that the Qing dynasty was in decline. While this claim has merit by its own right, it also glosses over many aspects of Qing rule that were still fine. Most notably, the Qing military enjoyed continued strength on land both domestically and against foreign powers. They had defeated the Russians previously and demonstrated their power against both the British and French during their wars with them in the 19th century. Furthermore, the Taiping Rebellion was occurring during the second Opium War yet the Manchus were able to put down this rebellion even while at war.

The Chinese tendency towards conflict on land throughout its history deemphasized naval engagements at sea. Internally, naval engagements played key roles in determining political power on waterways and rivers, but this trend did not carry onto the open sea. The Chinese were not incapable of producing a navy with the ability to compete with Western-style navies; they simply did not have a reason to. The Chinese continued to view outsiders as barbarians and not as a potential threat. This feeling, coupled with military success on land throughout the period, held the Chinese navy back technologically. The Chinese tendency towards land warfare caused China to falter in modern warfare; an issue China is still dealing with today.
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