

The Effect of King Harald Godwinson's 200 Mile March from London to York on the Battle of Stamford Bridge: A Qualitative Study Using Experimental Archeology

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Abstract: The year 1066 CE is one of the most heavily studied in medieval, military, and political history. It was the year of the death of King Edward the Confessor of England, and was filled with strife. Many battles and military feats took place this year. This study focuses on one in particular: King Harold Godwinson's march to York, where the English army covered over two hundred miles in five days and emerged victorious at the battle of Stamford Bridge. I attempted this march myself, covering over two hundred miles on foot in five days wearing period-accurate war gear. At the end of this march, I faced off against martial arts practitioners, fighting with period accurate equipment, and was able to use this data to analyze the march's impact on my fighting ability. Using this information, the academic community will get a better understanding of the effects of marching in 11thcentury armor and how it changes the performance of an army. The results of the study also shine light on certain controversies around the march. Many historians believe that King Harold's entire force was mounted. This study supports this claim. I was unable to complete the full 200-mile march in four days, suggesting that the majority if not the entirety of the army were mounted. Despite this the project provides a pivotal viewpoint in understanding this military feat.

Introduction

On January 4th, 1066 CE, King Edward the Confessor of England died in his bed with no children and no obvious heir to succeed him. He was the last king of the house of Wessex and the events that took place after his passing would herald a new era for England. The year 1066 would see three major battles fought on

English soil and much violence and unrest. There were several possible heirs to the English throne upon King Edward's death. They included his great nephew, Edgar the Atheling, who was only a boy at the time; the Earl of Wessex, Harold Godwinson; along with his brother and former Earl of Northumbria, Tostig who acted in alliance with King Harald Sigurdsson of Norway. Duke William of





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Normandy also had designs on the Kingdom of England.1 With the exception of Edgar the Atheling, all these men would press their claim to the throne through violence. The nature of warfare in England at this time had not changed significantly since the Viking invasions of the 9th century. English armies were either drawn from the Fryd, or national militia, of the kingdom, or from professional housecarls who were sustained by their lords, a tradition borrowed from the invading Norsemen. English foot soldiers were armed with shields, spears, axes, and swords and would fight in a tightly packed formation known as a shield wall, which consisted of several ranks of men fighting side by side, each protecting the man beside him with his shield. There was little diversity within the English armed forces. They had few archers, and though some men rode to war, cavalry was not yet widely used during battles in England until the Battle of Hastings in 1066.2 It was these armies that would march and fight across the country that year. Earl Harold Godwinson was elected to be king by the Witan, a council of the greatest English noblemen, and was coronated the day after the Confessor's death.3 But he knew that the struggle for the throne was far from over and immediately began to prepare his defenses, summoning the Fryd of England to the southern coast.4

Just across the channel, William Duke of Normandy was readying his own fleet and army to invade England. King Harold sat on the southern coast for months waiting for his rival to arrive, but to no avail. With every passing

day, his force's supplies ran lower. Early in September, the Fryd returned home, preferring to gather their harvests for the winter rather than starve in the south to defend the kingdom against an enemy who had not yet appeared. King Harold also gathered up his personal army of housecarls and headed back to London. In a stroke of terrible luck, he learned only a few days after dismissing his army that his brother, Earl Tostig, and King Harald Sigurdsson of Norway had made an alliance and landed at the village of Scarborough in modern day Yorkshire, burning it to the ground. King Harold wasted little time gathering what forces he could. He departed from London on September 20th and marched at breakneck speed, gathering more men along the way, until he reached the village of Tadcaster on the 24th, a mere ten miles away from York.5 Once there, he learned that the Norwegian force had defeated the Earls of Mercia and Northumbria at the battle of Fulford⁶ and King Harald of Norway had arranged for a hostage exchange to take place at the village of Stamford Bridge the following day.

Completing the rest of the march and recruiting more men as he passed through York, King Harold of England marched to meet the invaders in battle. King Harald of Norway and Earl Tostig expected to be greeted by a party of unarmed hostages at Stamford Bridge, but instead were met by the full force of the English army.⁷ Believing the fighting was over, they had left their mail shirts behind, along with a full

¹ Howarth David, *1066: The Year of the Conquest* (Harmondsworth, Middlesex; New York: Penguin, 1981)45.

