according to the excavators, the ditch "had been re-cut as the presence of the well known marginal mound attests." On the published section of the ditch an entirely conjectural 'original profile' is shown is a dotted line (cf Wilmott 2006a). The assumption that the ditch was re-cut and made larger, to a different profile to an accepted 'standard' shape, was based purely on the presence of the marginal mound and its current interpretation. Heywood's subsequent work at Cawfields, demonstrating a clean marginal mound, the apparent care in the layout of the three-mound Vallum in this sector, and the evidence in low-lying gound at Cawfields that the ditch edges had been revetted in turf founded on flagging (*J Roman Studies* 1940, 163–5) – surely the primary form of the ditch here – casts grave doubt on the interpretation of the marginal mound as resulting from a re-cut.

The systematic slighting of the Vallum with causeways every 41m (45yds) or thereabouts, and has been fully discussed by Simpson and Shaw (1922) and by Brenda Heywood (1965). The causeways were presumably constructed by shovelling the material from the breach made in the mounds back into the ditch to create a crossing, and this was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 75). Excavations at Cockmount Hill in 1939 across the axis of a crossing (*J Roman Studies* 1940, 163–5) showed that the sides had eroded rapidly and growth had taken place before the causeway had been built, and the same was true of a causeway near Walby (Richardson 1978). At Wallhouses (Bennett and Turner 1983, 67–8) another causeway was encountered, and it seems likely that the fill of the Vallum ditch observed at Crosby-on-Eden was also the result of the construction of a causeway. Based on observations between Wall Burn and Whittledean, Shaw and Simpson concluded that the Vallum was reconditioned (Simpson and Shaw 1922, 414–16). The date later put on this operation was the return from Antonine Scotland. This interpretation has enjoyed general acceptance (Breeze and Dobson 2000, 131). The evidence was that in this stretch there were gaps in the main mounds, no causeways, and a marginal mound. This led to the view that the marginal mound was the product of the removal of causeways and of the re-cutting of the ditch, especially as the marginal mound was not breached by the causeways. The latter consideration may not be crucial, as Simpson and Shaw (1922, 402) observed that the main mounds were not always totally breached to full depth to create the crossings, and in places the depth to which they are breached may be about the height of the marginal mound. The observation was further made that at Cockmount Hill and at Carrawburgh, where a sequence of surviving causeways ended, the marginal mound began. It seemed also that the ditch was wider in these areas, so the enlargement of the ditch was argued. This is where the observations that at Hare Hill, Down Hill, immediately west of Limestone Corner (Appendix 2), and near Mc23, the marginal mound is comprised of loose and dirty material, come into play (Heywood 1965, 91–2), as the interpretation was that the marginal mound was created when the crossings were removed and the Vallum reconditioned. This conclusion does not explain the situation at Wallend Common (Simpson and Shaw 1922, 401), where there is a ditch, no causeways, but breaches in the mounds, and no marginal mound. More importantly the whole idea is thrown into disarray at Black Carts, where, as the OS map shows, there are many extant crossings, but between two of these, excavation has showed a substantial, apparently early, marginal mound built of clean material, and no evidence whatever for the re-cutting of the ditch.

The issue of the marginal mound and its relationship with the crossings remains ambiguous at best. It is important, because if the mound is primary it is a second obstacle to the south, making the earthwork even more formidable as an obstacle than is currently understood. In the 13th edition of the 'Handbook', Charles Daniels certainly swung towards the view that it was an early aspect of the scheme, saying (Daniels 1978, 33) that "The date of the 'marginal mound' is also uncertain: in many cases it comprises silty material cleared from the ditch, although near milecastle 42 it was mostly clean soil. It has been connected with the late clearing of the ditch, but it probably belongs much earlier in the history of the barrier."

5
The Hadrian's Wall Milecastles Project: 1999–2000

by Tony Wilmott

with contributions by Paul Austen, Polydora Baker, Julian Bennett, Nicola Hembrey, Peter Hill, J P Huntley, Helen Moore, David Shotter and Jacobo Weinstock

The numbering and structure of the milecastles

by Paul Austen, Tony Wilmott and Julian Bennett

A major part of the first plan for Hadrian's Wall (p 72) was the provision of milecastles and turrets. It is generally assumed that there were 81 milecastles, designed to be located at intervals of one Roman mile (1,480m). There is some considerable variation in the precise spacing, often introduced in order to take account of topographical features, and consequently several milecastles remain imprecisely located. Between each pair of milecastles were two evenly spaced turrets. For convenience of reference, the structures are numbered from the east, and the universal numbering system invented by Collingwood (1930) and refined by Birley (1961, 71–7) assumes the existence of these interval structures all the way from Wallsend to Bowness-on-Solway. Milecastles (Mc) are numbered 0–80, and turrets (T) are referred to by the letters (a) and (b) after the number of the milecastle to their immediate east, together with their local names. For example: Mc48 (Poltross Burn), T48a (Willowford East), T48b (Willowford West), Mc49 (Harrow's Scar).

The milecastles were built to be integral with the curtain wall, which invariably acts as the north wall of these structures. Although the known milecastles conform to a generally recognised overall plan, there is no such thing as a typical milecastle. The only feature common to all is a pair of single-portal gates in the centres of the north and south walls, connected by a central roadway. Those milecastles that have been investigated, or that are known as upstanding earthworks show that they were generally about 18–23m long and about 15–18m wide, although there is considerable variety in size and shape.

Some were built with their long axis parallel to the curtain wall (short axis milecastles), while in most the long axis runs north–south (long axis milecastles). The external south-east and south-west corners are always rounded in the same way as fort corners, but there is diversity in the interior face of the corners: some reflect the curved face of the exterior, while others have right-angled internal corners.

The form of milecastle gateways also varies. There are four recognised types (most recently discussed in detail by Hill and Dobson 1992, 33–7). Type I is a simple form, in which two pairs of responds are provided on the north and south sides of the wall, through which the gate passes. This would have allowed the construction of an arch at the front and rear of the gate. Type II, found on Narrow Wall structures, has a set of arch responds for the outer face of the gate only, and Type IV is a variant of this form found in Broad Wall milecastles. The distinction between Types II and IV lies in the different size of masonry employed, although Hill and Dobson (1992, 35) have shown this distinction to have little useful meaning. It seems possible that the flush piers provided on the inside of this gate type were intended to support a timber lintel in place of an arch (ibid). The final gate form, Type III, had two pairs of arch responds, but the inner pair projected back into the milecastle. This may have been to increase the floor area in the tower above, and the existence of this type of gateway on both the northern and southern sides of this kind of milecastle has been held to suggest the existence of a tower over each gate (ibid, 36).

The most variable factor of the milecastles appears to be the plan of the interior buildings, where the number and dimensions of buildings vary substantially from one installation to another.

All of the milecastles to the east of the River Irthing (up to and including Mc48) were constructed in stone, but those on the west side of the Irthing (Mcs49–80) were built initially with turf or earthen ramparts and timber gate towers (Breeze 1982, 76). The Turf Wall milecastles were rebuilt in stone, at the same time as the stone curtain wall replaced the Turf Wall. In general they tend to be larger and squarer than their Stone Wall counterparts. West of Birdoswald, where the new Stone Wall was built at a distance of up to 200m north of the Turf Wall between Mc49 and Mc51, a completely new stone milecastle (Mc50, High House) was provided directly to the north of the Turf Wall structure (Mc50TW).

In the Stone Wall sector, the milecastles and turrets are known to have been constructed together with the foundations in advance of the stone curtain Wall itself (p 72); the situation on the Turf Wall is less clear, although the freestanding stone turrets were certainly built before the turf curtain. It is probably the case that the milecastles of the Turf Wall were built with the curtain in order to ensure effective use of the available building material. On the Stone Wall, the milecastles and turrets were provided with short wing walls built to the broad gauge of 3.05m (10ft) in order to allow the Broad Wall curtain to be bonded to the structures. West of the North Tyne the Wall width was reduced to the so-called Narrow Wall curtain at *c* 2.43m (8ft) (p 72). Where this meets the wing walls of the interval structures it creates the vertical offsets or 'points of reduction' visible on the south face of the Wall.

Historiography

The historiography of these aspects of mural studies was magisterially presented by Eric Birley (1961), but a short summary may be appropriate here in order to bring the story up to date, and to examine the background to current thought on the milecastles and turrets.

Milecastles were first so-named by Robert Smith in 1708 (Birley 1961, 89), and the usage was confirmed by Clayton (1855a) in his report on his excavation of Mc42 (Cawfields). The term was finally established by Percival Ross (1904) (to the exclusion of synonyms such as 'castle-steads', which Bruce had continued to employ (Birley 1961, 90)).

The correct number of milecastles was first theoretically put forward by John Horsley (1732, 119). Clayton's work on Mc42 was the first excavation of one of these 'interesting appendages to the murus' (Hodgson 1840), and established for certain that it was provided with a northern gate. At the time the received view, as expressed by Bruce (1853, 67), had been that there were generally single gates to the south only. J Irwin Coates painted several views of Mc42 in 1877 and 1891 (Figs 114, 116–18). The twin gates were confirmed as a fundamental part of the design of all milecastles by Clayton's subsequent work at Mc37 (Housesteads) in 1853 and Mc39 (Castle Nick) in 1854. Coates also recorded these sites (Figs 108–110). Although Francis Haverfield produced an outline plan of Mc49 (Harrow's Scar) in 1898, it remained for J P Gibson and F G Simpson (1911) to produce the first full plan of a milecastle and its internal buildings, following their excavation of Mc48 (Poltross Burn).

Gibson and Simpson's seminal report began to outline ideas on the significance of differences in plan, particularly whether the long or short axis of the milecastle ran back from the Wall line, and the form of milecastle gateways. Simpson (1931) later addressed these issues in detail, offering for the first time the conclusion that the various combinations of gate type and long or short axis plan were the product of differing building styles used by the three legions responsible for the building work. In particular, a combination of structural and epigraphic evidence suggested that the Short Axis type with Type I gates were the work of Legion II *Augusta*, a conclusion based on the fact that three such milecastles have produced building inscriptions of this legion: namely Mc37 (Housesteads) RIB1634, Mc38 (Hotbank) RIB1637, 1638, and Mc42 (Cawfields) RIB 1666.

The long axis milecastles with Type II gateways were allocated to Legion XX *Valeria Victrix* on the basis of a building inscription (RIB 1852) from near Mc47 (Chapel House). This milecastle was investigated in 1935 (*Simpson et al* 1936b, 270–2). By a process of elimination, Long Axis milecastles with Type III gates were therefore allocated to Legion VI *Victrix*.

The accuracy of this interpretation has recently been questioned (Breeze and Dobson 2000, 68). Peter Hill (1989) in his analysis of the stonemasonry of the north gate of Mc37 (Housesteads) has demonstrated that the disruption caused in the construction of the Wall by the decision to bring the forts onto the line affected the construction of milecastles, and that this disruption is visible in the standing stonework. It is therefore at least possible that this and other sites were completed by a legion other than the legion that began the work. Breeze and Dobson have therefore recently modified the analysis. While agreeing that the planning of milecastles does reflect the activities of the three legions that *began* the work, they accept that the inscriptions relate to the units that *completed* the work (cf Hill 1991, 38), and that these are not necessarily the same. They therefore call the three legions A (short axis, Type I gate), B (long axis, Type III gate) and C (long axis, Type II gate).

A further complication in this story has recently been advanced in an important study by Symonds (2005). It has long been apparent that some milecastles were constructed to the Broad Wall standard, with all four walls being of broad dimensions. Others are built to Narrow Wall standard, often with a broad north wall, continuing the Broad Wall curtain, and with east, west and south walls built to narrow gauge.

The distribution of wholly Broad Wall milecastles is an irregular one, falling into three groups. These Symonds associates with topographical factors, arguing that Broad Wall milecastles were completed first, before the decision to go over to Narrow Wall curtain (p 72), in order to secure particular points of weakness. Mc47 (Chapel House) and Mc48 (Poltross Burn) are identified as two exceptional Broad Wall milecastles, both larger than the norm, and with paired barracks. He suggests that these were completed early in order to garrison the potentially vulnerable corridor between the Tipalt Burn and the Irthing (an idea first hinted at by Breeze and Hooley (1968, 109), who referred to Mc47 as a 'priority milecastle'). The paired barracks would have been constructed when it was thought that the milecastles would provide the sole garrisons on the wall, before the decision to place the forts on the line. The provision of single small barracks in all other known milecastles would thus post-date this decision.

Symonds' other two groups are the Broad Wall Mcs23–27, flanked to the east by the main through route of Dere Street and to the west by the River North Tyne, and Mc9 (Chapel House) and Mc10 (Walbottle Dene), sited to secure the Dewley Burn passage through the deep defile of Walbottle Dene. While maintaining the logic of even spacing, Symonds shows not only that some milecastles were prioritised, but that there was a scale of importance, citing Mc35 (Sewingshields), where structural aspects indicate a very disjointed construction process. The crag-crest location of this milecastle, in an invulnerable position, might have set its completion low in the scale of priority.

Milecastle structure and function

The general appearance of milecastles is now well established. For the Turf Wall milecastles, the key site is Mc50TW (High House), and the reconstruction of the milecastle drawn for Simpson *et al* (1935b) has been very influential. Here the milecastle walls were some 6m thick (20 Roman feet) at the base. From the section of Turf Wall found near by, it was estimated that the Turf Wall, and thus the milecastle walls, were some 3.657m (12ft) in height, with the front of the wall almost vertical and the rear sloped at an angle of 1:4. The Turf Wall and its milecastles have, since the 1935 reconstruction, frequently been reconstructed with a boardwalk on the top, and a breastwork of split timber. This would have been a profligate use of timber, and evidence from pollen analysis (pp 118–9) in the Appletree sector does not suggest that large timber was plentiful. The sort of birch and alder scrub woodland attested from the pollen work suggests materials from which hurdles might be woven, and perhaps the breastwork for Turf Wall milecastles were made of such hurdles, saving large timber for the construction of the gates (Wilmott 2001a, 44).

The Stone Wall milecastles have prompted more discussion. The most conspicuous aspects of these structures were the stone gates. The three different plans have been noted above. Although Type II and Type IV gates may have had interior lintels, it is safe to say that all gates would have been arched on their outer faces. The pivots on which the inward-opening, harr-hung, double gates swung were housed in pivot holes behind the arches. Above the arches was the floor of the first storey of the tower, probably supported on joists placed at a level just above the extrados of the arch (Hill and Dobson 1992, 50).

A great deal of recent literature on turrets has been concerned with their reconstruction, particularly that of their roofs. This literature is also relevant to the reconstruction of milecastle gate towers, which are, after all, simply turrets with gates in the base. Parker Brewis (1932) was the first to attempt a reconstruction of the appearance of a Wall turret, based upon T18a (Wallhouses East). He deduced a total height of 30 Roman feet (8.86m) for the structures, and assumed a gabled roof (for a later consideration of turret reconstructions see Hill 1997a). The same conclusion on height, assuming two storeys above the gate, was reached for milecastle gates by Hill and Dobson (1992, 36). Gabled roofs similar to those proposed by Brewis were adduced by Baatz (1976, 22–33) for turrets on the German *limes*.

