

Hadrian's Wall: Boundary Monument for the Northern Frontier of Roman Britannia

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ABSTRACT

Much hypotheses and over-thinking has taken place over hundreds of years in an effort to attribute purposes for the raison d'être of the wall across northern Britain erected at the behest of the formidable Roman Emperor whose name has been ultimately used to describe this intriguing edifice. Was it built for defence, border control, a demonstration of power or any number of associated intentions as a strategic military device at the extremity of the territorial outskirts of the Great Empire? Many postulations have been advanced by engineers, stone masons, clerks of works, military experts, academics, archaeologists, historians, paleontologists and all the usual suspects. However, I have only sourced one other opinion for its creation put forward by another land surveyor like myself having been offered by my very good friend from the U.S., Mary Root (please note that U.S. Presidents Washington, Jefferson and Lincoln were all land surveyors). Well, it just so happens that I am not just a practising "historical detective" (as I label those in my profession) but I am an active field historian with a Masters in Egyptology from Macquarie University in Sydney. In addition to this area of personal and professional interest, I have done considerable research on ancient Greek and Roman surveying together with a diversion into China's surveyors of antiquity as a background to my paper "The Great Wall of China: The World's Greatest Boundary Monument!" In the present paper, I will be putting forward my offering to the discussion table about the main reasons for the erection of such a notable memorial to the time in the renowned civilisation during the second century. After elaborating further on the wall's design with specific attention drawn to certain features not before grouped together along with a focus on the desires and intentions of Emperor Hadrian himself, there may be some agreement that this iconic line across the topography is a true boundary monument in the ancient Roman traditions as a demarcation line of the northern limit of the Empire's frontier in the north-western territory of its second century enforced tenure.

KEYWORDS: *Emperor Hadrian, Roman Britannia, The Vallum, Corpus Agrimensorum Romanum, Vallum Hadriani, international borders.*

1 INTRODUCTION

"A man's worth is no greater than his ambitions." – Marcus Aurelius.

"It is not what you look at that counts; it is what you see!" – Henry David Thoreau, Philosopher/Surveyor.

On the five occasions that I have travelled to the United Kingdom on only one instance have I gone by road northwards to Scotland during which I only caught a fleeting glimpse of Hadrian's Wall (Figure 1) in 1998. After nearly 19 years I will actually be staying at the town

of Wall in accommodation adjacent to this legendary symbol of Roman times within the area such premises having been constructed with stones from the original structure itself. My subsequent curiosity with this ancient Roman masterpiece was propagated by initial readings of various texts and web articles most of which I procured from the UK itself. Most authors have proposed that the Wall had multiple purposes for its installation dismissive of a principal motive for placement as a defensive barrier or fortification suitable for the Roman forces from which to mount an armed resistance. Through my interpretations of the features of the Wall's design, combined with an instinctive feeling for the mood of the Roman Ruler himself, I will mount a convincing proposition that the main purpose of Hadrian's Wall was as a boundary monument placed to delineate the dividing territorial line for the northern limit of Roman Britannia while also serving notice to would-be interlopers that any transgressions past that line would bring great trauma.



Figure 1: A section of Hadrian's Wall in northern England showing material and construction type.

It needs to be emphasised that my research is not totally exhaustive but I have obtained many excellent publications issued over many hundreds of years, which have provided me with a broad understanding of how many surveyors were employed by the great Empire to maintain and supervise all matters pertaining to the facilitation of civic jurisdiction and orderly inhabitation of the lands over which claims had been established. Roman Surveying Law and Doctrines were well versed and enforced by a surveying profession which bore great esteem and respect along with a dependency on such experts to solve boundary disputes and supervise the creation and operation of new towns, roads and aqueducts considered vital for the convenience and livelihood of its citizens and vast military regiments.

2 JULIUS CAESAR INVADES BRITANNIA

“Veni, vidi, vici.” (“I came, I saw, I conquered.”) – Julius Caesar (47 BC).

The first incursions by Rome across the sea into Britannia were made by Julius Caesar in 55 and 53 BC with continuing intensity over the years under the reigns of subsequent emperors Augustus, Tiberius and Caligula. It would not be until almost another 100 years before the Romans finally conquered Britain in 43 AD when Claudius dispatched four legions to finalise the job, and even from then on there was still formidable opposition to keep the usurping

legions south of what is considered Caledonia (visa vie later most of Scotland) (Shotter, 1996, p. 15). There was the perception that there was little wealth or suitably arable lands upon which income could be generated added to the tenacity of the battle-hardened highlanders whose fight-to-the-death toughness would make many a seasoned soldier reluctant to take them on in their own surroundings. These eras in Rome's expansive ambitions are not the basis for this paper but they do serve as a salutary source as to what drove Hadrian to bring about the laying of what has become a renowned landmark of the Roman Empire at its mightiest during the second to the fourth centuries after Christ. What has been labelled "the fall" of the Roman Empire was already well into its death rolls by the time the Romans ultimately evacuated their Britannic stronghold in 411 during the rule of Emperor Jovinus and his Consul Honorius et Theodosio.

3 HADRIAN BECOMES ROME'S EMPEROR

"Better than a thousand hollow words is one word that brings peace." – Buddha.

If "word" was replaced with "wall" in this quote, it may go some way to explain Hadrian's strategy to put up his wall in northern Britannia on his 122 tour of his western colony.

In 117 AD, Rome's second "friendly" regent Trajan passed away, leaving control of Rome's extensive holdings to his successor Hadrian who was 41 (born Publius Aelius Hadrianus in 76, possibly in Italica which is now part of Spain – but it has been suggested that in fact he was born in Rome itself?) when taking over control. Rebadging himself as Caesar Traianus Hadrianus Augustus, the new ruler clearly portrayed his traditionalist attitude with a distinct bias towards the classical culture of the ancient Greeks along with archaic literature and writings of folklore as well as displaying his veneration for his First Emperor Augustus through the inclusion of his name in that which he had adopted. The biographer of Augustus Suetonius (Graves, 1965) says that he was a "dedicated devotee of Octavian-Augustus, and had a bronze statuette of Octavian in his bedroom." I am sure that his wife was delighted! Shelving the expansionist policies of some of his predecessors, which had stretched the capacity of the governing regime to maintain control and order at the extreme edges of those regions far removed from the Rome-based Senate responsible for its existence, Hadrian saw the need for more passive measures to be employed.