² Howarth David, *1066: The Year of the Conquest* (Harmondsworth, Middlesex; New York: Penguin, 1981)80.

³ Savage Anne, trans., *The Anglo-Saxon Chronicles*, 1st U.S. ed.. (New York: StMartin's/Marek, 1983)191.

⁴ Savage Anne, trans., *The Anglo-Saxon Chronicles*, 1st U.S. ed.. (New York: StMartin's/Marek, 1983)194.

⁵ Ingram James, trans., "The Anglo-Saxon Chronicle," The anglo saxon Chronicle, accessed March 11, 2022, http://www.mcllibrary.org/Anglo/part5.html.

⁶ Savage Anne, trans., *The Anglo-Saxon Chronicles*, 1st U.S. ed.. (New York: StMartin's/Marek, 1983)194.

⁷ Savage Anne, trans., *The Anglo-Saxon Chronicles*, 1st U.S. ed.. (New York: StMartin's/Marek, 1983)194.

third of their army. Nevertheless, the fight that ensued was difficult and bloody. When it was done, both Earl Tostig and King Harald of Norway lay dead, and the Norse army was shattered. Hit his battle, the last Viking invasion of England ended, and King Harold proved the devotion of the English people to his cause. Though he would be defeated and killed at the Battle of Hastings roughly one month later and William of Normandy would take the throne of England, he still achieved an immense feat of military prowess and leadership.

There are many questions about this march. How large was King Harold's army? How many were on horseback? How much weight were they carrying and how did the rigors of this march affect their performance in the battle at Stamford? The aim of this study is to address some of these questions through the practice of experimental archaeology. This project was made possible thanks to a UROP grant from the University of Minnesota, which supported the purchase of supplies needed for the reenactment. The original plan was to recreate the march myself by walking over two hundred miles in five days in period war gear. Pre- and post-tests of combat abilities on either end of the march were conducted via practice battles with Historic European Martial Arts (HEMA) practitioners using period weaponry. Performance data was gathered to see how the fatigue of travel affected combat abilities. The goal was to use this data to gain a more accurate perspective on the experiences of these soldiers and shine a light onto the impact of certain

variables related to the march and the subsequent battle. This data could also potentially be applied when looking more broadly at other forced marches taken in the early medieval and late antique periods, when such armor was prevalent.

Sources

A range of primary sources were used for the project. Much of the information regarding the battle is found in the Anglo-Saxon Chronicle and Snorri Sturluson's King Harald's saga in the Heimskringla. The Anglo-Saxon Chronicle is a contemporary document to the battle but rather sparse on details and is mostly useful for establishing the base facts and outlining the dates upon which the march and battle took place. Sturluson's work is far richer in detail but was recorded from oral history in Iceland almost 150 years after the fact and is a narrative history in the utmost sense. It is full of inaccuracies and misconceptions.¹¹ Scholars such as Magnus Magnússon argue that despite this it is still useful when it comes to outlining the character of the participants and the circumstances surrounding the event, due to the nature of truth in Icelandic Skaldic Poetry. 12 The Bayeux tapestry was critical for the project since it is one of the only detailed period depictions of the arms and armor that would have been used. I also used the Doomsday Book of 1086 as a primary source. This survey was commissioned by King William after his victory over the English and records the state of the kingdom before and after his ascension. This was vital for



Sturluson Snorri-, King Harald's Saga; Harald Hardradi of Norway. From Snorri Sturluson's Heimskringla, trans. Magnússon magnus and Hermann Pálsson, Penguin Classics, L183 (Baltimore: Penguin Books, 1966)147.
 Savage Anne, trans., The Anglo-Saxon Chronicles, 1st U.S. ed.. (New York: StMartin's/Marek, 1983)194.
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¹¹ Howarth David, *1066: The Year of the Conquest* (Harmondsworth, Middlesex; New York: Penguin, 1981)138.

¹² Sturluson Snorri-, King Harald's Saga; Harald Hardradi of Norway. From Snorri Sturluson's Heimskringla, trans. Magnús Magnússon and Hermann Pálsson, Penguin Classics, L183 (Baltimore: Penguin Books, 1966).

outlining the social landscape of England at this time and how King Harold's army could have supplied itself on the march. Secondary sources from David Howarth, Peter Hoskins and Bernard Bachrach, experts in 11th century history and medieval military logistics also informed my conclusions.