Crow (1991, 61) has suggested flat roofs for the turrets on the basis of evidence for crenellated parapets in the form of chamfered merlon capstones found at T7b (West Denton), T51b (Lea Hill), T54a (Burtholme Beck) and Mc79 (Solway House). The same conclusion had previously been drawn for the treatment of milecastle gateways at Mc27 (Lower Brunton) (Gillam 1953, 171) and Mc39 (Castle Nick) (Crow 1988, 151), where no roofing slate or tile was found among collapsed debris from the structures. Bennett (1983, 44) suggested that turrets were flat roofed, following his examination of T10a, although he later (Bennett 1988, 137) suggested that low pyramidal roofs sheathed in lead and surrounded by a crenellated parapet might have been used. Hill and Dobson (1992, 41) have opined that in the British climate a flat roof is "an abomination, to be avoided wherever possible", and suggest that a flat roofed tower with a crenellated parapet, and a pyramidal thatched roof carried on timber corner posts would account for the combination of merlon caps and no roofing material found at some turret sites.

The question of the height of the walls of stone milecastles (and of the curtain Wall itself) was recently revisited by Hill and Dobson (1992, 46–9). It was Gibson and Simpson (1911, 420–1) in their report on Mc48 (Poltross Burn) who first reasoned out the height of the Wall by measuring and projecting the angle of rise of a set of steps found within the milecastle, which were thought to lead from the milecastle interior to the wall top. This is augmented by the calculation of the height above ground level of the floor of the tower above the milecastle gate arch (Hill and Dobson 1992, 47). If this floor was at the same level as the wall walk, then this calculation also gives the wall top height. Both methods of reasoning arrive at an original design height of 15 Roman feet (4.44m).

Internal buildings in the milecastles are in two basic sizes: 6–9.8m ×◊ 3.6m and 15.8m ×◊ 3.6m. The smaller building is usually found singly, and is divided into two rooms; the larger type is usually built in pairs, and divided into four rooms – two examples are Mc47 and Mc48 (Breeze and Dobson 2000, 33; Symonds 2005). Small variations in size have been summarised by Hill and Dobson (1992, 49), who relate the size of the buildings to a possible garrison of 10–11 men.

Another continuing debate concerning the milecastles relates to their function. Dobson has stated that "the function of the milecastle, along with that of the Vallum remains one of the great mysteries of the Wall" (1988, 9).

Much of the debate on the function of the Wall as a whole revolves around the milecastles. It should be emphasised that, as these were part of the primary design of the Wall, their provision relates to the original conception of the Wall's function before the addition of forts and the Vallum to the system. As a starting point Dobson (ibid) defines the milecastle as "two things: a passageway, albeit a controlled passageway, through the Wall and accommodation for troops within a fortified enclosure". The fundamental question (ibid, 12) is why there were so many openings; gates, though essential, are also weaknesses in any defensive structure. Dobson argues that the number suggests not only confidence on the part of the designers and builders of the Wall, but also central planning without regard to topography. He regards the primary reason for the milecastles as the facilitation of patrolling, and that it was simpler to "provide them on a massive scale than to commission an investigation on the ground of what might have been required" (ibid).

The generally accepted view is that the Wall was placed to control movement rather than to prevent it, and it is this view that is advanced by Breeze and Dobson (2000, 40), who note that "civilians would be allowed through the gateways, though only, presumably when they had satisfied the guards of their peaceable intentions, and on payment of customs dues". Such travellers would be passing in the course of trade, or perhaps trans-humance. Dobson (1986, 12) elsewhere, however, suggests that such passage was "permitted, but it was not the primary reason", citing patrolling and maintenance as the principal purpose of the gates.

In recent years, much has been made of the absence of observed causeways or access points across the ditch to the north of the milecastles. Dobson (1986, 15) rightly notes that it is "extraordinarily difficult to propose a theory of milecastle gateways which does not require such crossings". He goes on to point out (ibid) that the "removal of milecastle gates when the Wall was abandoned in favour of the Antonine Wall must imply crossings of the ditch at these points". The removal of the gates by means of smashing the pivot stones at this time is well attested (cf Allason-Jones *et al* 1984, 233).

Bidwell (1999, 35) has recently pointed to the lack of evidence for causeways over the ditch at milecastles and seems to doubt their existence except where archaeologically demonstrated. The only two milecastles to show excavated evidence for causeways are Mc50TW (High House), and Mc54 (Randylands) (Simpson *et al* 1935a, 225). Welfare (2000, 14) observes that the causeways at these milecastles have become viewed as an aspect of the design of the Turf Wall, rather than something that might be a typical factor in the construction of the Wall. He also emphasises the fact that the work on Mc50TW and Mc54 was the first attempt to find such evidence, and that it has not been deliberately sought since. If there was no general provision of causeways over the ditch in the first plan for the Wall, the milecastle gates could have been only provided for egress to the berm for maintenance purposes. This is untenable: if the number of milecastle gates represent an over-provision for civilian passage and patrolling, then this is doubly the case if they were used merely to allow maintenance parties onto the northern berm. Welfare (2000) has examined the field survey evidence and concluded that there is, in fact, *prima facie* evidence to suggest that the first plan for the Wall did include causeways across the ditch at milecastles. Bidwell (1999, 35) suggests that where causeways might have been removed and left no trace, excavation or geophysics might show the existence of road metalling on the berm.

A problem in the interpretation of causeways is that of chronology. It is not known fully how the chronology of ditch digging relates to that of Wall building. The central planning that gave rise to milecastle building might have been amended in the field by a decision on the part of the ditch diggers not to leave a causeway at a milecastle where topography made access difficult. Causeways could have been removed at any time during the Roman period for a variety of reasons, possibly as early as the decision to place the forts on the Wall; no pattern should be anticipated (with respect to Welfare 2000, 18).

There is one indication that milecastle gateways were considered to be a necessary part of the functioning of the frontier for a long period, however, and that is the fact that in every known case the milecastles on the Turf Wall were replaced in stone. This was a major opportunity to review the overall plan of the Wall following experience on the Antonine frontier, and to decide on selective rebuilding and consequent savings on labour and resources. The fact that milecastle replacement was wholesale clearly suggests a continuing role for the milecastles themselves, and for their gateways.

The question of the garrisoning of the milecastles has also been widely debated, varying between three ideas: that the fort garrisons provided the necessary troops; that other auxiliary units were deployed specifically for the purpose; or that a special force was deployed. Breeze (2003) has recently reviewed the issue and concluded that the question is still open, although he suggests that the second possibility remains the more likely.

Thus far, we have dealt with the *primary* plan, structure, and function of the milecastles, but there is much more to them than this. The milecastles, of all of the installations of the Wall after the forts and *vici*, are the most potentially archaeologically informative. While the earthworks and curtain wall in both the stone and turf sectors may yield data on morphology and landscape, they are lacking in dating evidence, or in detailed information on the development of the frontier system as a whole. The turrets, although ubiquitous, are small and seldom produce much in the way of information on either change or dating; they are either in use or not in use at any given time. Many were demolished, and the recesses in the Wall filled in.

On the other hand, the milecastles, with their substantial gates and internal buildings, contain complex and informative datable stratigraphic and structural sequences. The more complete milecastle excavations have shown considerable variety in the number, types and sizes of internal buildings. They have produced differing datable phases of occupation, building, and the opening or blocking of gates, as well as aspects of site morphology, which have been central to the interpretation of the history of the frontier. It is, therefore, sobering to reflect how few excavations aimed at examining the full history of the milecastles have been conducted. A considerable number of the milecastles on Hadrian's Wall have been partly investigated by small-scale interventions, ranging from the attentions of antiquarians to trenching in the first half of this century. Most work has, however, tended to concentrate on primary issues, establishing at most the gateway type and the overall dimensions of the milecastle. The number of milecastles that has been excavated on a sufficiently large scale to determine their overall plan is considerably smaller: only 13 milecastles can claim to have been extensively excavated: Mc9 (Chapel House) (Birley 1930a), Mc35 (Sewingshields) (Haigh and Savage 1984), Mc37 (Housesteads) (Clayton 1855b; Blair 1934), Mc39 (Castle Nick) (Clayton 1855b; Simpson *et al* 1936b, 268; Simpson 1976, 82–6; Frere 1983, 290; 1986, 378–81; 1987, 316; 1988, 434), Mc40 (Winshields) (Simpson 1976, 86–98), Mc42 (Cawfields) (Clayton 1855a; Simpson *et al* 1936b, 269), Mc47 (Chapel House) (Simpson *et al* 1936b, 270–2), Mc48 (Poltross Burn) (Haverfield 1888; Gibson and Simpson 1911), Mc49 (Harrows Scar) (Haverfield 1899; Richmond 1956), Mc50TW (High House) (Simpson *et al* 1935), Mc50 (High House) (Simpson 1913), Mc64 (Drawdykes) (Caruana and Fane Gladwin 1980), and Mc79 (Solway House) (Richmond and Gillam 1952).

The limited number of full structural histories that we have for milecastles is one problem in their interpretation, but there is a more fundamental question: in many cases the exact location of milecastle sites are unknown also. This problem has broad implications in terms of the modern management of the Wall, as without a clear understanding of the locations of sites, decisions upon management solutions are not possible.

It is unsurprising that one of the major *lacunae* in knowledge of the location of interval structures is in the urban area of Newcastle upon Tyne. When Collingwood (1930) drew up his schedule of numbered interval structures the existence of such structures all the way from Wallsend to Bowness-on-Solway was assumed, with eight milecastles postulated from Wallsend (Mc0) to the easternmost proven example at Mc9 (Chapel House). The precise form and dating of the Wall eastwards from Mc9 is still the subject of debate, as the existence of milecastles and turrets in this sector has never been fully confirmed by reliable observation. The theoretical spacing and numbering between Wallsend and Mc9 was shown to be seriously awry when the Westgate Road Milecastle was found. This is the only milecastle within the built-up area of Newcastle upon Tyne whose remains have been reliably recorded (Harbottle *et al* 1988). The problems associated with the interpretation of the sector of the Wall to the east of Mc9 have been discussed by Bennett (1998), and developed by Hill (2001a), both of whom identify the Westgate Road site as Mc4 (Bennett 1998, 31; Hill 2001a, 8). Hill's schedule of distances between interval structures is an excellent starting point for further work.

The second area in which many interval structures remain unlocated is in the west. Robbing of the Stone Wall in Cumberland was common in the post-Roman period, for there are few local exposures of solid rock. Re-used masonry from the Wall occurs in 12th century contexts in both Carlisle Castle and the Cathedral, as well as other early medieval sites in the region, clay-cob structures being more normal for lesser domestic structures at this date (Whitworth 1994a, 8–11). More extensive and dedicated robbing of the structure began in the post-medieval period, with the increase in the number of more permanent dwellings, perhaps as a by-product of the increased security after the Act of Union. Indeed, by the 19th century, so much of the Wall had evidently been robbed that henceforth farmers were compelled to dig below ground level before suitable stone could be found, most of this being re-used within two miles of its find-spot (ibid, 19–22).

Once robbed, what was left was often subjected to ploughing, causing further attrition of the remains. There are few surviving earthworks in this section to indicate the precise course of the linear

elements and the location of milecastles and turrets. Fewer than half the expected 24 milecastles in this length have been precisely identified, and only a handful of turrets. Between Stanwix and Burgh-by-Sands, more than six miles, five successive milecastles (Mcs66–70 inclusive) have not been located and the exact course of the Wall itself is mostly uncertain. Furthermore, this sector of the Wall, particularly in the stretch between Castlesteads and Burgh Marsh, has received little detailed archaeological attention other than a small number of mainly development-driven interventions. A quirk of the pattern of past research into the extent of the Turf Wall has ensured that the remains in this area have been little studied. During the 1930s a long-running campaign of excavation had, as one of its objectives, the establishment of the length of the Turf Wall and whether it actually extended as far as the western end of Hadrian's Wall.

Following the discovery of the Turf Wall in the Birdoswald–High House area, this question became important in the final unravelling of the history of the linear components of the frontier and their relationships one to another. A series of exploratory excavations in the 1930s sought the sites of the characteristic Turf Wall milecastles and turrets. This operation moved steadily westwards from Mc50 until 1934, when the campaign had reached T57a near Castlesteads, and it was decided to make a jump to the far end of the Wall (Simpson *et al* 1935a, 213). The idea was to attempt to find the final turret on the line. If this was a free-standing, stone-built turret, without integral wing walls, it would be typical of the turrets of the Turf Wall, and would afford positive proof that the Turf Wall did indeed extend from the Irthing to Bowness-on-Solway, and "the [Cumberland Excavation] Committee's quest of forty years duration would be ended" (*ibid*, 217).

Simpson's team trenched at Mc78 (Kirkland); (pp 187–92) simply to confirm its position. From here it would be possible to establish the sites of Mc79, and the turrets in Wall miles 78 and 79, by simple measurement. This approach was successful, T79b was found to be a Turf Wall turret, and the point was proven (Simpson *et al* 1935a, 217–18). This also meant, however, that the programme of methodical location of one site after another was suspended.

Subsequent work located other sites. Mc73 (Dykesfield) was located in 1948 (Simpson *et al* 1952, 16), Mc71 (Wormanby) and Mc72 (Fauld Farm) in 1960 (Bartle 1961), and Mc64 (Drawdykes) in 1964 (Caruana and Fane-Gladwyn 1980). In 1976, Mc65 was located through geophysical survey (Bartlett 1976) and its location was confirmed by trial trenching (Smith 1978, 35–6). Following this success, in 1981, as part of the Crosby-on-Eden project (p 121), it was decided to carry out some limited geophysical prospection with a view to locating milecastles in the immediate vicinity (Appendix 1; Gater 1981). The results were varied. Mc58 (Newtown-of-Irthington) appears not to have occupied its measured position, more likely because it was never there than because it had been robbed or ploughed out. Mc59 (Old Wall) and Mc62 (Walby East) were confidently located, while Mc61 (Wallhead) and Mc63 (Walby West) were tentatively identified. Only two of these surveys (Mc62, pp 170–4 and Mc63, pp 174–7) have subsequently been tested by excavation, with mixed results.

Project background

The first *Hadrian's Wall Management Plan* (English Heritage 1996, 6.3.1), identified some of the potential threats to the integrity of archaeological sites in rural settings, including that of cultivation. The varied landscape through which the Wall runs includes two broad zones where cultivation affects the line of the Wall and its associated structures: the fertile land in east Northumberland between Newcastle upon Tyne and Stagshaw, which is subject to arable agriculture, and the low-lying land in Cumbria west of Walton. In Cumbria it is common practice to rotate the land use over a number of years, leaving fields under grass for several years followed by two or three years of cereal or root crops before returning them to grass. In both of these areas archaeologists have lacked adequate direct evidence to assess the degree of continuing damage to archaeological horizons below or within the plough soil. Owing to their stratigraphic complexity and numerical ubiquity it was perceived that, of all the installations of the Wall, milecastles under cultivation potentially represented the largest single body of information under the greatest level of threat.