The new ruler embarked on a program to consolidate the current holdings of the dominion in order to minimise the exposure of invasions and raids against the thinly spread legions guarding the vulnerable outer limits of the Empire's furthest perimeters. Hadrian had a resolute character as well as having been remembered as a leader with moderation along with Nerva (96-98), Trajan (98-117) and his successors Antoninus Pius (138-161) and Marcus Aurelius (161-180), collectively referred to as "The Five Good Emperors" (see Appendix D). In a paradox of his personality, his moderation in areas of governance was matched by his extravagance in public works such as the enlargement of The Pantheon and, of course, the placement of the Britannic Wall. The concept of territorial limits had more to do with the identification of lands currently under Roman control and *those destined to be*, rather than a declaration that the lines identified would remain at the outermost edges of the Empire. There was also a paranoid perception, sometimes justified, that the far removed generals at a tyranny of distance would be driven to forge alliances with those nearby chieftains outside the designated lines and cut ties with the Empire. Emperor Domitian (81-96) introduced frontier works in Germany with timber towers linking forts, while Trajan added fortlets prior to

Hadrian erecting a timber palisade. Where naturally occurring major landscape features such as rivers, cliffs or water table crest lines existed, they were charted as the boundary of the Empire lands for the outside regions.

In legalistic parlance, rightful ownership of property is demonstrated by what are referred to as “Acts of Dominion” such as maintaining an estate in good order, paying the required Council rates and land taxes (if applicable), plus various other actions but with one very specific action being tantamount to secure a right of ownership which is the construction of a dividing barrier between one claimant and his neighbour usually being a fence or wall along the property line of subdivision. Hence Hadrian saw an urgent need to clearly demarcate his line of dominion along the northern frontier of his western colony of Britannia. Done without mutual consent, clearly the non-consensual parties could only regard the placement of this Wall as an act of aggression or at the very least a provocative signal to future confrontations by the angry rebels.

Through his extensive tour de force inspecting his absolute realm to its entirety, Hadrian formulated a capital works program to clearly designate the limits of his power through the placement of artificial lines of demarcation where no natural geography presented itself to adopt as suitable frontier perimeters known as “limes” which were those external boundaries as compared with “limites” being dividing lines between provinces within the overall total regime. During his visit of 122 AD to Britannia, he oversaw the erection of the great construction dividing wall 80 Roman miles (a Roman mile was 5,000 Roman feet being equivalent to 4,854 Imperial feet – a pace was equal to 5 Roman feet) from Wallsend-on-Tyne to Bowness-on-Solway along the northern territorial rim of his western colony (a distance of about 120 km – see Figure 2).

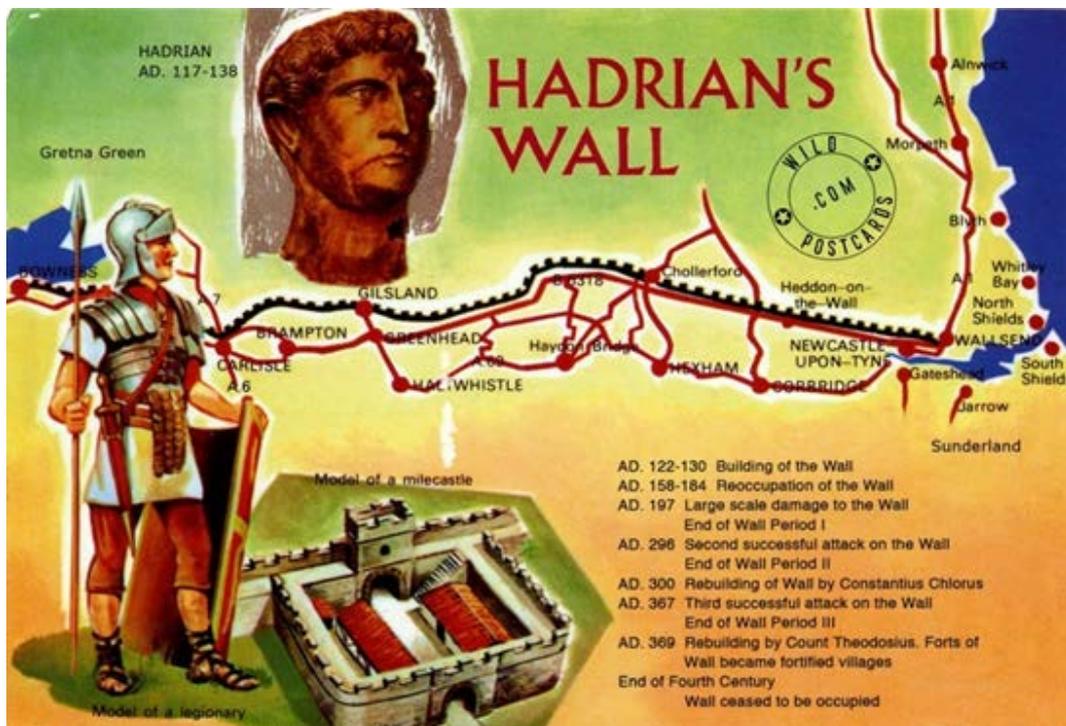


Figure 2: A postcard showing Emperor Hadrian's bust looking over his impressive wall.

The new leader was determined to enforce “peace through strength” thus devoting his efforts to erect clear symbols of might, enclosing all that was his. In so doing, he was giving defiant

notice to any tribes outside those fortifications who contemplated crossing these barriers with ill intent that they most certainly would attract the full retribution of the Roman legions in response. Clearly the Wall was solidly and substantially built but with the relatively sparse positioning of fortlets (with gates) between quite extended stretches of narrow stone walls it was far from impregnable. The gates placed were to allow passage to and from the adjoining lands with a tacit intent of frontier control for selective admissions and exclusions as decreed.