Methods

To prepare for the study, I researched and gathered equipment close to that which would have been used at the time of the battle. This included the following: chain mail, a nasal helmet, a replica spear shaft, and a kite shield.¹³ In total, this gear weighed approximately twenty-four pounds.

Once this equipment was assembled, a pre-test battle was organized to be used as a control. This pre-test took place two weeks before the march was planned. During the battle, a modern fencing safety mask and modern tennis shoes took the place of a more authentic helmet and footwear for safety purposes. Wearing chain mail and wielding a wooden replica kite shield and blunt sword, six volunteer HEMA (Historical European Martial Arts) practitioners faced off against me with a one-minute break in between each round of fighting. Each fight was scored thusly: both fighters started with ten points. If a blow landed on a fighter's arm or leg, they lost one point. If a blow landed on the torso, they lost two points, and if a blow landed on the head, they lost three. The victor was the one who reduced their

opponent to zero points first. After every round, the number of points scored and lost was recorded. This process was repeated with all six volunteers, and the total number of points, victories and losses was recorded. After a tenminute break, we engaged in an endurance test in which each volunteer fought again, rotating a new fighter in to face off against me every time I was hit on the head or scored a touch on a volunteer. This continued until I could no longer defend themself, or was hit in the head ten times, at which point the duration of the test was recorded. The intent of this endurance test was to approximate the strain of a continuous battle and provide a better estimate of how the rigor of the march may have affected a soldier's overall endurance.

Roughly two weeks after the pre-test battle, the march took place. The time period from April 6-10 was chosen, as this time of year most closely approximates what the weather in England may have been at the time of the original battle. Dressed in period gear including a mail shirt, tunic, and helmet and carrying a spear shaft and shield, I started out on the morning of the 6th along an unpaved trail in northern Wisconsin. The original goal had been to cover roughly 48 miles per day for four days for a total of 193 miles. On the fifth day of the march, I planned to walk a final seven miles prior to engaging in the post-test battle which would mirror the structure of the first battle. 15

It is difficult to know many of the exact circumstances of King Harold's march,

the lack of period footwear and real weapons. It is also illegal to camp on the Gandy Dancer Trail and so I stayed I stayed the night in a nearby cabin. Such luxury would have only been available to perhaps the King and his closest advisers. The lack of company is also inaccurate to the march that took place in 1066. All of these inconsistencies may have changed the results of the study and may be the focus of future research to come.

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 ^{13 &}quot;Explore the Bayeux Tapestry Online," Bayeux Museum, accessed March 14, 2022,
 https://www.bayeuxmuseum.com/en/the-bayeux-tapestry/discover-the-bayeux-tapestry/explore-online/.
 14 "UK Regional Climates," Met Office, accessed February 28, 2024,

https://www.metoffice.gov.uk/research/climate/maps-and-data/regional-climates/index.

¹⁵ The recreation of King Harold's march had several inconsistencies with the historical event. These included

including how long it took. Modern scholars suspect King Harold dismissed his army at the southern coast sometime between September 13th and September 16th. 16 He would not have heard of Earl Tostig and King Harald's invasion until two to three days after returning to London. Rallying whatever local militia he could along with his 3000 housecarls he departed with much haste, most likely leaving upon the morning of the 20th. He recruited the local Fryd along the way.¹⁷ According to the sources he reached Tadcaster, roughly 10 miles south of Stamford Bridge, on the 24th. He then marched through York and the battle took place late in the morning on September 25th.18 These estimations were used to structure the recreation and plan the attempted sections of the march. Along with this, the weather is important to consider. No details about the weather are known but both the march and battle took place in September. Unfortunately, due to the time constraints of the grant, the march could not take place in September. However, the temperatures and weather in April in Wisconsin are the closest to those in September in England. Those marching north in 1066 could have experienced similar conditions. Unfortunately, this project could not be completed in England. Instead, the Gandy Dancer trail in northern Wisconsin was chosen as a relatively flat trail of comparable elevation and terrain type to the area which King Harold and his men were marching through. That said, the Gandy Dancer Trail may have been in better condition than many medieval roads, whose

infamous pot holes the English would have had to brave.