In 1998 one of the authors prepared a proposal (Austen 1998) for a project to assess and evaluate the milecastles under apparent threat. Thirteen of the original 81 milecastles on Hadrian's Wall were identified in this paper as being under potentially damaging land regimes, principally cultivation of cereal crops, either in rotation or annually. A proposed programme of field evaluation to investigate the condition of the remains and their vulnerability to further cultivation was put forward. The precise locations of four of these milecastles had not been established hitherto. During 1999 the proposal was adopted by the then Central Archaeology Service of English Heritage as a strategic project on the World Heritage Site, which would be useful more generally in informing ongoing investigations into the impact of ploughing on archaeological monuments.

A project design was therefore drawn up for the work (Austen and Wilmott 1999), and the project was carried out during the late summers of 1999 and 2000. The objective of the fieldwork was principally to provide data to inform discussions with the land owners and managers of these milecastles concerning their future management, although it was recognised also that new archaeological information would also be recovered. The management recommendations appeared in a series of interim reports (Moore and Wilmott 2001b–c; Wilmott 1999e–j; Wilmott 2001b–e) which were distributed to site owners and archaeological curators. The present paper is written to disseminate the archaeological information recovered and to set the work on each site into its broader research context.

Site selection

Nine known sites were identified where at least a part of the milecastle was in potentially damaging land use. These divided neatly between east and west, with the eastern sites (Mcs9, 10, 14, 17 and 19) being under arable cultivation and the western (Mcs62, 63, 78 and 79) being ploughed in rotation. Two unlocated milecastles (Mc60 and Mc70) certainly fell within areas subject to cultivation, while a further two (Mc11 and Mc69) were only possibly affected, as the broad areas in which they were expected to be found included land subject to cultivation as well as other regimes. Two other milecastles (Mc58 and Mc59) were also initially considered for the study, but their measured sites were subsequently reseeded as permanent pasture, averting any further threat. During 2000, Mc71 was identified as a further example of a milecastle site partially under threat from rotational ploughing, and it was therefore added to the list. The sites examined and reported on here are therefore the actual or theoretical sites of Mcs9, 10, 14, 17, 19, 62, 63, 69, 70, 71, 78 and 79.

General methodology

The methodological approach adopted varied from site to site, and details of this appear in the individual site summaries that follow.

The unlocated milecastles were sought through geophysical survey. It was felt that the survey carried out within the Crosby-on-Eden project on Mcs58, 59 and 61–63 were adequate to inform field evaluation on Mc62 and Mc63, while new surveys were commissioned for the two alternative possible sites of Mc69 and Mc70. At Mc63 a programme of test-pit digging was used to locate the milecastle, as the results of geophysical survey were not conclusive. Mc70 was so inconclusive that no field evaluation took place. At all other sites a series of trenches – from one to five – were excavated. The brief was to excavate through overlying plough strata or later disturbance to the top of intact archaeology, to record the archaeology, and to backfill the trenches. All trenches were hand excavated, and also backfilled by hand, except in the cases of Mc71 and Mc78, where the respective farmers kindly undertook mechanical backfilling. In all cases new information was retrieved through this process, as the removal of old excavation trench backfill (Mcs9, 78 and 79) or of robber trench fills (Mcs10, 14 and 78) was permitted within the brief.

Milecastle 9 (Chapel House): 2000

The site

Mc9 is on the western side of a ridge of high ground to the east of Blucher village (NZ 1785 6627). The line of Hadrian's Wall and the north wall of the milecastle lie below the south carriageway of the B6318, which has been slightly re-aligned here to link up with the roundabout to join Union Hall Road and the A69 dual carriageway (Figs 235–6). There is a wide verge of grass that covers the remains of the central part of the milecastle, but the

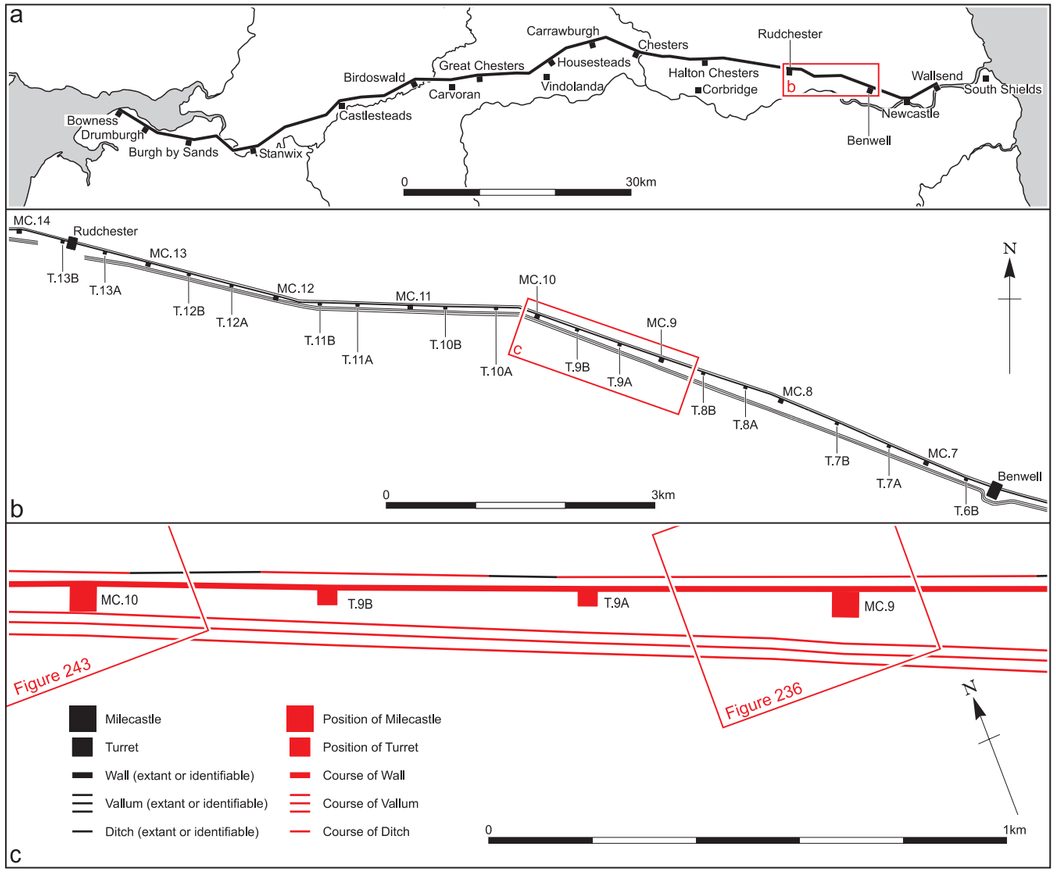


Fig 235
Milecastle 9: location of Mc9 on Hadrian's Wall and of Fig 236.

archaeological effect of the realignment of the road is unknown. The southern end of the milecastle extends for approximately 8m into the field south of the road, which has been cultivated for cereal crops each year, at least since 1945. A slight rise in the fence line between the verge and the cultivated field is indicative of the buried remains.

Previous work

The milecastle might have been first noted by John Horsley (1733, 138), although robbing and ploughing had obliterated all surface trace of it until it was re-located in 1928, and partly excavated in 1929 by Eric Birley. The north gate, of Type IV, built in large masonry with a single pair of gate responds, was located in 1951 (Daniels 1978, 73). It is one of the more completely excavated of the milecastles (Fig 237), and Birley's excavations were the subject of a detailed report (Birley 1930a), which included full reports on finds and pottery.

The internal measurements of the milecastle were 14.9m east–west by *c* 18m north–south. The foundations of the side walls were 3.1m wide, the same as the Broad Wall in this sector. This was the first Broad Wall milecastle to be thoroughly examined, although some work also took place at around the same time on Mc10 (Walbottle Dene) (Spain 1930). It was found that the west wall and the western part of the south wall had been almost completely destroyed. Several stones of the north face of the south wall remained, at least two with inscribed Roman numerals on the faces. A single course of each face of the east wall, of large blocks, survived in good condition. The wall core was of clay and rubble, as was the foundation, although the east wall was mortared. Enough mortar survived to demonstrate that the wall above the footing course was offset by 154mm on each face, and was therefore 2.62m wide. The south-east angle was robbed, but the shape of

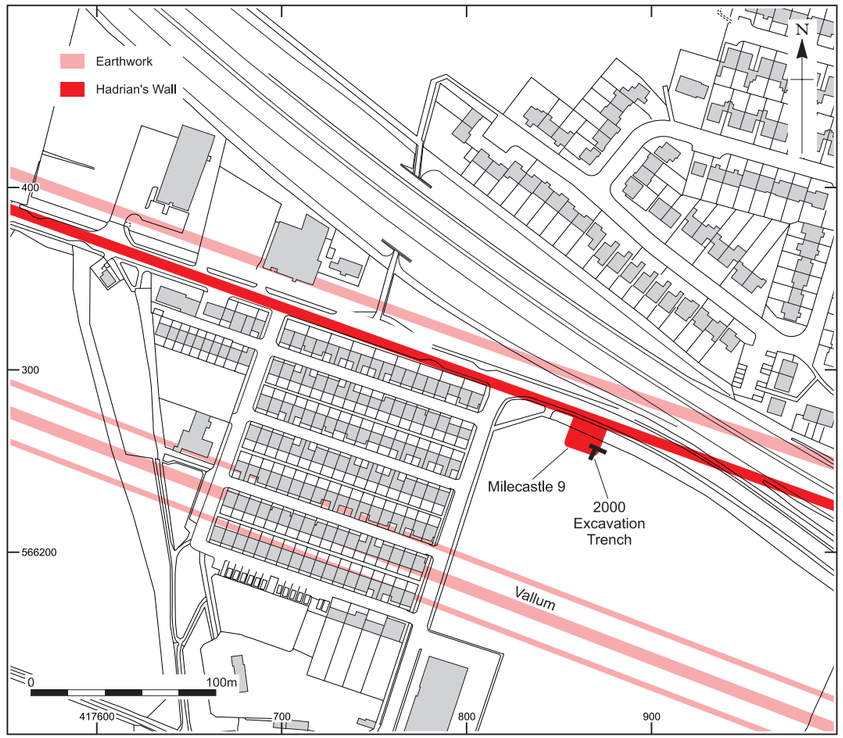


Fig 236
Milecastle 9: milecastle and excavation trench of 2000 against modern mapping.

the corner was rounded both inside and out. Little was left of the south gate, although the eastern pivot hole in the footing course of the gate jamb and the gate sill were intact. The sill, although the photographs show it much worn (Birley 1930a, pl xlv, fig 2), retained the upstand against which the inward-opening door shut. The gate passage was contained within the thickness of the wall.

The primary road through the milecastle was constructed of earth and gravel with a drain on the western side. The road was later made up so that it had an even slope from north to south. In the second period the road was re-made. Although most of this road was subsequently ploughed away, a drain associated with it survived within the south gate.

In the eastern half of the milecastle, and towards the southern side, there was a primary internal building, approximately 7.3m long by 4.5m wide, constructed with clay-bonded masonry and having clay floors. This contained two rooms, and was in an excellent state of survival, standing up to six courses high in places. A resurfacing of the road was associated with the laying of a flagstone floor in one of the rooms. In the 'second period' this building was extended by at least one additional room to the north. At the same time a clay and flag floor was laid in the original building, and the door sill was raised to provide a higher threshold.

West of the road there was clearly considerable disturbance, and the sequence is less clear. The published photograph (Birley 1930a, pl xlvii, fig 2) suggests that the archaeology was fragmentary, but rather more complex than the report indicates. Certainly early post holes were found, and although these were 76mm in diameter and as much as 254mm deep, they did not extend into the undisturbed subsoil. The published plan shows two rows about 1.8m apart of at least three post holes. This is clearly not wide enough to represent two walls of a building, and no firm conclusion was reached as to their function. In the second period, a stone building was erected of which a threshold and parts of the east and west walls only survived. This lay 1.05m from the road edge, from which it was separated by a kerbed path.

Mc9 is one of the few examples where external areas have been excavated. The burial of a male youth was discovered close to the south wall of the milecastle. It was aligned with feet to the east, and was laid out parallel with the milecastle wall. The fact that the head was missing appears to result from later disturbance rather than from deliberate decapitation. Although interpreted as Roman, it may have been of early post-Roman date, and the same may be true of the parts of two further bodies found near the south-east corner. To the south of the milecastle, 9.6m from the south wall the north kerb of the Military Way was located in a trench that extended 15.6m southwards from a point midway between the gate and the south-east corner. This road was at least 5.4m wide, with a branch road 4.8m wide forking "from the east to the gate of the milecastle". Despite the length of this trench, no sign was found of an encircling ditch.

Several small finds were recovered, including four coins ranging in date from one of Julia (AD 79–81) to one of Valentinian I (364–75); a second century brooch; a sword scabbard chape; part of a sculpture of a female figure within a conventionalised temple, possibly one of the *Deae Matres*; a portion of a gaming board; and several mill stones. Pottery dated from the 2nd to the 4th centuries AD, material from the later period including both Crambeck and Huntcliff wares.

The dating of the two 'periods' identified in the work was interpreted in terms of the Wall Periods, which were formally promulgated in the paper that includes the report (Birley 1930a). These structural periods were therefore attributed to the reigns of Hadrain and of Severus. The pottery report would seem to confirm that this is broadly correct, or at least that the second period is indeed late 2nd–early 3rd century AD. The later finds attest to occupation into the later 4th century, although the structural and stratigraphic evidence for these periods had been removed by ploughing prior to 1929.