For many years after the refocus directed towards the royal edifice since the 17th century “rediscovery” of the Wall, there was much dispute about who actually issued the decree to bring about its construction but subsequently two powerful items have emerged to prove conclusively that its paternity belongs to Hadrian himself. Hadrian’s alleged biographer Aelius Spartianus from the *Scriptores Historiae Augustae* (translated as *Augustan History*), estimated to have been compiled sometime between AD 285 and 335, declares in *Hadrian XI*, 2-6: “And so, having reformed the army quite in the manner of a monarch, he set out for Britain, in 122. There he corrected many abuses and was the first to construct a wall, eighty miles in length, which was to separate the barbarians from the Romans.” Then, as though the ancient emperor was watching over the modern proceedings and discussions concerning the archaeological investigations and restorations of his paean glorious in 1715 at Hotbank Milecastle No. 38, an inscribed slab of stone (now held in the Great North Museum, Newcastle – see Figure 3) was discovered dated to the time of Britannic Governor Nepos from 122-126 AD which in Latin states: “Imp(eratoris) Caes(aris) Traiani / Hadriani Aug(usti)/ Leg(ion) II Aug(usti)/ A(ulo) Platorio Nepote leg(ato) pr(o) pr(aetore)”, translated into English saying “Of the emperor Caesar Traianus Hadrianus Augustus, the Legion II Augusta (built this), while Aulus Platorius Nepos was legate with powers of a *praetor*” (Fields, 2010, pp. 26-27).

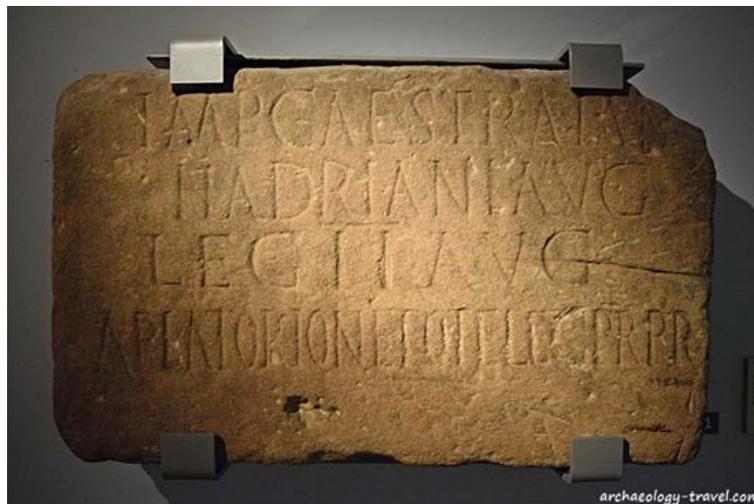


Figure 3: Stone inscribed c. 122-124 to verify that Hadrian’s Wall had been authorised by the Emperor personally around 122, that section having been built by Legion II Augusta.

Indeed another monumental artefact bore witness to the approximate completion date of the Wall around 136, adding testimony to one of the other total of three legions which carried out the massive project found near the east gate of Moresby fort translated to read: “(This work) of the Emperor Caesar Trajan Hadrian Augustus, father of his country, the XX Legion Valeria Victrix (built)” (stone dated 128-138). This was one of the most sensational finds in the history of the archaeological investigations of Hadrian’s Wall, proving beyond any other speculation about someone else ordering its construction that Emperor Hadrian was its patron.

Another parallel for a stone wall erected as a solid symbol of ownership to those outside hordes are the early stages of China's Great Wall initiated by the first Emperor around 200 BC. The wall's height and breadth could not prevent them crossing it, but any such breach of the stone ramparts was a sure passport to big trouble for those warlike groups not remaining on their side of it. The more well-known Great Wall of China with high walls lined with castellations along wide interconnecting fortifications was modified and amplified to this impressive megastructure during the Ming Dynasty (1368-1644) but this battle-ready bastion saw very little wartime activity during the tenure of this legendary ruling clan famous for their ornate blue pottery (Figure 4) (Brock, 2014).



Figure 4: A section of the Great Wall of China showing some fortlets.

4 THE APPARENT ENIGMA OF THE VALLUM: IT'S REAL FUNCTION

“Once we accept our limits, we go beyond them.” – Albert Einstein.

Many writers have dismissed the inclusion of the Vallum as inexplicable in its function. The Vallum is a trench dug inside the south side of the Wall with earth mounds lining the top edges on both sides, running for its entire length apart from where natural features like rocky outcrops or river banks interrupt its progress (Figure 5). One author (Carter, 2014) states that it has been surveyed like a road but is unlikely to have been used for this reason, while another (Fields, 2010, p. 15) pronounces it may have been included as an additional defensive mechanism as an obstruction to invading armies. At its depth and location in addition to the many lengths of narrow wall too thin to wage even defence by a single line of archers, let alone catapults or pots of boiling oil, it would appear less likely that the Vallum could serve any credible second line of resistance after this first ineffective barrier had been breached by any sizeable swarms of invading marauders.



Figure 5: Cross sectional diagram of the Wall construction.

If I may digress now to a much earlier archaic period in pre-Roman history in support of my suggestion that the Vallum in fact formed part of the traditional techniques of construction adopted for the creation of boundaries first attributed to Aeneas who is said by mythology to be the direct ancestor of Romulus and Remus, the mythical wolf-suckling twins who founded Rome.

As an illustration of the extent to which the Romans incorporated the establishment of new towns into their folkloric sagas, the writer Virgil describes how Aeneas founded a city in Sicily: “Meanwhile Aeneas marks the city out by ploughing; then he draws the homes by lot.” All Roman surveyors were aware through their training of the old custom whereby the limits of a new town were marked out by the consul by ploughing a furrow around it. Another author Ovid, a studier of the law including that pertaining to surveying, said that the dividing up of land with balks (*limites*) by a “careful measurer” (*cautus mensor*) emphasised the importance attached to the art of surveying.