A description of the English army can be found in the writing of Snorri Sturluson who notes that upon arriving at the battle of Stamford Bridge, they looked like "A sheet of ice" due to their mail and helmets shimming in the sun.19 However, if we want a more detailed description of the war gear these men were carrying, we must look to the Bayeux tapestry. The tapestry is not a perfect source in that it was made by the conquering Normans and therefore shows a heavy Norman bias, but it is one of the few detailed examples of armor and other military equipment from the period. It can be relied upon as a visual source for the armament of the English forces and is one of the only primary visual sources, thought to have been completed within a few years of the conquest.²⁰ The replica armor used in this study consisted of a shirt of riveted mail worn over a linen tunic. Though some mail shirts are depicted long sleeved in the Bayeux tapestry, there are also many examples of short sleeved shirts exposing the base layer of a colored tunic underneath. The mail weighed around 11 pounds, but this weight is evenly distributed over the body. A replica of an 11th century nasal helmet, similar to those depicted on the tapestry, was also worn on the head or carried by tying it to a belt at the waist. The helm weighed about 2.4 pounds.

Though circular and "kite" shields are depicted on the tapestry, the majority are kite shields, the kind which was likely carried during King Harold's march. Using the tapestry and

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¹⁶ Howarth David, *1066: The Year of the Conquest* (Harmondsworth, Middlesex; New York: Penguin, 1981)128.

¹⁷ Howarth David, *1066: The Year of the Conquest* (Harmondsworth, Middlesex; New York: Penguin, 1981)136.

¹⁸ Ibid.

Sturluson Snorri-, King Harald's Saga; Harald Hardradi of Norway. From Snorri Sturluson's Heimskringla, trans.
 Magnússon Magnus and Hermann Pálsson, Penguin Classics, L183 (Baltimore: Penguin Books, 1966)147.
 "Explore the Bayeux Tapestry Online," Bayeux Museum, accessed March 14, 2022, https://www.bayeuxmuseum.com/en/the-bayeux-tapestry/discover-the-bayeux-tapestry/explore-online/.

other rare examples of this kind of shield found in slightly later periods as a model, a replica shield was recreated out of wood and leather. This shield was slung over the back using leather straps known as gauge straps. A replica spear shaft was also carried. It would have been more accurate to carry a replica spear with the head included, but due to legal and safety reasons this was not possible. Soldiers in King Harold's army would have also had an ax or sword on their belts, but once again, for legal reasons, this equipment could not be used in the study. From looking at the Bayeux tapestry we can see that this composed the standard set of war gear at the time and is likely what the majority of the soldiers in King Harold Godwinson's army were carrying on their way north.21

This project did not involve carrying supplies. This is because King Harold was traveling with great haste and did not need to carry them. The King and his soldiers were most likely fed and supplied by the villagers and by foraging in the countryside they passed along the way. This mode of travel decreased the amount of supplies they carried and increased their speed. By looking at the *Domesday Book* of 1086, we can see that there were more than enough villages along the march to keep the King's army supplied for the four days that it was marching.22 The Open Domesday Map is a particularly useful source in visualizing the number of friendly villages from which the King and his men were able to be supplied with food.²³ The harvest had just been brought in, so the local villages' larders were full for the winter.

21 "Explore the Bayeux Tapestry Online," Bayeux Museum, accessed March 14, 2022, https://www.bayeuxmuseum.com/en/the-bayeux-tapestry/discover-the-bayeux-tapestry/explore-online/.
 22 Williams Ann and G H Martin (Geoffrey Haward), Domesday Book: A Complete Translation, Penguin Classics (London; New York: Penguin Books, 2003).
 23 "Map | Domesday Book," accessed November 18, 2021, https://opendomesday.org/map/.

King Harold enjoyed broad support as King and could have taken what he needed by force or goodwill. In his study on William the Conqueror's march to London later that year, Bernard Bachrach comments on how the local countryside could not have sustained an army of such size.24 However, Duke William's march to London took far longer, and he did not have the support of the English people in his conquest. King Harold's march occurred in a very different context: Peter Hoskins notes that after the harvest, one medieval village with a population of 200 could feed an army of 15,000 men for a day.²⁵ Since it is likely King Harold's force numbered between 6,000 to 9,000 men, they should have had little trouble staying fed on the march, eating a diet of bread, salted fish, pottage, and, when available, meat. I attempted to maintain a similar diet on the march, eating grain-based soups and breads; though some new world ingredients (for example tomatoes) were consumed over the course of the journey. Limited supplies, such as bread, cheese, sausage, apples, and water were carried during the march itself.