The evaluation

After alterations to the road system since 1929, very little of the milecastle remained within the ploughed field, and it was felt that a single T-shaped trench would sample both the east and south walls. The east–west bar of the 'T' was 9.5m long, and the north–south bar 6m long. Both were 2m wide. Excavation was carried out entirely by hand, and the intention was to excavate to the top of intact Roman archaeology insofar as this survived the 1929

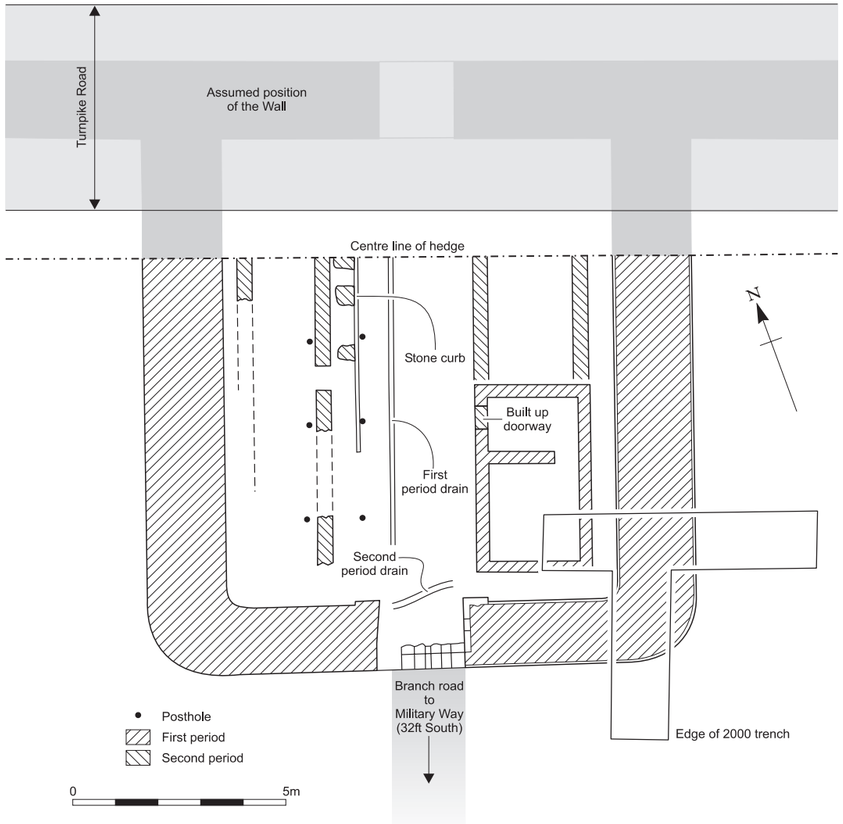


Fig 237
Milecastle 9: plan of milecastle based on Birley (1930) with location of 2000 trench superimposed.

excavations. In order to clarify the stratigraphy, and to distinguish between excavation fill and intact stratigraphy, the northern metre of the east–west bar, and an area in the south-west corner of the north–south bar were excavated to a greater depth than the rest of the trench. All recording was carried out according to the methods currently in use in English Heritage's Centre for Archaeology.

Structures and stratigraphy

The trench sampled parts of the excavated area, and areas of previously un-examined stratigraphy. The edges of the 1929 excavation were clear (Fig 238). The portion of the trench within the 1929 area included the east wall of the building on the eastern side of the milecastle, the east wall of the milecastle, and its robbed south-east corner. The method of the original excavator appears to have been to clear the interior of the milecastle of its horizontal stratigraphy, while leaving the walls of interior buildings upstanding. The photograph taken at the time (Birley 1930a, pl xliii, fig 1) demonstrates that the stratigraphy above the exterior milecastle walls was left *in situ*, and only the faces of the surviving facing stones were exposed.

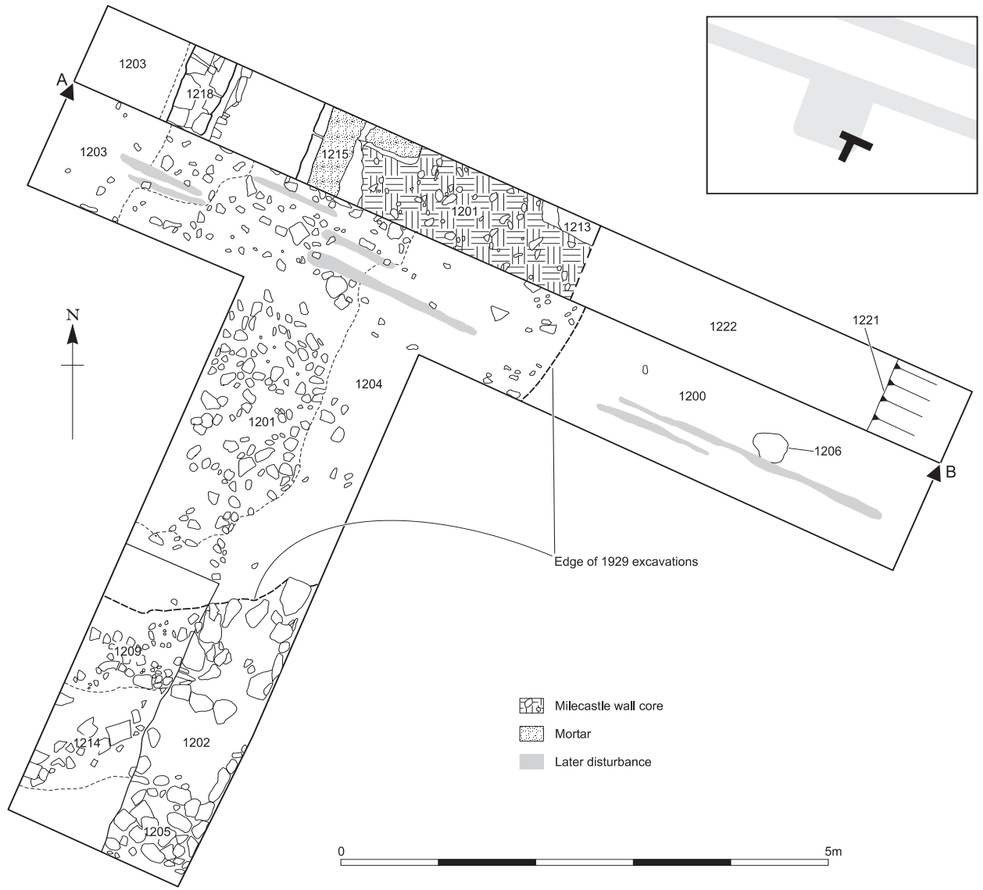
Pre-Roman strata

The natural subsoil was not encountered in any part of the excavated area, even within the edges of cut features, such as the ditch to the east of the milecastle (Fig 239). The milecastle was built on a layer of yellow clay (1212=1219=1222). (Hereafter, such numbers refer to the layer or context numbers used in the excavations records.) This clay was the uppermost element of a series of strata at least 450mm deep comprising alternating layers of yellow clay (1212=1219=1222, 1224,1226) and brown silty soil (1223, 1225) (Fig 239).

Roman structures and deposits

The footings of the milecastle walls were 3.16m thick. The wall core (1201) consisted of 40% angular sandstone rubble up to 200mm in a matrix

Fig 238
Milecastle 9: plan of 2000 trench.



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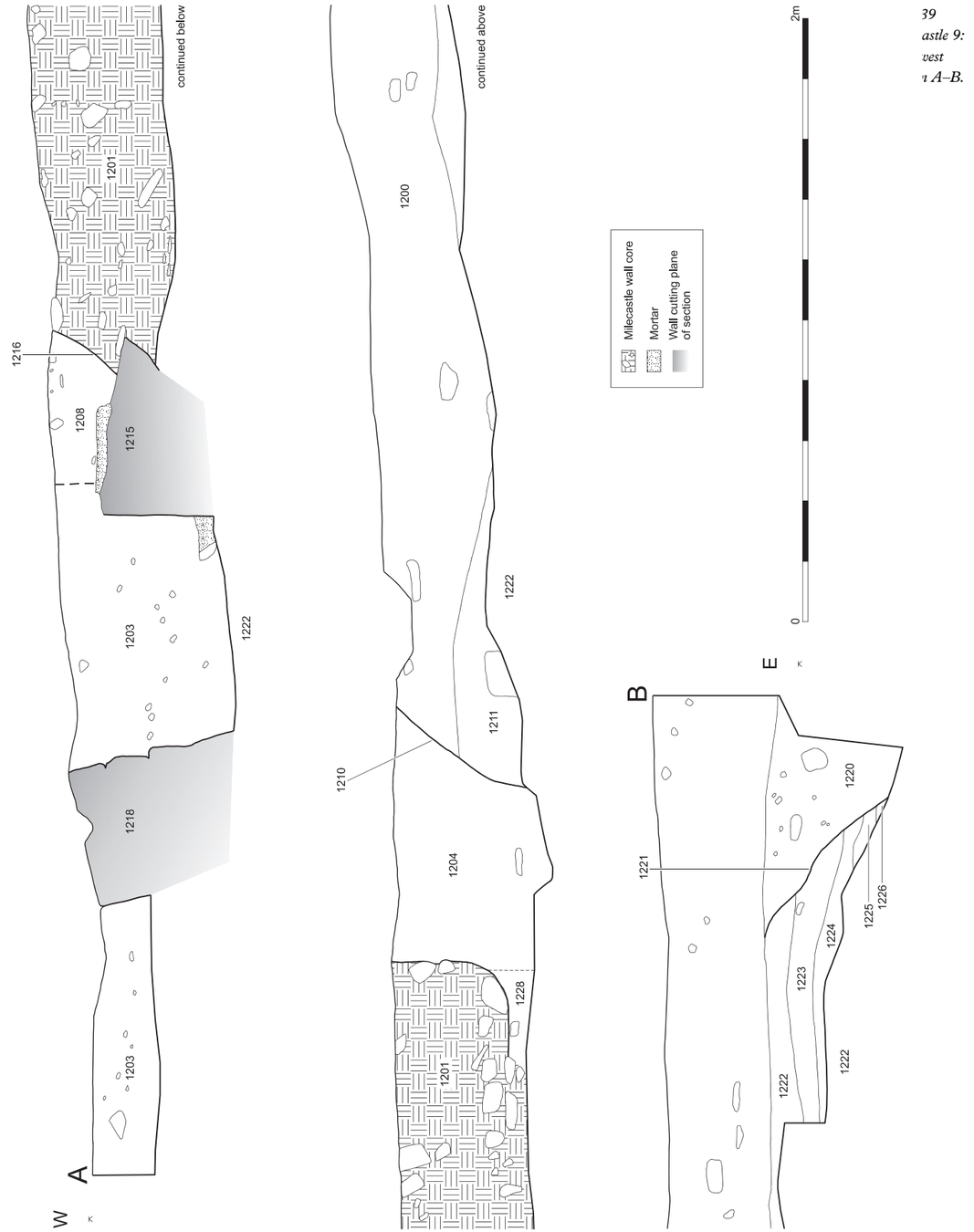


Fig 240
Milecastle 9: view west along trench showing exterior milecastle wall, and wall of internal building.

of yellow-brown mottled clay, although some fragments of grey mortar were found in the core, suggesting that at least part of it, had been mortar bonded. This was faced with grey sandstone blocks (1213, 1215; Fig 238), which were dressed to a good square face some 390mm square, but were otherwise roughly dressed, and which tapered back from 700mm–1.05m into the core.

The facing stones were bonded with clay similar to that in the core, but the stones of the inner face of the east wall retained mortar on the top surface, which had bonded the next course to the footing. As Birley (ibid, 153) observed, this mortar showed that the actual wall face had been set back from the face of the bottom course. In the present excavation this offset was measured at 140mm wide. Birley'=s photographs show a similar offset on the north face of the south wall, where part of the second course remained intact (ibid, pl xliv, fig 1). The south-east corner was totally robbed, although the foundations of clay and rubble filled a foundation trench taht described a rounded corner on the interior and exterior faces.

The wall of an interior building was found 1.02m west of the east face of the east wall of the milecastle (Fig 240). This building was clearly the primary stone structure found by Birley in 1929. The wall (1218) survived to a height of three courses (880mm). It was built of clay-bonded coursed rubble, with a clay core, and was 540mm wide.

Outside the walls of the milecastle, around the south-east corner, there was a paved surface of small yellow sandstone slabs 40mm thick set in yellow-brown clay (1214; Fig 241). This surfacing was not noted in 1929. To the east of the milecastle, at a distance of 4.65m from the face of the east wall, the western edge of a ditch (1221) filled by dark soil and rubble (1220) was found. This ditch was cut from the same level as that from which the milecastle was constructed, and appears to have been a contemporary feature (Fig 239).

Post-Roman deposits

A deposit of loose, mid-brown sandy material containing up to 50% sandstone rubble lay over the exterior stone surface. It had originally been banked up against the milecastle walls (E wall, 1211: S wall 1209), and appears to have comprised destruction debris from the collapse or robbing of the structure. It can be inferred from a reading of Birley's report (ibid, 154) that this material sealed the burial outside the south wall that was excavated in 1929. Within the intact stratigraphy over the east wall, most of which comprised the clay and rubble wall core, the eastern edge (1216) and stony fill (1208) of a pre-1929 robber trench, which had been cut to remove stones from the west face of the wall was defined.

The edge of the 1929 trench (1210) lay 950mm east of the east face of the east wall of the milecastle, and the disturbed and mixed stony soil of the backfilling of the excavation (1204, 1203) was found in between the standing Roman walls. The excavation trench had been cut through an *in situ* layer of dark grey-brown silty loam (1200=1202) containing fragments of sandstone

Fig 241
Milecastle 9: exterior stone surfacing.

rubble, including a considerable concentration of such material close to the eastern milecastle wall (1205) and ranging from 290mm to 500mm in depth. The active plough soil above the archaeological deposits (1207) was uniformly 220mm deep, and clearly represented the depth of ploughing that had occurred during the period since the 1929 excavation. Beneath this, the surface of archaeological deposits was scored by parallel plough marks (1206) up to 10mm deep.

Finds

by P Austen, N Hembrey and J Weinstock

Most of the objects recovered from Mc9 (Hembrey 2003) were of modern date, and came from the plough soil overlying the archaeological deposits. A whetstone recovered could have been of any date. Roman finds included two glass vessel fragments (SF 2000 0 1364 and 1365) and fragments of ceramic building material and fired clay, as well as the following objects:

1. 1366, context 1200, pre-1929 topsoil (Fig 242)

Roughly rectangular fragment of iron-rich micaceous sandstone. One end of the upper face bears two uneven incised cross-hatched squares, one of which is highlighted by a dark red colour, probably the result of the square being scratched down to a dark red layer in the stone. The stone is broken such that only one square is complete, the other nearly complete, and no others are present. Wear suggests that one edge is an original surface; the fragment appears to be broken at the other edges. There is some evidence of burning on the upper surface. Probably a fragment of a stone gaming board; although no exactly comparable objects have been found, these objects were made by individuals when needed, rather than being mass-produced. A similar pattern of squares containing crosses was found incised on a fragment of marble at Richborough (Bushe-Fox 1928, pl XIV, fig 1, no. 2) although the Richborough example bears joined squares, where the fragment from Mc9 has squares.

max length 105mm, max width 94mm, thickness 15mm; the one complete square measures 24mm × 24mm

2. 1361, context 1200; pre-1929 topsoil

Small fragment of a ceramic counter, roughly semi-circular in shape (slightly less than half survives). Buff/orange, patchy black staining visible on both surfaces. diam 20mm, thickness 2mm

3. 1368, context 1204; backfill of 1929 excavation trench

Complete ceramic counter, fabricated from a samian vessel, with traces of the original surface surviving on both faces. One face displays three deep score lines; the other appears to bear a pattern, with four patches of glaze surviving.

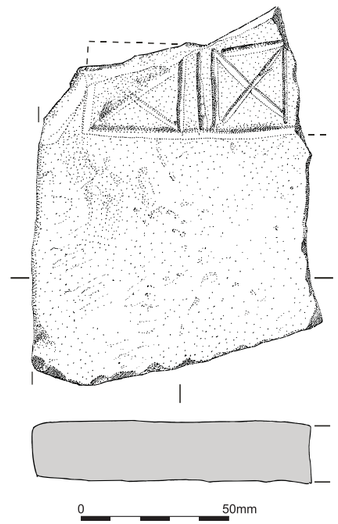


Fig 242
Milecastle 9: stone gaming board fragment.