The line drawn around a town was referred to by Virgil as *sulcus primigenius* (“the original furrow”) and was monumented with boundary stones according to Tacitus and Plutarch. Actual boundary stones have been discovered at Capua, placed during the Second Triumvirate and bearing inscriptions “By order of Caesar (Octavian), on the line ploughed”. When the Emperor wanted to extend the limits of Rome, he maintained the traditional inclusion of the “original furrow” placing inscriptional carved boundary stones which are still present today in evidence to his realignment of the boundaries of the eternal city.

Revered first Emperor Caesar Augustus so much cherished the ancient folklore of Rome that he had a Denarius coin struck dated c. 29-27 BC with his bust on the obverse and the ploughing of Rome’s first boundary furrow on the reverse during his reign for the citizens to bear recognition of their hallowed traditions (Figure 6). Emulating his legendary idol Caesar Augustus, Hadrian was not going to miss a chance to present himself in a similar portrayal of himself as the City Founder ploughing the new boundaries with a team of oxen on a coin from Aelia Capitolina (Jerusalem) in about 131-136 AD in a very clear demonstration of his admiration for his predecessor together with the folkloric divine creation of a *limes* in the form of a Vallum or Pomerium (Figure 7).



Figure 6: Caesar Augustus coin (29-27 BC) with the ploughing of Rome’s first boundary furrow.



Figure 7: Hadrian coin (c.131-136 AD) with the symbolic ploughing of a new first boundary furrow.

Indeed the folklore of the birth of Rome itself said to be in 753 BC has Romulus and Remus as direct descendants of the Trojan Prince Aeneas founding the new city. One version of the myth has Romulus cutting a *sulcus primigenius* (first furrow) around the perimeter of where he decreed the city limits to be incorporating the Palatine and Capitoline Hills, just as his ancestor Aeneas had done in other towns before him in what is believed to be an Etruscan ritual which was inclusive of the proposed line undergoing selection and final placement by auguries exercising divine control. In this recital of the folkloric epic, when Remus ridicules this action by his brother by jumping back and forth over the sacred furrow Romulus kills him in what must be regarded as an extreme act in border control indeed. Subsequently a substantial wall was erected outside this trench with the area between the inside of the wall up to and including the ditch termed “The Pomerium” within which building construction was forbidden together with other bans prohibiting any legal actions otherwise enforceable within the inner property zone by duly empowered judicial appointees. Entry from outside this line of strong delineation could take place only with permission granted by those authorities entrusted with the protection of the livelihoods of the citizens of Rome. In fact, the dictator Lucius Cornelius Sulla expanded the limits of the City of Rome in 80 BC in an act of absolute power with his new town limits further marked out by white marker stones called *cippi* which were commissioned by Claudius to delineate his extension of The Pomerium, some of which survey monuments are still in situ today as recorded by Tacitus and outlined by Aulus Gellius.

The Romans even had a god called Terminus, the God of the Boundary Stones closely affiliated with the principal deity Jupiter. Indeed it is the Romans who introduced the Feast of Terminalia which is an annual ceremony with pomp, pageantry and identification of the boundary stone monuments designating the area within which protection is guaranteed and order maintained. Boundary stones took many different forms with particular types of monuments being set to indicate the nature of the tenure under which the enclosed properties were held (Figure 8).



Figure 8: Terminus as a boundary stone.

Another absolutely splendid effort in scholarly publishing is Campbell's (2000) handsome volume on "The Writings of the Roman Land Surveyors" (in Latin *Corpus Agrimensorum Romanum*), which most astutely translates the Latin texts of the Roman authors who compiled a veritable instructional handbook on how surveying was to be conducted within the Roman Empire. This work is extraordinary and has given me a detailed appreciation for the technical and judicial expertise which was vested in the surveyors privileged to undertake such activities for the administratively thorough control imposed upon its charges. I need to clarify the interpretation of the word *Vallum* as literally it means a "mound of earth" but in the context of Hadrian's Wall it more specifically describes the trench following the line of the *limes* or boundary line which has mounds of earth along its top edges just as the *sulcus primigenius* ("first furrow") had placed along its upper edges formed from the earth excavated from the trench itself. To my amazement and delight on page 273 of Brian's superb book, he deciphers the original Latin text in the Section "...Discussion About Lands" to say "*Villa* comes from *vallum*, that is, a heap of earth, which is normally established in front of a *limes*" which is actually the borderline of the outside extremity of a Roman frontier, dividing it from international lands held by neighbouring nations or peoples. Furthermore on page 263 under the title "Here Begins a Discussion of Boundary Markers Set Up in Various Provinces" is stated:

"I have established a small ditch, which was dug out, on a boundary as a marker. Bigger ditches you will also certainly find as boundary markers. You will undoubtedly discover a raised *limes*, that is, a balk. I have built walls from limestone to mark boundaries. I have established banks that have been dug out to mark boundaries. You will find piles of earth marking boundaries."

These incredible discoveries add firm weight that the *Vallum* incorporated within the design specifications for Hadrian's Wall was following those strict instructions laid down in the Roman Surveyors Instruction Manual (Campbell, 2000) for the presentation of an international border line. This invaluable nexus to the times of the Roman surveyors translates a voluminous corpus of texts providing all historians but more especially surveyors with a detailed overview of what types of boundary marking were carried out, classifications of land types, as well as all manner of natural feature which could be adopted as boundary lines where suitable. There are even descriptions and diagrams of what style boundary markers and boundary stones were to take in given circumstances. For any interested surveyor historian, this publication is a must-have.