Results

The most important result was that I was unable to complete the 48 daily miles of marching that would have been necessary to emulate a four-day march from London to York. The challenge of endurance walking came as a surprise to me. I am a young, active individual and anticipated being able to cover

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²⁴ Bachrach Bernard, "William the Conqueror's March on London: A Logistical Analysis," *Viator (Berkeley)* 48, no. 2 (2017): 115–38,

https://doi.org/10.1484/J.VIATOR.5.115979.

²⁵ Hoskins Peter, *In the Steps of the Black Prince: The Road to Poitiers, 1355-1356*, Warfare in History, 32 (Woodbridge, Suffolk: Rochester, NY: Boydell Press; Imprint of Boydell & Brewer Ltd, 2011).

this distance. I was able to march roughly 12 hours per day and cover 26 miles a day for four days with an additional ten miles marched on the fifth day before the post-test battle. This totaled to around 104 miles over four days, or 114 miles over five days. This is only a little over half the distance from London to York. At a similar pace in England, it can be estimated that it would have taken me around seven days to reach York from London.

Post-march battle metrics were collected using the same six volunteer HEMA practitioners for comparison with the premarch metrics to evaluate the impact of this 114-mile march in period gear on combat ability. The results of these battles are shown below.

The data collected from the pre- and post-march battles suggest some interesting things about the effects of marching in 11th century armor on combat. The march had no impact on the number of points scored in individual bouts. This suggests that marching has little to no impact on technique and overall skill when it comes to one-on-one, hand-tohand combat. The results were quite different in the endurance test: the march cut the results of the endurance test in half. This is important because endurance is more critical in a battle that could last for hours. We can use this data to look at other historical battles that took place after long marches and infer how marching might have affected not only the outcomes of the conflicts, but also the tactical decisions army leaders made about the pace of the marches.

In addition to the quantitative data gathered in the study, qualitative observations also provide new insights. The great advantage of experimental archaeology, which is the practice of attempting to recreate historical events, is the chance to put oneself in the shoes, in this case literally, of the people of the past.

There were several difficulties that had not been anticipated during the march. Foremost was simply how painful walking can become over a long period of time. I had experienced endurance-related pain as a cross country runner and fencer but had difficulty grasping that walking could require similar or greater levels of exertion. This strain is something that people from the medieval period would have been more aware of and accustomed to since they led lives that involved more long-distance walking than most modern individuals. This understanding gave me a more in-depth perspective on the difficulties of covering large distances on foot, even at a moderate pace. The gear carried during the march varied in its level of encumbrance. The mail, though heavy, was evenly distributed over the body and was barely felt over the course of the journey. The helmet was also only a minor hindrance. Though medieval helmets from after the 13th century could severely hamper one's ability to see and breathe, a replica open-faced nasal helmet from the 11th century like the one used in the study was relatively comfortable. It was worn most of the march, only removed occasionally due to heat and to the desire to cool off. Most challenging was the ten-pound kite shield carried on the back. Though it was strapped relatively tightly to the body and did not swing around as much as anticipated, its constant weight was tiresome and caused soreness in the back and shoulders. This increased pain and reduced stamina negatively impacted mileage and speed.

Traveling such a distance on foot provides deeper insight into the impact of distance on travel, warfare, and the governance of day-to-day life. Traveling through fields and wilderness and passing by a small town every five to ten miles provided some insight into what it might have been like traveling through the rural landscape of medieval England and the



difficulties that would come with governing such an area without the use of instant communication.