Complete and fairly regular in shape, both edges and faces are fairly abraded. Max diam 27mm; thickness 5mm

Pottery (Austen 2006) was found chiefly in reworked contexts comprising either pre- or post-1929 topsoils (1200, 1202, 1205, 1207) and the backfill of 1929 excavation trenches (1203, 1204). Most of this was of medieval and post-medieval date. Unstratified Roman material comprised a fragment of amphora handle, two BB2 sherds (late 2nd–early 3rd century AD), a very abraded sherd of BB1 and four sherds from Yorkshire calcite gritted jars (late 3rd–4th century AD). The only stratified pottery was a single body sherd of BB2 of an undiagnostic form (Antonine–3rd century) from the upper fill of the eastern ditch (1220).

Eighty-one animal bone fragments were recovered. Most of the material belonged to cattle (skeletal elements present include, among others, metapodials, radius, femur, pelvis, tooth) but also a few remains of pig and ovicaprids. There were also some small carbonised and some calcined fragments. The state of preservation of the bones varies from relatively fresh to weathered with rounded edges, suggesting a number of different depositional histories. It cannot be certain which (if any) of the material is of Roman date (Weinstock 2001).

Interpretation

The banded strata that pre-date the construction of the milecastle are probably the most significant new discovery on the site. There are a number of possible interpretations. One is that they were laid as a building platform in preparation for the construction of the milecastle. It is also feasible, however, that

these features related to prehistoric occupation. If so it is possible that the double row of post holes only 1.8m apart, which Birley identified, was associated with them. There was clearly some confusion during the original excavation as to where these fitted in the sequence, and it was also recognised that the material upon which the milecastle was built was not the natural ground surface. It was observed that "in no case did [the post holes] extend into the undisturbed subsoil; and it is not easy satisfactorily to distinguish post holes made in an artificial layer" (Birley 1930a, 156). The post hole lines were so close together that they are clearly not the walls of an internal building. Only further research will confirm whether these belong to an earlier, possibly prehistoric phase.

No new data on the form or the construction of the milecastle itself has been recovered from this work, although the paved area outside the south-east corner and the ditch to the east are new elements in the archaeology of the site. The ditch was cut from the same level as that from which the milecastle was built, and was parallel to the east wall. A late 2nd–early 3rd century BB2 sherd came from its fill. It seems clear that the ditch and milecastle were associated. In 1929 a trench was cut 15.6m southwards from the milecastle and no trace of a southern ditch was found. It is thus improbable that the ditch found in 2000 is, as first assumed, part of a ditch system that surrounded the milecastle (unless the 1929 trench went through an entrance). The stratigraphic relationship is, however, unambiguous and the milecastle and ditch are certainly related in some way.

Milecastle 10 (Walbottle Dene): 1999

The site

Mc10 was discovered in 1864, when the bridge over Walbottle Dene was renewed. A strip of Wall four courses high, including a milecastle gateway, was exposed on the east side of the Dene (NZ 1648 6675). As Bruce (1867, 123) reported: "unhappily it was found necessary entirely to remove the Wall, but the remains of the gateway have been preserved, and for its better protection the fence of the garden opposite has been brought forward to enclose it."

The north gate is still extant within the garden of Walbottle Dene House immediately north of the B6318 road. The central part of the milecastle lies beneath the road, but the southern part is faintly visible as a platform higher than the surrounding land within the ploughed field immediately south of the road (Figs 235, 243).

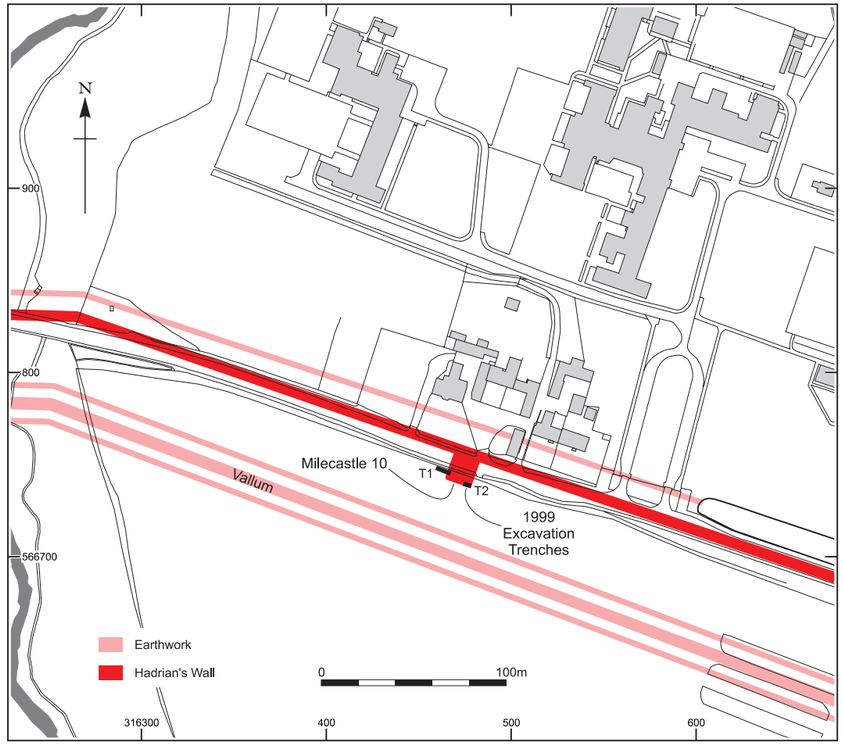


Fig 243
Milecastle 10: milecastle and excavation trenches of 2000 against modern mapping.

An examination of the site in 1928 was reported by Spain (1930, 533), stating that the milecastle had walls of "ithe same massive construction and thickness of the Great Wall"î (ie 3.1m), and that this was identical to Mc9 (Chapel House). The implications of these two adjacent Broad Wall milecastles has recently been considered by Symonds (2005; and p 139). A fragment of the curved south-west corner and the south gate were located. These were also very similar in construction to Chapel House. Mc10 is a long-axis milecastle measuring some 17.68m by 14.32m internally (ibid). Like Mc9, the gates are of Type IV, with a single pair of gate responds. Nothing has hitherto been known of the interior layout of Mc10.

In addition to the evaluation work, the opportunity was taken to undertake a stonemasonry survey on the extant stonework of the north gate.

The north gate

by Peter Hill

The north gate of Mc10 lies in the thick shrubbery of Walbottle Dene House, close to the boundary with the road. It has remained unexamined since its discovery, and Bruce's illustration of it (Fig 244) is the only known record. Owing to its location, access is extremely difficult, and drawing a reliable plan is not easily possible. The plan in Fig 246 is therefore somewhat schematic, based upon the measurements of the stones made on site.

The gate was examined in October 2001, and a technical report on the masonry submitted for inclusion in the site archive (Hill 2001b). The following account summarises and discusses the full technical report. The assessment of this gateway gave a rare opportunity to examine a gateway unworn by the feet of modern visitors. It was impossible to take full advantage of this owing to its location in a thick and prickly shrubbery, but some useful information has been gained. The purpose was to examine the tool marks and method of working in order to gain precise technical information about the standard of workmanship, the abilities of the builders, and the standard of supervision and overall direction of the work, and from this to see if further light could be shed on the history of the Wall. The stone-by-stone survey was made on an objective basis without regard to any received opinion. Due to the difficulty of access the judgements made must be seen as provisional.

North east pier

This pier now consists of two foundation blocks (NEF1 and NEF2) and one pier stone. The stone that formed the quoin of the pier (NE1/1) has been lost; the surviving stone is probably in its original position and has been designated NE 1/2.

NEFl (765mm × 810mm × 100mm to ground level) The visible parts of the stone are much weathered apart from the north face, which shows heavy punch furrows, range up to l0mm. This face projects some 90mm from the north face of the surviving pier stone. The top bed appears to be about straight, and the joint to the sill is tight and was probably worked with some care. The major feature of interest is the pivot hole for the gate. It is a sub-rectangular sinking on the south edge of the stone, 185mm wide and 115mm front to back. It is some 40mm below the top bed of the stone, and the base of the pivot hole about 30mm below that. The western edge of the sinking is about 75mm from the edge of the stone and EF1. The pivot must have been contained partly in the very wide joint between this stone and the first foundation stone of the passage wall. The base of the 95mm diameter pivot hole is somewhat smoothed and more or less flat, although it rises a little to the west side. No tool marks are visible in the pivot hole except for a single peck on the western edge; the sub-rectangular sinking shows a number of punch marks. The south edge of the stone and the western edge of the pivot hole are somewhat damaged.

NEF2 (910mm × 930mm (min.) × 100mm to ground level) Most of the top bed is hidden beneath

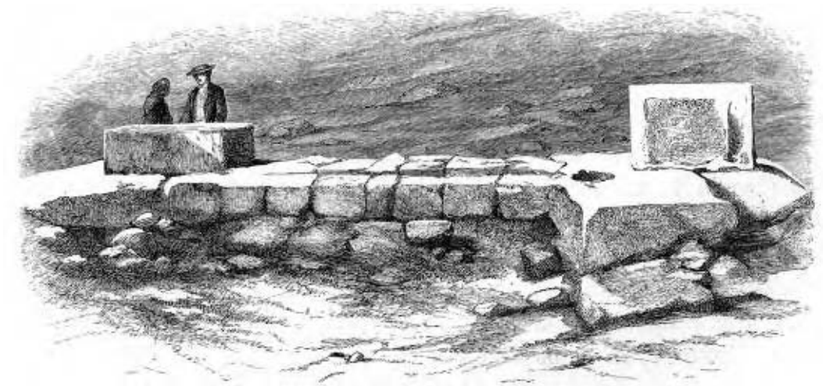


Fig 244
Milecastle 10: north gate of Mc10 as originally illustrated by Bruce (1867).

the pier stone NE1/1, but something could be seen of the back and south sides. The back tapers away from a point beneath the pier stone; no tool marks could be seen. Presumably the stone as quarried was not quite big enough to make the required size. On the east side, the top has been cut away at the front on the line of the east side of NE1/1, to a depth of 25–30mm; this sinking dies way after about 150mm as the top of the stone falls away naturally to the back. Some unquantifiable punch marks were visible. The north face, which stands 100mm above ground level, is worked with a punch in heavy furrows, range up to 10mm. The joint to the east is worked with a punch, range up to l0mm, and is approximately square to the north face. The stone was of fair Roman military engineering standard

NEI /2 (710mm × 630mm (at base)/530mm (at top) × 565mm). The bed height could be measured only on the east side. The face was very difficult to see, but it was clear that the left-hand side and some of the top were very carefully worked with a punch in fine pecks and short furrows, range 3mm occasionally 5mm. So far as could be judged the finish was remarkably neat and carefully worked. The lower part of the right-hand side was less good, and is 4–5mm lower than the remainder. It was more heavily worked, with a range which appeared to be nearer to l0mm but this is something of an estimate as the surface could not be clearly seen. The lower 40mm on the left hand side projects by *c* 10mm from the surface and appears to project slightly from the general line of the right-hand side of the face. The right-hand side of the face is 2–3mm under-square to the top bed. It was not possible to see whether the face has chiselled margins. The right-hand joint, against the missing NEI/ 1, is not a neat joint, with occasional pick furrows, range up to 20mm, at the top where it is 30mm under-square to the face. The remainder of the joint is probably worked with a punch or is natural, but is all much weathered. The left hand joint seems to be worked with some care for the first 200mm, and is about square to the face at top and bottom. Thereafter the joint tapers a little.

The back of the stone is probably natural and slopes out at about 20°∞E; this appears to be original as there are traces of a punch at top and towards the west side. The let hand and right-hand corners are lost in what seem to be later fractures. The generally unworked state of this face is of no importance, as the stone would have been backed by corework. The top bed is approximately straight, worked with a punch right to the edges in large pecks, ranging 6–7mm; it is workmanlike but not sophisticated. This stone is in general adequate, significantly raised in standard by the remarkably cleanly worked face.

What could be seen of the foundation blocks suggests that they were not untypical of Roman military engineering, tidily squared up in a manner appropriate to work at ground level, but not given a sophisticated finish. The same applies to the single foundation block for the east passage wall.

North west pier

This now consists of two foundation stones (NWF1 and NWF2), which are at ground level, and two pier stones, which may not be in their original position.

NWFI (640mm × 100mm to ground level on the south side; the north side is at ground level, the west edge is under the pier, and the east side is not only against the sill where the trunk of a holly tree grows). There are heavy punch marks on the back (south) edge, which would have formed the joint to the foundation of the passage wall. The top bed, where it projects from the face of the pier appears to have been reasonably good. The pivot hole survives at the south east corner of the stone. Like that on the north-east pier, it is contained within a sub-rectangular sinking about 50mm deep. The sinking measures approximately 235mm × 105mm, somewhat roughly cut in with a punch. The pivot hole and the south-east corner of the stone are both damaged, but the pivot appears to have been *c* 80mm in diameter, and 50mm deep below the sinking. The pivot hole looks relatively unworn and has punch marks in the bottom. Unlike that on the east pier, the pivot could just have been contained within the stone; it was really too close to the south edge although the pressure would have been on the north and west sides of the hole.

NWF2 (*c*1000mm × *c*1050mm × 75mm at ground level). The top bed, where it projects from the face of the pier, appeared to be worked more or less straight except at the right-hand end where it fell away somewhat. Where it projects at the back of the pier, by *c* 380mm, there are heavy punch marks, range up to 6–7mm in short, random furrows and pecks, and the surface slopes down markedly until buried. In general the stone is very irregular apart from the front edge.

NW1/1 (925mm × 590mm × 500mm). The majority of the face is worked with a heavy punch in furrows from top left to bottom right, range 10–12mm, and projects from the wall line by about 45mm. At the top is a very weathered margin, 2–3mm round, with a vestigial unmeasurable margin at the bottom; the left hand margin was not available owing to heavy vegetation. At the right-hand side is a very clear, 25mm wide chiselled margin, approximately straight with undulations of 2–3mm, except for the lower 40mm, which was not completed. This margin is square to the top bed. The east face, where it could be seen, is a flattish rock face, very weathered but showing some punch marks, ranging 10mm. The face angles in to the bottom, by up to 60mm. The upper edge has a chiselled margin 2–3mm round, caused by an area in the centre

worked with a punch. The south face, perhaps *c* 240mm long, was roughly worked back with a punch and is very weathered. At the point of return to the passage wall, the stone rises 10–15mm. The joint to the passage wall was worked with a heavy punch at random, ranging up to 24mm. The top bed, now very weathered, is 2mm round to 2mm hollow, ranging 2mm, occasionally 5mm. This stone might have been of monumental appearance when newly worked, but the face has a finish quite unlike that given to NE1/2. It is let down by the east face and the poor top and bottom margins on the north.