In an historical essay in what has been termed by its composer as "the puzzle of the Vallum", this scholar went one giant step towards explaining "the inexplicable!" Published in a 1921 issue of a journal called "The Vasculum", R.G. Collingwood (1921) titled his work "The Purpose of the Roman Wall" in which he says "...the continuous line was at first designed to serve simply as a mark to show where the Roman territory ended." Precisely Mr. Campbell, as any suggestion that the Vallum was a defensive earthwork is itself indefensible. For rampaging bands of villains it was merely a ditch with a speed hump. He goes on to reinforce: "The puzzle of the Vallum simply disappears when it is suggested that it was not a defensive work but a frontier-mark, a line indelibly impressed upon the earth to show the wandering native where he might not go without accounting for his movements." I could not have said it better myself.

Following this historic study came "The Turf Wall of Hadrian 1895-1935" where Simpson and Richmond (2011) carved cross sections through areas in the western section of the Wall

where there was a suspected earthen rise. They ascertained conclusively that there was a turf wall built before any stone wall emplacements or forts so it can be stated that the zone west of the whinsills had an earthen wall first, well before any stone structure had been laid down. Now with the timing right for the construction stages of Hadrian's Wall, I will give my pronouncement of the dating and purpose of the Vallum.

I am now going to propose a more definitive reason and origin for the placement of the Vallum combined with its true purpose. It surprises me that none of these astute writers who are perplexed by the Vallum have seized upon the very first indicator of why this structure was an essential element of this territorial border line – the Roman names first applied to it were the Vallum Hadriani or the Vallum Aeliani or Aelium (Hadrian's family name was Aelius). With strict adherence to the instructions issued to the Roman land surveyors to delineate a *limes* (international line of demarcation), it was an explicit directive to make a Vallum (literally "earth mound") (Campbell, 2000, p. 273). Naturally, to form the earth mound required to construct this visible line of subdivision the quickest way available, the legionary project supervisors devised the earthwork technique of digging the required quantity of material from the ground, leaving a trench alongside, and then stacking the spoil solidly along the edge of this continuous excavation. Hence, once again illustrating the interpretation of the meaning of a Vallum evolved to include the trench and the mound in its description.

With the benefit of the aforementioned facts to corroborate my following pronouncement, I propose that the Vallum was the first inclusion in the design for the *limes* (boundary line) to demarcate the northern limit of Rome's Empire with the famous Wall an additional barrier added to provide a show of power. The western part of this *limes* was initially placed consisting of a Vallum only until the stone creation was extended sometime later to complete the imagery of dominance. Thus the creation of the Vallum was the first step in the establishment of this northern borderline, once again with the sturdier stone divider being set at some time well after the first delineator had been laid down.

5 WALL DESIGN AND CHARACTERISTICS

"Make the workmanship surpass the materials." – Ovid (43 BC - 17 AD).

A burning question that has divided all scholars on the planning, design and project management of this major construction in the Roman capital works program has been just how much direct personal association the Emperor Hadrian himself had in its detail and execution. Another author with whom I forthrightly concur is Paul Frodsham (2013) who mounts a compelling argument in his book "Hadrian and His Wall" that the architecturally inclined Ruler not only had input into the pre-planning of the Wall's design but also personally directed some aspects of the building work while on his site inspection during the Britannic leg of his Royal Tour. With such a notion in mind, it is not hard for me to further incorporate Hadrian's penchant for history and tradition as alluded to previously in hypothesising that the Vallum was added during the erection of the Wall at its earliest incarnation to create the true legendary image of a boundary line as had been initiated by Aeneas, Romulus and a host of his predecessors in very much a recreation of The Pomerium originally enclosing the Eternal City of Rome itself. Such a final masterpiece with historic overtures would most certainly have pleased the man mostly honoured with the exceptional monument bearing his name for posterity to admire and marvel upon.

Within the wall were incorporated what have been called milecastles due to their occurrence at every Roman mile thus totalling 80, with two turrets in between each of these structures to provide look-out posts at each intervening 1/3 Roman mile thus adding up to be about 160 thereto. Apart from offering a view to the north to detect foreign troop movements, all of the manned stations looked more clearly towards the south to allow for a continuous ability to forewarn regiments of soldiers camped within the forts and villages of impending assault (see Appendix A for lineal conversions to imperial and metric units).

As has been irrefutably established by many more learned of the Wall than I, for a considerable percentage of its length it was not a fortified bastion or even bore formidable dimensions to singularly deflect any major incursions. The size of the Wall varied from a nominal height of 10 feet (3 metres) with an equivalent width up to 20 feet (6 metres) high, also with a matching girth, so for much of its coverage the sections with the lesser height presented no significant restriction to those warring groups who wished to create conflict on their foreign oppressors.

A modern example of a trench being placed to demonstrate the division between two countries can be found even today on the U.S./Canadian borderline at the north-western U.S. town of Blaine. Even though the depth and width of the sunken barrier does not preclude access, there will be a very interested U.S. border patrolman always staking out a continuous vigil on the southern side of the border, keeping a very concerned eye over anyone making an unauthorised or uninvited crossing of this line of division with a similar intent as those Roman sentries who manned the turrets along the lengths of Hadrian's Wall (Figure 9).



Figure 9: U.S./Canada borderline which is the unfenced trench at Blaine in Washington State.

6 SURVEYING AND BUILDING THE WALL

“Every wall is a door” – Ralph Waldo Emerson.

I am sure that Hadrian had no desire to make his Wall anything like a door to encourage hostile northern tribes to cross into the Roman domain, but the deterrent qualities of his Wall were not so physical rather than more indicative, for in some ways his Wall was very passable not representing a true decisive barrier to opposing camps. The three legions assigned to erect this symbol of territorial division were II Augustus, VI Victrix and XX Valeria Victrix, but upon its completion it was manned by auxiliaries rather than the legions which were called to other pressing duties somewhere removed within the vast extent of the far spread Roman

Empire. There is some inscriptional evidence for a detachment of the British Fleet making some of the granaries at the forts.

All materials used on the Wall construction were quarried locally, thus giving the final product a variety of finish only possible through the utilisation of natural resources sourced from the surrounding geological deposits with their distinctive evolutionary origins and nearby timber where such wooden carpentry was included or necessary.