Dealing with a great variety of weatherrelated events on the march, including hard rain, sunshine, snow, and hail was also challenging. Though not always pleasant, this gave me some perspective on how these different kinds of weather may have affected travel in the past. The rain was by far the most difficult to deal with. Precipitation caused the path to become wet and slippery, making walking more difficult. When a real downpour took place, the rain soaked me to the bone and the cold set in, making marching on already exhausted feet more difficult. Compared to the rain, deeper cold and snow were no great burden. Though thickly falling snow greatly obscured my vision and made marching difficult when it accumulated on the trail, a thin layer of snow and cold quickened my pace when it froze the mud of the trail solid. A frozen trail acted more like concrete than dirt. It was also a unique experience to hear hundreds of little hailstones rattling down upon my helm as I crossed through the fields near Siren, Wisconsin. While the hail obscured vision and stung the face a bit, it was not large enough to cause any real physical harm. The last few days of the march were sunny. The brighter sky completely changed the look of the landscape and raised morale. However, it brought with it the added difficulty of greater heat, melting trails, and sunburn. All kinds of weather brought their own challenges while traveling on foot, but none were overly difficult to overcome except perhaps a true pouring rain.

Over the course of the march I began to speculate that the experience was far closer to

that of a medieval traveler than a soldier in King Harold Godwinson's army. While I was alone for almost the entire march, a soldier in King Harold's army would have been accompanied by thousands of his comrades, all bonded together by a common purpose. The few stretches of the march where I was briefly joined by others were far easier. Being accompanied by fellow soldiers for the entirety of the march would not only have changed the experience but also the difficulty of the task. This is a major difference between the experiment and the march undertaken in September of 1066.

My inability to cover 200 miles in four days wearing period gear also has significant implications for our understanding of King Harold's march from London to York. These findings could lead to several different interpretations. The first and most likely is that the majority-if not the entirety-of Harold Godwinson's army was mounted on its way north to Stamford Bridge. Though fifty miles a day is still a difficult pace to maintain even on horseback, it is far more achievable than maintaining it on foot. This theory, already popular amongst historians, is supported by the results of this study.26 A force traveling on foot at the same speed as the one achieved during the study could have made it to York from London in around seven days, meaning they would have had to depart on the 17th to reach Tadcaster on the 24th. This is possible but highly unlikely because news of the burning of Scarborough and the arrival of the Norse fleet probably did not arrive in London till the 19th.27

There is also a chance that anyone who joined the army on foot did not start in London, but joined the army closer to York, so they were able to keep a slower pace or had to keep a fast

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²⁶ Howarth David, *1066: The Year of the Conquest* (Harmondsworth, Middlesex; New York: Penguin, 1981)128.

²⁷ Howarth David , *1066: The Year of the Conquest* (Harmondsworth, Middlesex ; New York: Penguin, 1981)135.

pace for fewer days. It must be considered that perhaps the members of King Harold's army were in significantly better physical shape than I was and were able to cover twice as many miles every day.

Conclusion

With this perspective in mind, it seems likely that King Harold departed from London with his mounted housecarls as soon as he received news of the invasion taking place in the north, not pausing to regather the recently dismissed Fryd, but sending out messengers to summon them to battle. As he rode north, more men joined him from the surrounding countryside and almost all of them would have been mounted. If any men were on foot, they joined the army close to York, either slowing the King's pace or maintaining a swift pace for the final stretch of the journey. People living in this time period would have been more used to walking long distances on a relatively regular basis than a modern historian. I had some advantages compared to an average person from the medieval period. Some of these include consistent access to food and healthcare and modern footwear. In addition, I am four inches

taller than the average man of the period. That said, I was not accustomed to this specific kind of rigorous exercise and could almost certainly be outpaced by the majority of medieval people. Still, it seems highly unlikely that most medieval men would have been able to keep a pace of nearly 50 miles a day on foot under similar conditions. Regardless, King Harold and his army managed to arrive at York far before anyone expected them and surprised the Norwegian army at Stamford bridge on September 25th.

Though the results of my study support the common narrative among historians about this march, it also provides additional qualitative data on the nature of such marches and physical evidence about the impact long marches may have had on an individual's fighting ability and endurance. In the end, it seems likely that the Englishmen who fought at the Battle of Stamford Bridge rode to war on horseback that September. This march remains a military feat and a testament to the loyalty of the English people to their new King.

	Average points scored per bought	Wins out of 6	Time fought in endurance test	Bouts fought in endurance test	Head
Pre battle	4.5	1	10 min 35 sec	21	Entry
Post battle	4.83	0	5 min 52 sec	13	Entry
Side	Entry	Entry	Entry	Entry	Entry

Table 1. Results of pre- and post-march battles





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