NW1/2 (530mm × 480mm × 485–490mm (variable)) The north face is a 50mm rock face, worked with a punch in furrows top right to bottom left and at random, range up to 15mm. There is a poor and very weathered chiselled margin at the top, and at the left-hand side a margin that is varies between straight and 5mm hollow. It is not a neatly worked face by any standard. The left-hand joint, against NW1/1, looks as though it may originally have been tight, but there is now a gap of 35mm at the front; the stone may have been moved, if indeed it originated in its present location (*see* p 153). The upper arris is approximately square to the upper margin on the north face. The right-hand joint is worked heavily with a punch, ranging up to 20mm in places, in a manner appropriate to a joint against squared rubble (Fig 245). For the first 200mm it is approximately square to the top of face A, but then falls away by 50–60mm. The appearance might originally have been better but it is now heavily weathered. The top bed, now much weathered, is straight to 2–3mm round, with traces of pecks range up to 3mm. It was probably at least a fair bed. There is what must be presumed to be a pinch bar slot centred 225mm from the north face and 185mm from the left-hand joint.

The back is very weathered at the top and the lower part now varies between approximately straight and 5mm round, clearly worked in pecks rather than furrows; this degree of care would be rather wasted as it would be backed by corework. The lower 200mm is relatively smooth and near straight; this could be natural but it appears to have been smoothed by some mechanical action. Near the centre of the lower edge is an unusual feature. This is best described as a l0mm wide slot, cut into the stone from the bottom bed, the 15mm thick outer wall of which has partly broken away. The maximum depth from the back of the stone is 25mm. The function of this feature is unknown. It was certainly not a lewis hole or a wedge hole, or even the start of either, as the slot is much too thin. It is perhaps not impossible that it is a natural feature, although this does not seem likely. This was not a good stone. The top bed shows the usual care taken with beds in Roman military engineering, but it was otherwise not the subject of any great care. Only the back shows pretensions to any sort of quality, and that is the one place where quality was totally irrelevant.

Fig 245
Milecastle 10: photograph of the north-west pier of the north gate in its present state (photograph by P Hill).

The sill

Little can be said about the sill., as close examination was impossible, which is unfortunate as it is the only complete milecastle gateway sill now visible. No technical assessment has been made of any milecastle sill in the course of other excavations.

The sill is complete. It is made up of seven stones between, and at about the level of, NEF1 and NWF1. All the stones are set with their long axes parallel to the axis of the gate, and all are checked out at their southern end to form a stop for the gate; there is no clearly defined central stop block as is found at some gateways (eg Housesteads east gate, north portal) but the central stone, no. 4, is narrower and a little higher than the rest. The upstand formed by the check is *c* 60mm high, except in the case of no. 4, which is 100mm high. The base of the check, which is 290–240mm wide, is 20–30mm below NEF3 which is itself 20mm below NEF1. The stones vary in both length and width, three appear to have been broken off at their north ends. All the stones are much weathered, with marks of a heavy punch, range up to 20mm; the work seems to have been relatively rough and ready, as one might expect on a sill that would be subjected to wheeled and foot traffic.

Discussion

The pivot hole in the foundation NEF1/ 1 is in a sub-rectangular sinking, which is reminiscent of the NE pier of the north portal of the east gate at Chesters fort (Hill 1997b, 34). In that case there was no pivot hole, but only a l0mm circular depression, which was not clearly understood at the time of that survey, and it was assumed that the pivot hole was in a separate stone that was perhaps related to the sinking in some way. In the light of the sinking in both the piers of the present gateway, which have not been seen elsewhere, it now seems likely that this was the start of a pivot hole that was not completed; if

correct, this would mean that only the south portal of the east gate was completed as such. As these square sinkings are not a normal feature of gate pivots, it may be that both Chesters fort and Mc10 were built by the same legion. The base of the north-west pivot seems to be unworn, in distinction to the east pivot. This suggests that only the eastern leaf of the gate was opened on a regular basis.

The single remaining pier stone, NE1/2, is interesting. The joints are in no way remarkable, but the face is finished to a higher degree than at any other extant milecastle or fort gate. It is not a first class piece of work as the right-hand half of the face appears, so far as could be seen, to be rather unevenly worked, but the stone still stands out as having received an unusual degree of skill and care. It is unfortunate the stone NEl/1 is missing.

It is important to note that Bruce's illustration does not accord with the present state of the gate. The single stone remaining of the north-east pier is shown in this drawing in approximately its present position and in such detail as to record the loss on the south-east corner of the stone.

The sill is depicted with the correct number and general form of the stones; even the slightly higher and narrower stone no. 4 of the sill is clearly identifiable. For the north-west pier, however, which now consists of two stones similar in size to that of the north-east, only a single stone is shown, and that at only half the bed height of that on the north east pier. Whether this is artistic licence or whether tumbled stones were later put in the place of this single stone is not known.

The accuracy of the drawing in other respects does suggest that these stones are not in their original position. Since the drawing was made, two stones that appear to have come from the curtain wall have been placed on the sill, one at each end close against the return faces of the piers, which shows that a certain amount of rearrangement has carried out. Relevant to this point is stone NW1/2, which is something of an enigma in that while the face is averagely poor work the back has every appearance of a re-used stone. The care taken in working the back is one indication of this, and the slot at the base is another. While it must be admitted than no function can be suggested for this slot in any position, its existence strongly suggests that the stone had some previous use or position.

Re-use of stone in the initial building of the milecastle is hardly possible as no Roman building is known to have existed in the vicinity. Re-use as part of rebuilding of the gateway in Roman times is a possibility but one for which no evidence exists. Accepting the general accuracy of the drawing in Bruce, the balance of probability is that the stone is not in its original position but was placed there after the excavation of the milecastle in 1864. If this is the case there must be is a strong possibility that stone NW1/1 was also placed in its present position at the same time. In view of the extreme difficulty of examining the stones under the present conditions, this suggestion must be no more than provisional until such time as further work can be undertaken in better conditions.

Although stone NW1/1 may not be in its original position it was clearly worked to be part of a pier, as shown by the slight rise in the surface of the south face, where the passage wall would have abutted it. This is very typical of pier stones in most milecastles. It must remain an open question whether it originated higher up the pier, and was discovered during excavation or the re-ordering of the garden. Whatever the truth of this, the stone is of a different quality from NE1/l. The heavy furrows on the face are rather similar to work seen on the north gate of Mc37 (Housesteads). The stone is adequate in quality compared to the relative sophistication of the face of NE1/1. The difference in quality is not easily explained, although if NW1/1 did come from higher up the pier it might reflect the abrupt change in quality reflecting interruptions in work at Mc37 (Hill 1989), and at the forts of Birdoswald (Hill 1992; Hill and Wilmott 1997), and Housesteads (Hill 1995).

The evaluation

The evaluation methodology proposed in the Project Design (Austen and Wilmott 1999) was to excavate two trenches, one 4m ×◊ 2m in size to transect the south wall towards the south-west corner of the milecastle and the second 2m × 7m, crossing the east wall and the eastern side of the interior. The first trench had been cut according to the OS location of the milecastle on the 1:2500 map. It was soon realised that the milecastle had been wrongly located on the map, and the trenches were amended. Trench 1 measured 2m × 8m and lay across the western side of the milecastle while Trench 2 at 2m × 4m targeted the eastern edge in order to demonstrate the true position and dimensions of the structure (Figs 243, 246). In both trenches the ploughsoils were stripped by hand and the underlying archaeology recorded in plan. Cut features were sampled in order to characterise them and to recover dating evidence.

Trench 1 (Fig 247)

Within Trench 1 a north–south linear feature (410, fill 411) proved to comprise a robber trench 2.98m wide for the external western wall of the milecastle (Fig 248). On the eastern side of the trench the bottom course of facing stones for the interior face of the wall were found *in situ*, while on the western side similar stones, albeit disturbed, might have comprised the remains of core work. The trench did not extend far enough to reveal the facing stones of the outer face. The construction trench for the wall

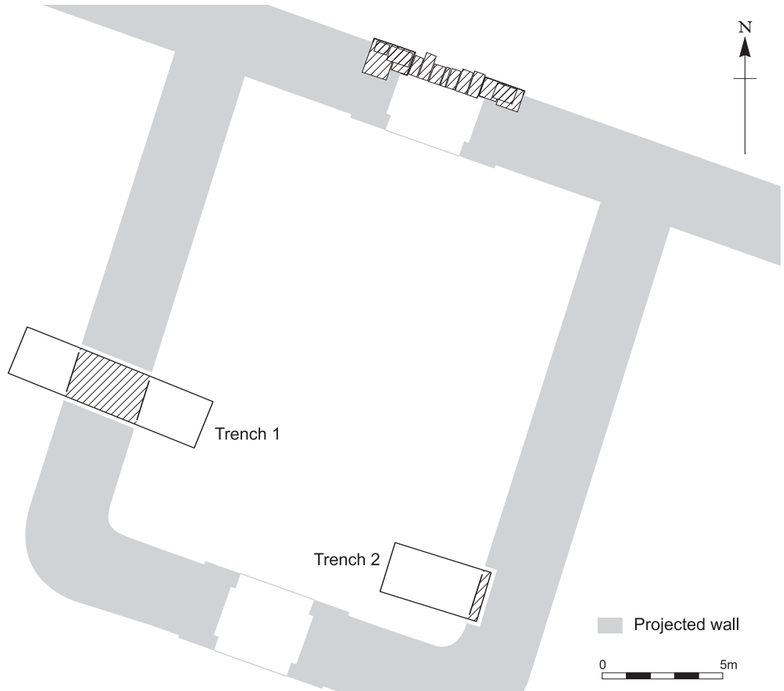


Fig 246
Milecastle 10: plan of Mc10 summarising trench positions and current knowledge. The gate plan is somewhat stylised from measurements taken on site owing to difficulty of access for accurate drawing.

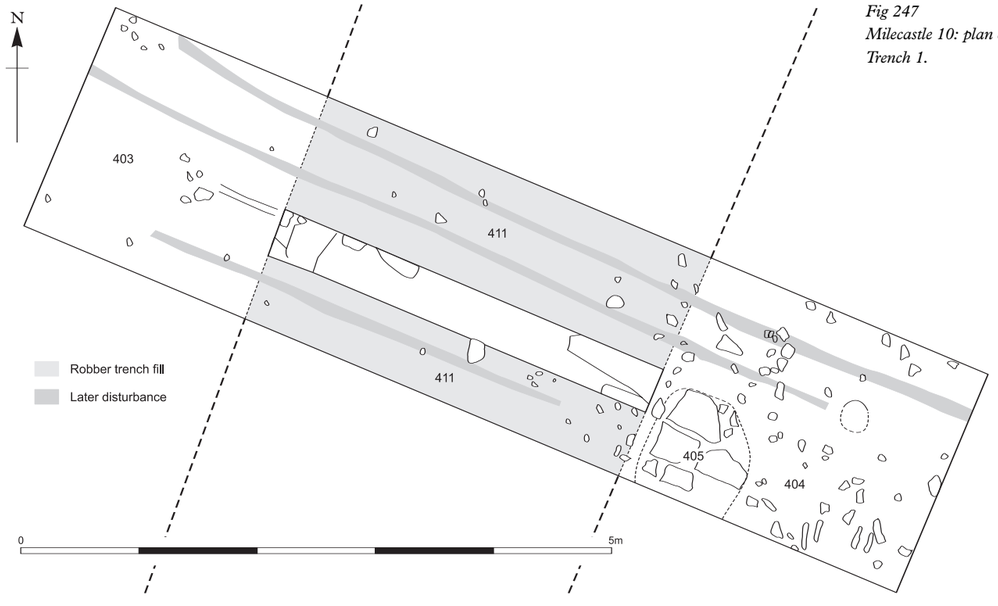


Fig 247
Milecastle 10: plan of Trench 1.

Fig 248
Milecastle 10: photo of Trench 1 showing section through robber trench and surviving wall face.

was not absolutely clear, but appears to have cut the dark yellow-brown sandy clay subsoil of the site. To the west of the robber trench this material (403) was clean, while inside the milecastle (404) it was less so. Within the milecastle a concentration of stones pressed into the upper surface of the subsoil may have been the remnants of cobbling. A damaged surface of five laid flagstones, the western edge of which was straight, and laid along the line of the robbed wall face (405) suggested that the milecastle interior was surfaced in stone.

The archaeological surface was heavily scarred by plough marks (406; 407; 408; 409)

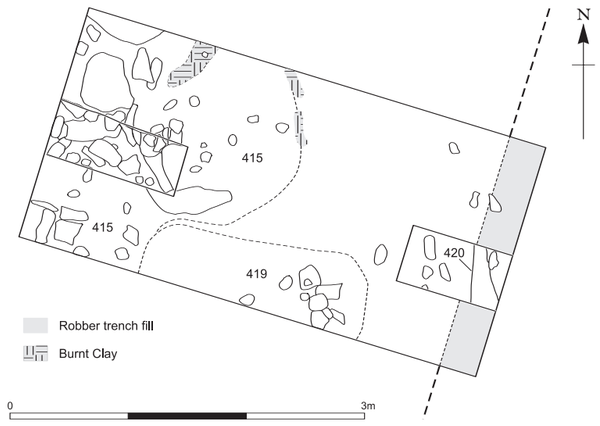


Fig 249
Milecastle 10: plan of Trench 2.

demonstrating that continuing agriculture has caused the attrition of the monument, probably in relatively recent times. Broadly 'modern' artefacts have been found throughout the plough soils. The upper (active) plough soil (401), throughout which ploughed-back straw was found, was 300mm in depth. The lower plough soil (402), however, contained no straw and appears to represent a 'buffer zone' 50mm deep between active cultivation and the upper surface of surviving archaeology.

Trench 2 (Fig 249)
Trench 2 contained a complex sub-circular feature 2m in diameter (415). This was apparently constructed of stone and clay, and was very burnt. It would appear to have functioned as a hearth or oven. To the south-east of this feature a group of flat sandstone flags measuring 490mm square (419) might have been either an element of disturbed flagging or a post pad. This rested on a small layer of clay. All of these features were sealed by a deposit of stony clay-silt (416). A small sondage at the eastern end of Trench 2 cut through 416 to reveal the undisturbed natural subsoil (418), which was cut by a north–south linear feature (420). Although only the western side of this feature was revealed, it contained a large facing stone (422), which is interpreted as part of the eastern wall of the milecastle. The plough soils followed the same pattern as in Trench 1, and the archaeological surfaces are similarly scored with plough marks.