Hill (2006) estimated just how many legionary surveyors were available to do the task of surveying the long straight sections of the wall construction as well as the likely work schedule, providing an estimated time for completion of the survey work required. For the reconnaissance and surveying required to facilitate site selection and final positioning of the Wall, I have formulated the Survey Work Statement for the activities necessary for a project of this proportion. Departing from any possible ritual selection of the Wall's location by the Consul or auguries, the ultimate function of this divisional barrier was to signify the limit of territorial governance while also setting an adequate line of sight both northerly and southerly for the sentries on watch to detect any likely trouble which may have been brewing along with the dual capacity to sound the alert of any likely attack.

Later in this section I will inform you of how many surveyors were available to each Roman legion as indicative of how much manpower was devoted to the vital capacity of carrying out survey requirements for the Roman nation throughout its widely distributed colonies.

The first duty was to survey and fix the exact line of the Wall, such location governed by the preceding parameters of sight lines and prevailing topography taking into account interceding natural features which themselves could serve as obstructions to foreign access such as cliffs, riverbanks and whinsills. Due to the extensive period of time during which the nearby land had already been under occupation, it is quite likely that the preliminary scouting party had a fairly definitive idea of where the Wall would be best placed with the crags of the whinsills dividing the future work into western and eastern sectors, punctuated by this extant natural barrier building westerly towards the Solway Firth and in the opposite direction to the Tyne River.

During this reconnaissance the surveyors would have left small rock cairns, possibly with a small line of stones in the direction towards the next visible marker or landmark, as well as stakes between which the later construction survey parties could align straight sections of wall and make realignments for angles where necessary. As these probably wooden stakes may not have been painted, one contemporary Republican author named Polybius (200-118 BC) on the Roman surveyors observed these men placing stakes with flags on them for easier sighting against a camouflaged backdrop of similarly textured vegetation. The ultimate route chosen ran between the banks of the River Tyne near Wallsend on the eastern seaboard and the shores of Solway Firth at the western end. Hill (2006) estimates that there were about 10 *mensores* (surveyors) present in each legion, forming part of a group known as the *immunes* as with their fellow professional compatriots such as architects, engineers and builders they were immuned from carrying out other military work due to the requirements of their designated speciality. The surveyors were called *mensori* (singular *mensore*) with a team of them referred to as a *metatore* (h2g2, 2016). This meant that there was a surveying pool of around 30 surveyors to lay out the straight lines where they could fit the landscape as well as indicating the spots for the erections of milecastles (every Roman mile) with two intermediate

turrets (or look-out towers) at around 1/3 mile separation in addition to selecting sites for troop encampments for the total workforce.

Without reiterating the specifics of Hill's (2006) calculations, I will summarise the final approximations of the various sections into which the legionary surveyors may have split their overall task. In Wall miles, the likely sections surveyed were Wallsend to Ouseburn (3 miles), Ouseburn to Dere Street (18 miles), Dere Street to North Tyne (5 miles), North Tyne to the eastern end of Whin Sill (MC34) (7 miles), Whin Sill (13 miles), Western end of Whin Sill (say MC46) to Irthing (3 miles), Irthing to the Eden (17 miles), and Eden to Bowness (14 miles). Hill's (2006) predicted time to complete the initial survey, setting out the milecastles and turrets most probably from one end together with straight alignments and angles when required could have been done in about a month. Subsequent construction of the Wall itself is believed to have taken at least eight (8) and up to fourteen (14) years with some later modifications being added after this time where such additions were regarded necessary. Thus the anticipated completion date for the Wall came only two years before Hadrian's passing, which meant that he never got to finally witness his testimonial before his death.

7 HOW LONG DID HADRIAN'S WALL LAST?

“The reward of a thing well done is having done it.” – Ralph Waldo Emerson.

Between 139 and 140 (or some say 142) Hadrian's successor Antoninus Pius had what is now known as The Antonine Wall built of earth and timber substantially further north at about 140 miles (224 km) by road than the Wall we are more concerned with, connecting a shorter overall distance of 37 miles (59 km) from the Firth of Forth to the Firth of Clyde (Figure 10).

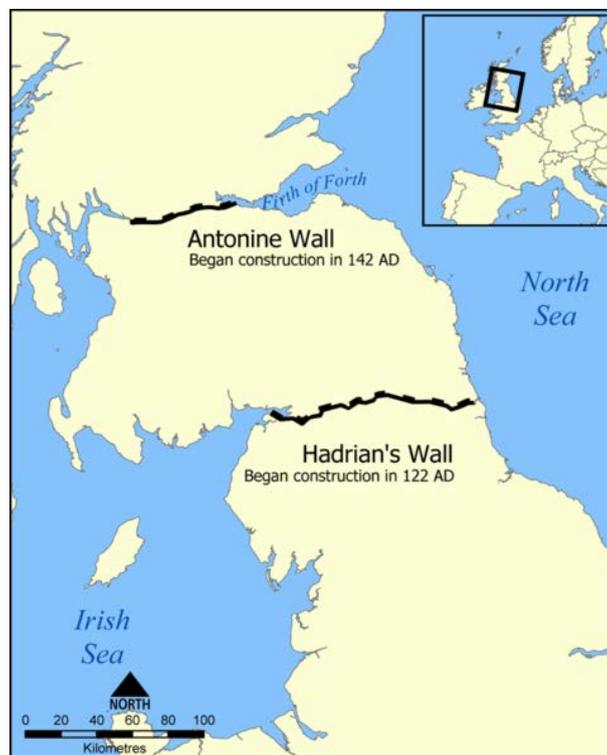


Figure 10: Map showing the location of Hadrian's Wall and the later Antonine Wall.