Finds

by P Austen, N Hembrey and J Weinstock

Mc10 yielded miscellaneous modern material including structural ironwork and four nails, which might be Roman or later. There was a small assemblage of tile and fired clay, and two pieces of oyster shell. Two undiagnostic flints (SF 9970 461) were also present. Two objects were worthy of note (Hembrey 2003):

1. 9970469, context 415, Roman hearth

Small fragment of micaceous sandstone, roughly triangular in shape; the top face bears an incised cross, splitting the fragment into four sections. There is one original edge. Probably a gaming board fragment (cf Allason-Jones and Miket 1984, no. 12.1; Philp 1981, 167, no. 217. Length 30mm, width 26mm, thickness 7mm; cf (similar)

2. 9970473, context 411, robber trench

Thick sandstone fragment, roughly triangular in shape (Fig 250). The upper face bears decoration in the form of a circle containing diagonal lines, possibly a spoked wheel, some of which are cut to outside the circle. Function is unknown and no comparable objects have been found; it may be graffiti or decoration, or may be part of a gaming board. Length 84mm, width 80mm, thickness 26mm.

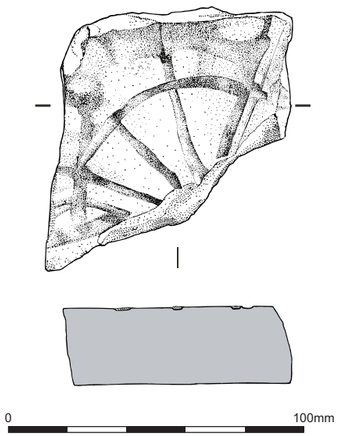


Fig 250
Milecastle 10: incised stone object.

Pottery (Austen 2006) was mostly unstratified, and included many post-medieval and modern sherds. Unstratified Roman material recovered from topsoil deposits (401, 402) and robber trench fills (411, 414) comprised 25 body sherds of undiagnostic oxidised wares and one of greyware, three abraded sherds of buff amphora, and three BB2 cooking pot rim fragments. The hearth (415) yielded eleven body sherds, mostly BB2, including fragment of the base of a bowl or dish (2nd–early 3rd century AD). The ground surface within the milecastle (404) produced six Roman sherds, including part of neck of BB2 cooking pot.

Eleven fragments of animal bone were recovered, some of which may be Roman. The group consisted entirely of cattle (Weinstock 2001).

Interpretation

The basic dimensions of Mc10 have been broadly confirmed by this work. The measured dimensions are, however, slightly different from the round figures (in feet) recorded by Spain. The width east–west of the milecastle is not 14.32m but 14.76m, and the exterior walls are not 3.05m but 2.98m thick. These are very minor corrections, however, and lie within any margin of Roman setting out or modern measurement error, or any combination of both factors. The north–south length of the milecastle, however, appears to have been accurately calculated by Spain at 17.68m. The work on the north gate has been extremely useful in demonstrating the differing standards of workmanship represented in the gate, and the possibility, however tenuous, that there was a hiatus in the building of the milecastle followed by a resumption of work to a different standard. The burnt feature in Trench 2 seems to be a Roman oven, which was constructed in the south-west corner of the fort.

Milecastle 14 (March Burn): 2000

The site

The site of Mc14 (NZ 1068 6768) (Figs 251–2) stands in a slight kink in the course of the Wall, as it rises westwards from the valley of the March Burn. The platform that marks the milecastle site is currently some 400mm high, and has clearly been spread by continuous and continuing ploughing. It was noted by both MacLauchlan (1885, 16) and Collingwood Bruce (1867, 129). The only archaeological intervention before the present evaluation was by C E Stevens, who trenched the site in 1946 as part of an exercise to see whether Mcs14, 36 and 41, and T36a, 40a and 40b conformed to the typology that had been established by Simpson (1931) and Birley. The only published reference to the work (*J Roman Stud* 1947, 168) is a terse comment to the effect that the milecastle was 18.3m wide internally, had 'broad' side walls and was "presumably of short axis type". The field in which it is situated is under regular cultivation. Masonry and burnt levels have occasionally been observed after ploughing, as have pottery and other artefacts.

The evaluation

by Helen Moore

Two trenches were excavated (Fig 252). Trench 1 (8m × 2m) was dug to determine whether the southern wall of the milecastle survived, and to sample the interior archaeology to assess survival and condition. Trench 2 (10m × 2m) transected the western wall of the milecastle and continued eastwards into the interior.

Trench 1 (Fig 253)
The plough soil (708) covering Trench 1, varied in thickness between 0.21m and 0.25m, depending on the gradient of the slope. It contained relatively little rubble to suggest the presence of a building below the surface. Immediately below the plough soil, however, a large spread of rubble was uncovered (719), most of it randomly distributed. Constructed on top of the rubble was a fragment of wall (720), 1.92m long × 0.28m wide, aligned on a north–south axis. It was constructed of sandstone slabs, of which there were two courses bonded together with a pale yellow sandy mortar. It was very badly robbed and plough-damaged and little of it survived. No other walls or structural features survived at this level within the trench to suggest a plan of the building, but it is probable that it may continue farther to the east beyond the trench. The rubble was spread more densely in the northern sector of the trench, which may suggest disturbed structural features in this area.

The rubble sat within a homogeneous deposit of mid-red-brown sandy silt (709), which seems to be

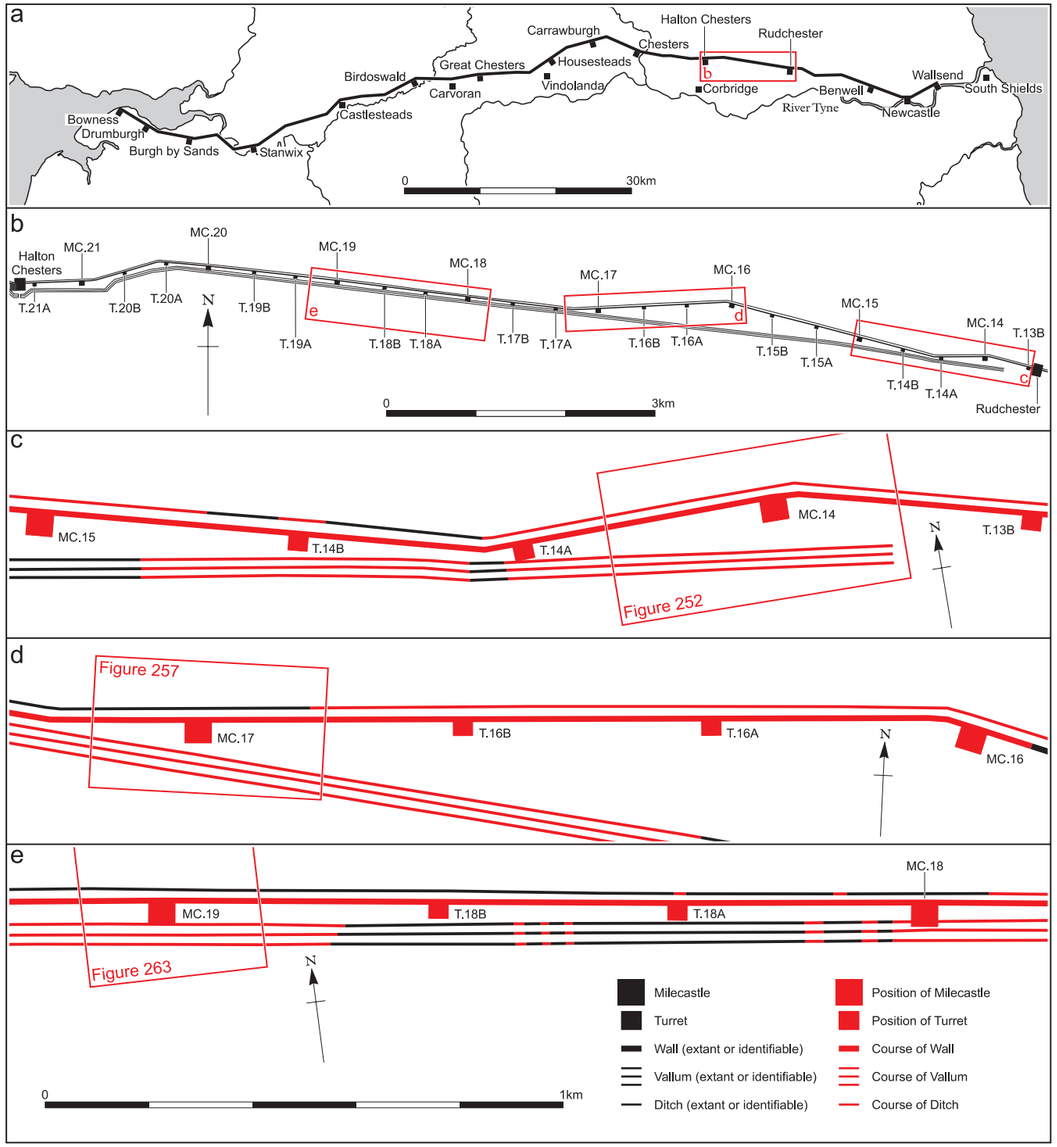


Fig 251
Milecastle 14: location of Mcs 14, 17 and 19 on Hadrian's Wall, and of Figs 252, 257 and 263.

an earlier plough soil. It was very fine and uniform in colour, which suggested that it had been reworked over a long period. It varied in depth from 0.34m to 0.50m, being much thicker at the southern end of the trench.

The southern wall of the milecastle was not visible at this level, so a decision was made to cut a small slot along the eastern side of the trench 0.50m wide and 5m long to ascertain if it still survived below the lower rubble and soil (709). The remnants of the south wall were discovered about 0.55m below the topsoil. Only the rubble core of the wall survived, the facing stones having been robbed away completely. What was left of the wall was composed of irregular pieces of sandstone bonded together with a yellow sandy mortar (722: Figs 254,

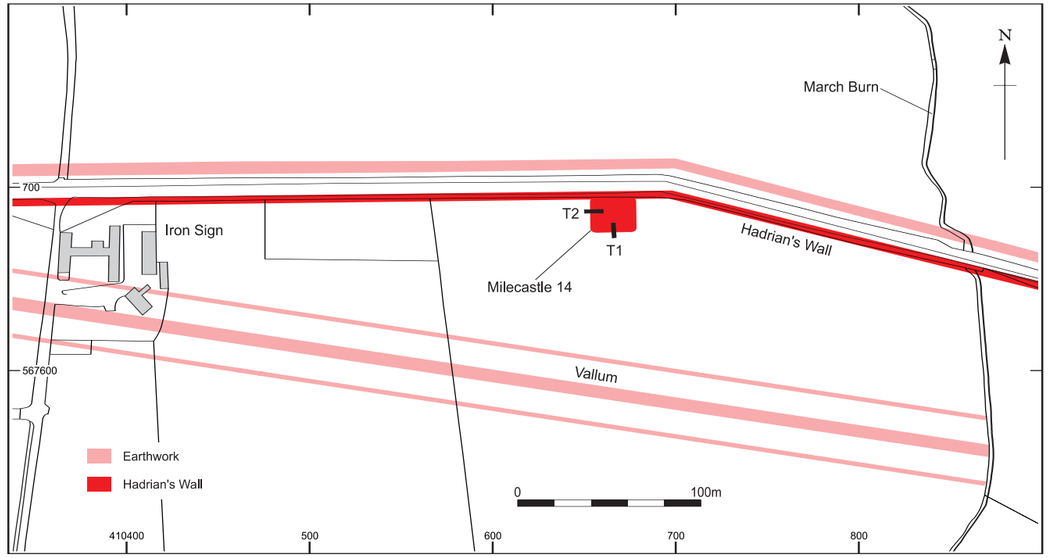


Fig 252
Milecastle 14: Mc14 and excavation trenches shown against modern mapping.

256A–B). This was very similar to the natural subsoil, except that it was darker in colour and contained frequent white patches and flecks of lime. The rubble was very loose and had probably been disturbed by stone robbing rather than ploughing. The mortar and rubble were 2.40m wide, while the robber trench, which probably retains the footing width, was 3.52m wide.

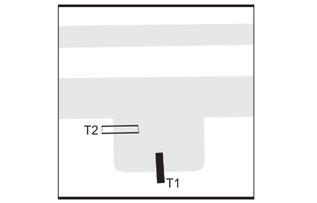
The natural subsoil (710) was visible below a large depth of the lower plough soil (709) at the southern end of the trench, approximately 0.70m from the top of the topsoil. The northern end of the trench was not excavated down to natural.

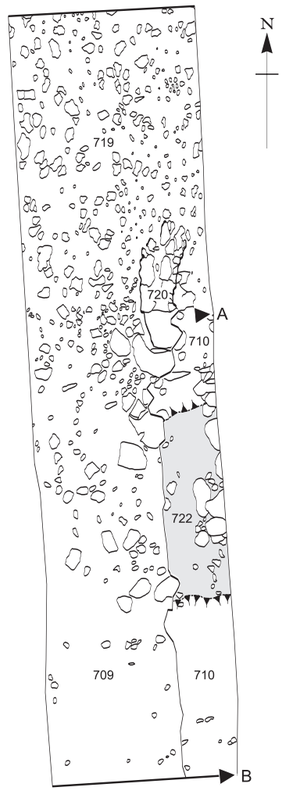
Trench 2 (Fig 255)

The topsoil (700) covering Trench 2 varied in thickness between 0.28m and 0.32m, owing to the gradient of the hill, which sloped downwards to the west. Directly below the topsoil on the western side of the trench lay a similar deposit to lower plough soil and rubble (709) noted in Trench 1 (701). This was cut buy a north–south aligned robber trench (706) filled with a deposit of loose mid-greyish-brown sandy silt with yellow mortar flecks containing large quantities of rounded and angular stones (707). The robber trench had a good eastern edge against a surface of crushed sandstone rubble in a sandy matrix (705). A deeper slot 0.50m wide and 6m long was excavated through the fill (707) of the large robber trench in order to confirm the identification, and to see if any walls survived *in situ* below its fill. At the western side of the trench below the robber trench fill, the western wall of the milecastle (716) was identified. All of the facing stones had been removed, but the wall core survived in the form of sandstone pieces bonded roughly together with pale yellow sandy mortar. This wall footing ran westwards beneath the supposed rubble and plough soil (701), and it became clear that this was the fill of an earlier robber cut, whose east edge had been removed by the excavation of the second robber trench (706), and whose west edge lay beyond the limit of excavation (Fig 256C–D). The excavated wall footing revealed beneath the fills of these robber trenches was 3.53m wide and 0.70m below the topsoil.

At the eastern end of robber trench (706), the fragmentary remains of another wall were noted (718), *c* 1.20m to the east of the western wall of the milecastle (Fig 256). All of the facing stones of this wall had also been robbed, and only the loose rubble and yellow mortar core survived. It was up to 760mm wide, and was 0.70m below the top of the topsoil. This fragment would appear to be the remnant of the western wall of an internal building within the milecastle, robbed simultaneously with the western outer wall.

At the east edge of the trench lay a second robber trench (703). This was not seen completely in plan, as it extended to the east beyond the trench edge. It had vertical sides and was filled with a dark grey-brown clayey silty sand (704), which contained large amounts of stone rubble, probably discarded from the robbing of the wall. In the small slot that was excavated, it was evident that any wall had been completely robbed down to the bottom of its foundations as none of it survived *in situ*.