Once again the antiquarian Roman name given for this newly positioned *limes* was the Vallum Antonini, and this new construction conformed rigidly to the written regulation to make it a Vallum with the compacted earth mound along the rim of the dug-out channel. This earth wall standing at approximately 10 feet (3 metres) tall with an average width of 16 feet (5 metres) made this structure an even less imposing deterrent to likely invasion than Hadrian's Wall ever did. As monitoring and observation of foreign troop movements was vital, watch towers and fortlets made of timber were inserted along this shorter territorial limit around 100 miles (160 km) directly north of its more impressive southern counterpart. Even though it had been further strengthened with the insertion of more forts along its length, the order to abandon this later less substantial barrier was given in 163 with a troop withdrawal back to the more substantial wall. With uncertainty there are some who attribute this retreat to an uprising by the Brigantes with 15 years of revolts ensuing with other tribes joining the feisty Caledonians.

Periods of rebuilding Hadrian's Wall due to damage incurred during this resistance reinforced the importance of this northern bastion in Rome's colonies along with providing it with greater longevity, which allows us to enjoy and study it in the 21st Century. Along with a letter sent in 410 from Roman Emperor Honorius to the Roman Britannic forces (Hodgkin, 1886) "to look to their own defences" against the accelerating hostility from the Saxons, Scots, Picts and Angles came a refusal by Rome to send any reinforcements thus sounding the death knell for Roman Britain. However, Hadrian's Wall had represented the symbol of the northern frontier of the Roman Empire in the West for nearly 300 years, being now a celebrated treasure for archaeologists, historians and land surveyors to swoon and walk over instead of the hordes of angry tribesmen intent on vengeance during its time as a boundary divider (see Appendix C for a medieval map showing where the antiquarian map maker believed the two Roman Vallums to be found).

8 SURVEYORS: ROME'S ULTIMATE LAND EXPERTS – LET'S MEET ONE!

"Waste no more time arguing what a good man should be. Be one!" – Marcus Aurelius.

We know that surveyors were on the list of *immunes* because a list of specialists for the legions was compiled in the sixth century in a law code copied from an earlier register put together by a man known under many similar aliases as Taruttiensus Paternus, Tarruntiensus or Tarrutenius who was possibly the same individual mentioned by writer Dio as *ab epistulis Latinis* (secretary for Latin correspondence) to Marcus Aurelius, then acting as independent military commander in 179 AD. The military manual written by this man titled *De Re Militare or Militarium* listed the special taskers to be stone cutters, carpenters, glass workers, plumbers, cartwrights, blacksmiths, coppersmiths, lime-burners and charcoal-burners, surveyors and ditchers as well as several clerical *immunes* keeping legionary records of strength, enlistments, discharges, transfers, expenses and pay records. *Architecti* were included as essential with two named as Amandus at Birrens and Aelius Verines at Mainz.

A most exciting discovery was a record of the discovery of a stone altar in 1709 at a place called Coniscliffe near Piercebridge where there was a Roman fort (now ruins remain) which unfortunately is now lost. From Figure 11, the inscription is interpreted to say:

D(eo) M(aris)
Condati
Attonius

Quintianus

Men(sor) evoc(atu)s imp(eratum)

Exius(su) sol(vit) l(ibens) a(nimo)

This inscription translates to be: “To the god Mars Condates, Attonius Quintianus, **Surveyor Evocatus**, gladly fulfilled the command by order.” What a brilliant find decoded by Gale, Thoresby and Horsley said to be placed between 43 and 410 AD, so most probably during the time frame associated with Hadrian’s Wall (Vanderbilt, 1995).



Figure 11: Stone altar of Attonius Quintianus.

More thrillingly, it was funded by a surveyor who is purported to be at the time a *Mensor Evocatus* (which is a military specialist having completed in excess of 16 years’ service purported to be receiving a most impressive salary of 200,000 sesterces per annum) and may even have attained the rank of chief centurion or *praefect* (which is of great eminence within the realms of the Roman legions). You may be curious to know just how it is known that his salary was this high. The inscription shows “EXCC” after “MEN”, which is translated/deciphered to be *ex ducenario* which is in fact an officer earning this sum of remuneration, but there is alternative conjecture to suggest that it may also refer to *evocatus* as before described. To understand the value of the Roman currency at the time that this surveyor lived, the reader is referred to Appendix B. However, I will quantify our man’s salary through comparisons with other amounts paid to differing levels of officials and legionaries. From the time of Domitian (81-96 AD) a legionary was paid 1,200 sesterces per annum, a Centurion 20,000, a Chief Centurion 100,000, a Procurator 60,000-100,000 while a Senior Proconsul, the Prefect of Egypt and a senior Legate were on a hefty 400,000 per annum. A small farm was valued around 100,000 while an upmarket seaside villa in Italy or large estate in the same country would set you back 3 million sesterces. Thus our man Attonius was doing very well indeed, so it is not unexpected that another erudite Roman official would portray the land surveyor in the image of some sort of wizard or great mediator in his illustrious 6th century dissertation. It is heartening to note that a Councillor in some Italian towns was paid 100,000 per annum being half of what our surveyor Attonius was believed to be worth.

Without having to explain the indispensable work done by all of our illustrious colleagues, it is time for me to once again cite the description of a Roman official from a time late in the civilisation’s existence even after the crushing defeats at the hands of Vandals and Visigoths, a time when it could be contemplated that all authority had been usurped from those legionary surveyors who were part of an elite squad of professionals known as “the immunes”. Enriching the status already attained by the land surveyors of Rome during the mightiest era

of the imperious nation, it is not surprising that erudite and astute Roman officials such as Cassiodorus when referring to the *agrimensore* (land surveyor) could proclaim: “He walks not as other men walk!” The entire quotation of this very wise and astute man can be found in Brock (2012) in order to gain a full appreciation for just how well regarded Roman surveyors were combined with the awe with which their activities were held in Roman society.

9 CONCLUDING REMARKS

To summarise my analysis of Hadrian’s Wall, I now pronounce that the Wall had a principal function as a boundary demarcation monument, which designated the limit of the territory for which Rome claimed jurisdiction and control over while being built with symbolic recognition for the traditional formation adopted by the mighty Empire for the limits of its cities and lands from the very first *sulcus primigenius* marked out by the Founder of Rome which included such a first furrow or trench adjoining the earthen mound known as the Vallum which was the actual boundary of the *limes* or international boundary line for the Roman Colony of Britannia.

For such an idyllic model of Roman greatness in engineering and surveying to be so widely recognised by anyone anywhere in the world, truly links our profession with another legendary landmark that serves as testimony to all who hear about or study this ancient edifice to the skills that surveyors have demonstrated from the earliest times of history, even before such feats were recorded by the first historians (Figures 12 & 13).



Figure 12: Hadrian’s mausoleum in Rome at the Castel Sant’Angelo.



Figure 13: Hadrian, the Great Emperor.

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APPENDIX A

Table of Roman Standards of Distance Measurement:

1 Roman inch = *uncia* = 0.97 Imperial inch = 24.6 mm.

1 Roman foot = *pes* = 0.97 Imperial foot = 0.296 m.

1 pace (*passus*) = 5 Roman feet = 4.854 Imperial feet = 1.48 m.

1/8 Roman mile = 125 paces = 1 *stadium* = 625 Roman feet = 607 Imperial feet = 185 m.

1 Roman mile = 1000 paces = 1 *miliarium* = 5000 Roman feet = 4854 Imperial feet = 1479.5 m.

1500 paces = 1 *lewa* = 7500 Roman feet = 7281 Imperial feet = 2219 m.

APPENDIX B

Table of Roman monetary values:

1 gold aureus = 25 silver denarii = 100 bronze sestertii = 400 asses.

1 silver denarius = 4 bronze sestertii = 16 asses.

1 bronze sestertius = 2 dupondii = 4 asses.

1 dupondius = 2 asses.

1 as.

APPENDIX C

Reproduction of a 1250s Map of Britain by Matthew Paris (who was a monk at St. Alban's Abbey) showing both Hadrian's Wall and the Antonine Wall despite being depicted incorrectly in a geographical perspective.

APPENDIX D

List of Roman Emperors during the Imperial Period from Augustus to the abandonment of Hadrian's Wall in 411 AD (from the Department of Greek and Roman Art, The Metropolitan Museum of Art, October 2004):

Julio-Claudian Dynasty	27 BC – 69 AD
Augustus	27 BC – 14 AD
Tiberius	14 – 37 AD
Gaius Germanicus (Caligula)	37 – 41 AD
Claudius	41 – 54 AD
Nero	54 – 68 AD
Galba	68 – 69 AD
Otho	69 AD
Vitellius	69 AD
Flavian Dynasty	69 – 96 AD
Vespasian	69 – 79 AD
Titus	79 – 81 AD
Domitian	81 – 96 AD
The Five Good Emperors	96 – 180 AD
Nerva	96 – 98 AD
Trajan	98 – 117 AD
Hadrian	117 – 138 AD
Antoninus Pius	138 – 161 AD
Marcus Aurelius	161 – 180 AD
Antonine Dynasty	138 – 193 AD
Antoninus Pius	138 – 161 AD
Marcus Aurelius	161 – 180 AD
<i>with</i> Lucius Verus	161 – 169 AD
Commodus	177 – 192 AD
<i>with</i> Marcus Aurelius	177 – 180 AD
Pertinax	193 AD
Didius Julianus	193 AD
Pescennius Niger	194 AD
Severan Dynasty	193 – 235 AD
Septimus	193 – 211 AD
Caracalla	211 – 217 AD
<i>with</i> Geta	211 – 211 AD
Macrinus	217 – 218 AD
Diadumenianus	218 AD
Elagabalus	218 – 218 AD
Alexander Severus	218 – 235 AD

The Soldier Emperors	235 – 305 AD
Maximinus I	235 – 238 AD
Gordian I and II (in Africa)	238 AD
Balbinus and Pupienus (in Italy)	238 AD
Gordian III	238 – 244 AD
Philip the Arab	244 – 249 AD
Trajan Decius	249 – 251 AD
Trebonianus Gallus (<i>with</i> Volusian)	251 – 253 AD
Aemilianus	253 AD
Gallienus (<i>with</i> Valerian)	253 – 260 AD

Gallic Empire (West)	
following the death of Valerian	
Postumus	260 – 269 AD
Laelian	268 AD
Marius	268 AD
Victorinus	268 – 270 AD
Domitianus	271 AD
Tetricus I and II	270 – 274 AD

Palmyrene Empire	
Odenathus	c. 250 – 267 AD
Valballathus (<i>with</i> Zenobia)	267 – 272 AD

The Soldier Emperors (continued)	
Claudius II Gothicus	268 – 270 AD
Quintillus	270 AD
Aurelian	270 – 275 AD
Tacitus	275 – 276 AD
Florianus	276 AD
Probus	276 – 282 AD
Carus	282 – 283 AD
Carinus	283 – 284 AD
Numerianus	283 – 284 AD
Diocletian (<i>and</i> Tetrarchy)	284 – 305 AD

Western Roman Empire	
Maximianus	287 – 305 AD
Constantinus I	305 – 306 AD
Severus II	306 – 307 AD
Constantine I (The Great)	307 – 337 AD

Eastern Roman Empire	
Diocletian	284 – 305 AD
Galerius	305 – 311 AD
Maxentius (Italy)	306 – 312 AD
Maximinus Daia	309 – 313 AD
Licinius	308 – 324 AD

Constantine Dynasty	337 – 364 AD
Empire reunited by Constantine's defeat of Licinius	
Constantine II	337 – 340 AD
Constans	337 – 350 AD
Constantius II	337 – 361 AD
Magnentius	350 – 353 AD
Julian	361 – 363 AD
Jovian	363 – 364 AD

Western Roman Empire (after death of Jovian)

Valentinian	364 – 375 AD
Gratian	375 – 383 AD
Valentinian II	375 – 392 AD
Eugenius	392 – 394 AD
Honorius	395 – 423 AD

Eastern Roman Empire (after death of Jovian)

Valens	364 – 378 AD
Theodosius I	379 – 395 AD
Arcadius	395 – 408 AD
Theodosius II	408 – 450 AD