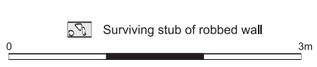


Fig 253 (above) Milecastle 14: plan of Trench 1.

Fig 254 (above, right) Milecastle 14: trench 1 showing section through robber trench.

It seems possible that this trench robbed the eastern wall of the internal building (Fig 256E–F).

Both robber trenches (706) and (703) truncated a sand and rubble surface (705), which is likely to be the floor surface associated with the internal building mentioned above. This surface was composed of a mid-orange grey-brown silty sand with frequent angular sandstone fragments rammed tightly together.

Observed in the base of robber trench (703) was a circular feature (713), which was *c* 90mm deep with concave gradually sloping sides and a rounded base. No finds were recovered from the fill (714), a homogeneous red-brown silty clay. It was not completely seen in plan as it was excavated at the base of a small slot through the robber trench, so it is difficult to determine what its form or function was.

The natural subsoil (702) was only observed at the base of the two robber trenches (706) and (703), and was approximately 0.75m from the top of the topsoil.

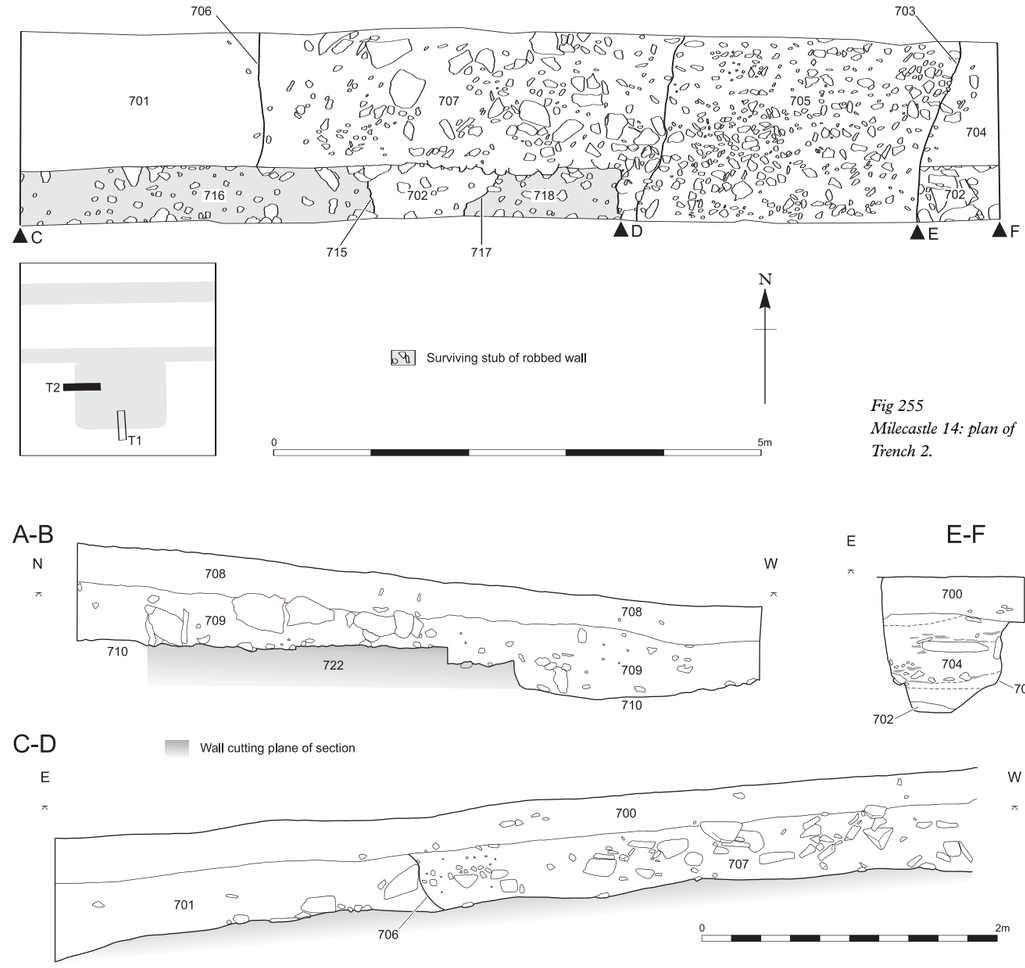


Fig 255 Milecastle 14: plan of Trench 2.

Fig 256 Milecastle 14: sections A–B (a), C–D (b) and E–F (c).

Finds

by P Austen, N Hembrey and J Weinstock

Mc14 yielded few finds (Hembrey 2003): a number of nails of uncertain date, one fragment of animal bone (Weinstock 2001), three pieces of tile and an undiagnostic, but worked, flint flake. The latter is of note, as flint is not naturally occurring in this area. Three sherds of Roman pottery from the plough soil (701, 708) included two undiagnostic body sherds and a rim fragment of a flanged mortarium in oxidised fabric (Austen 2006).

Interpretation

The position of the south wall of the milecastle confirms Stevens' observation that the milecastle was of short-axis type. Unfortunately, extensive robbing makes judgements as to original wall widths difficult, as the robbing was not done in a tidy fashion and the widths of the robber trenches do not exactly preserve the widths of the walls. However, the fact that the robber trenches for the south and west walls were 3.52m broad confirms Stevens' observation that the walls were broad, probably as broad as the broad curtain wall as is the case at Mc9 and Mc10. This is an important observation in the context of recent work by Symonds (2005), as Mc14 joins the small group of milecastles built to Broad Wall standard throughout. Like Symond's groups of such milecastles (p 139), Mc14 stands alone in this respect. The closest milecastles on either side where wall widths are known are Mc13 (Rudchester Burn), where the east and west walls are 2.33m wide, and

Mc17 (Welton), where south, east and west walls measure 2.41m wide. Both are Narrow Gauge milecastles with a broad north wall. This can now be readily explained in terms of Symonds' idea that milecastles were completed to Broad Wall gauge early in the construction process in order to provide garrisons at points of topographic weakness on the line of the Wall, particularly valley crossings. The March Burn, which lies below the site of Mc14 to the immediate west, is set in quite a deep valley, and could afford cover to penetration form the north.

Internally there was at least one building, which lay on the west side of the milecastle. This was up to 4.4m wide (external measurements) with walls up to 1.2m thick. The building lay approximately 1.2m east of the western wall of the milecastle, and its internal surface seems to have comprised crushed rubble and sand. The milecastle has been completely robbed, with all facing stones of the outer walls and internal buildings removed, probably to build the group of buildings to the west around the former 'Iron Sign' public house. The visible platform of the milecastle would doubtless have been a lure to stone-robbers.

The fragment of wall constructed above the robber trench fills demonstrates that the robbing pre-dated the re-use of the milecastle platform for a later building, possibly a post-medieval field barn. This building had probably disappeared by the 19th century, as otherwise one might expect MacLauchlan or Bruce to have mentioned it.

Milecastle 17 (Welton): 1999

The site

The site of the milecastle (NZ 0630 6823) appears as a very clear and distinct terrace platform on the sloping ground 200m west of the crossroads adjacent to Whittledene reservoirs (Fig 257). It was identified on the ground by Horsley (1732, 114) and also by Bruce (1867, 131) and MacLauchlan (1858, 19). The only previous work on the site was supervised by Hepple and reported by Birley *et al* (1932, 256–8). Hepple's work was restricted to the northern part of Mc17, which lies beneath the B6318 Military Road. Up to three courses of the north wall and north gate survived up to 800mm high. The gate was of Type I (Fig 258), having two pairs of gate responds: "The west half of the gateway was comparatively well preserved; the pivot hole on this side still retained its metal lining, which has been removed, and is now deposited in the Black Gate Museum" (ibid, 26).

Published photographs (Fig 259) show a single course of the gate piers and responds, constructed in large masonry with diagonal broaching on the faces of the stones, which had very well marked setting-out lines on their upper surfaces.

It was established that this was a short-axis milecastle, measuring 17.68m east–west by 14.93m north–south internally. The north wall of the milecastle was 3.30m wide, and the side walls 2.41m thick.

The evaluation

Two trenches were excavated. Trench 1 (6m ?◊ 2m) was intended to transect the south wall towards the south-west corner of the milecastle. Trench 2 (8m ?◊ 2m) was to sample the west wall and the western side of the interior. The trenches were excavated to the top of surviving stratigraphy, which was cleaned and recorded. Discrete cut features were sampled by half-sectioning, and two small sondages were excavated within Trench 2 in order to solve a specific stratigraphic question.

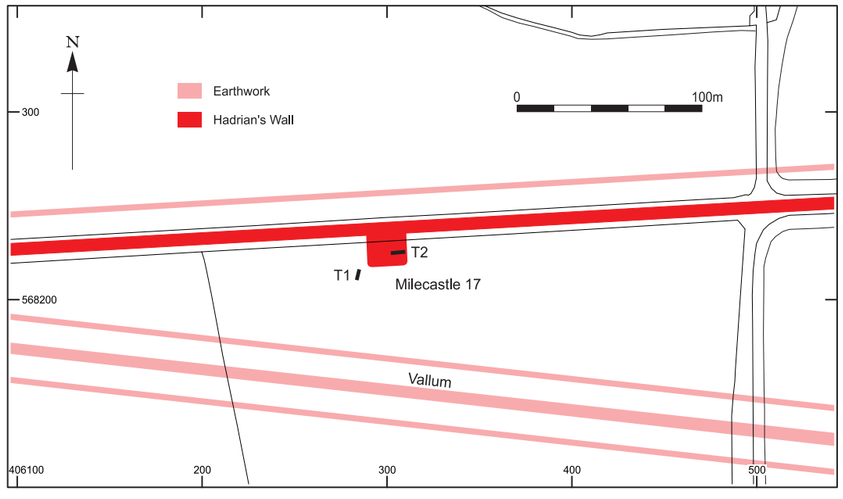


Fig 257
Milecastle 17: Mc17 and excavation trenches shown against modern mapping.

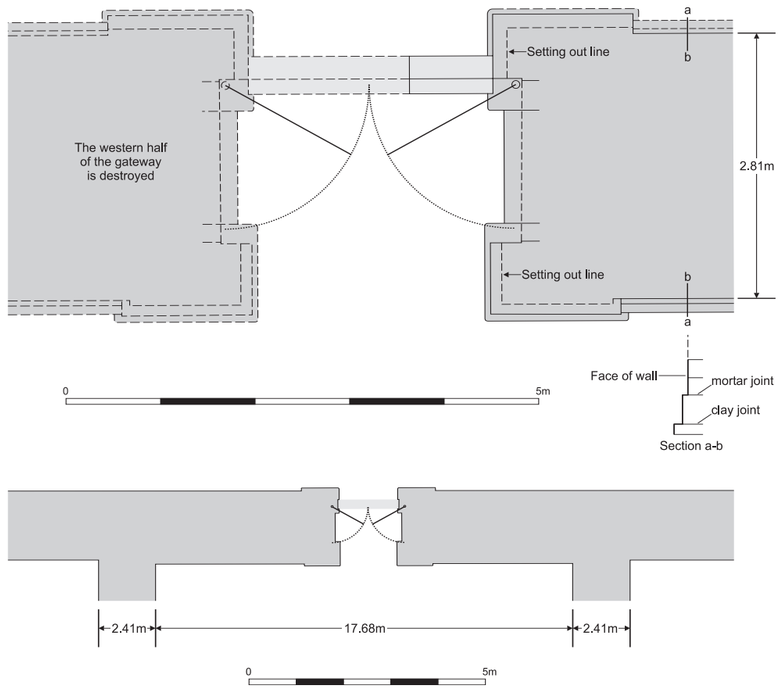


Fig 258
Milecastle 17: plan of north gate excavated in 1931 (Birley et al 1932).

Trench 1 (Fig 260)

The earliest feature in Trench 1 was a linear gully (109; fill 110), U-shaped in section 410mm wide and 520mm deep, running NE–SW. The fill of the gully was cut by a pit (111; fill 112) the full dimensions of which were not defined, but which was 590mm deep. The pit contained a single body sherd of BB1, and was therefore probably Roman in date. Both features were cut into the natural clay. Above them lay a spread of stone (108) comprising 75% glacial dolerite boulders and 25% limestone slabs (113). The limestone slabs may have been worked, but there were no clear traces of this, and it is perhaps more likely that they were split from thinly bedded natural outcrops, though whether by human or natural agency was not apparent. The stones were sealed by a 290mm thick deposit of subsoil (103), and 260mm of plough soil (101), giving a total depth of overburden of 0.55m.

Trench 2 (Fig 261)

In Trench 2 the plough soil (102) was 160mm in depth. This overlay a spread of angular sandstone rubble (104) which contained Roman pottery, and a damaged jet finger ring. The principal concentration of this material was towards the eastern end of the trench. The rubble spread either incorporated or was overlain by a very fragmentary, unbonded wall 560mm in width constructed of coursed squared rubble (107).

To the west of the trench a small patch of compacted charcoal flecked clay silt (106), 50mm deep overlay a widespread deposit of very dark grey-brown clay silt containing charcoal flecks and stone fragments (105). A sondage across the junction of

Fig 259
Milecastle 17: photograph of north gate excavated in 1931 (Birley et al 1932).

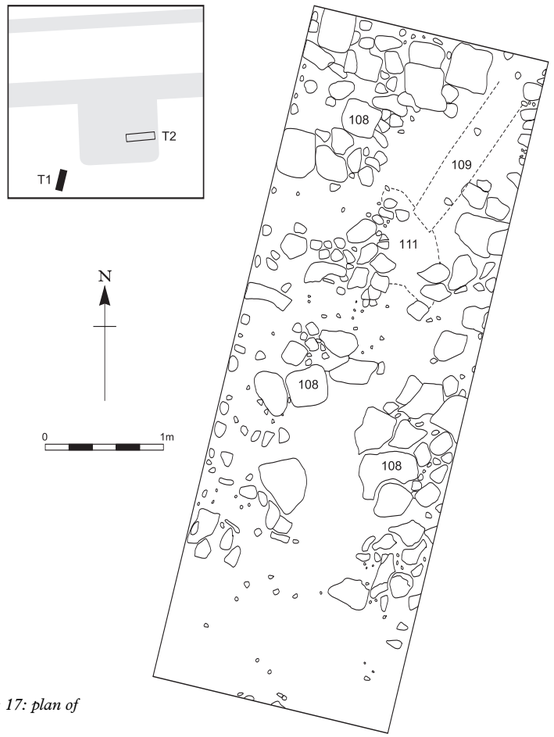


Fig 260
Milecastle 17: plan of Trench 1.

this deposit with the rubble spread (104) demonstrated that (105) underlay (104). The same sondage, together with a second small sondage in the south-west corner of the trench demonstrated that there was a substantial depth of stratigraphy surviving within the trench: (105) was 140mm deep to the east and 98mm deep to the west. It sealed a dark grey-brown silt (114), 180mm deep to the east and 224mm to the west. This material stepped downwards to the east, and itself sealed a deposit of black-brown clay silt (115), at least 130mm deep.

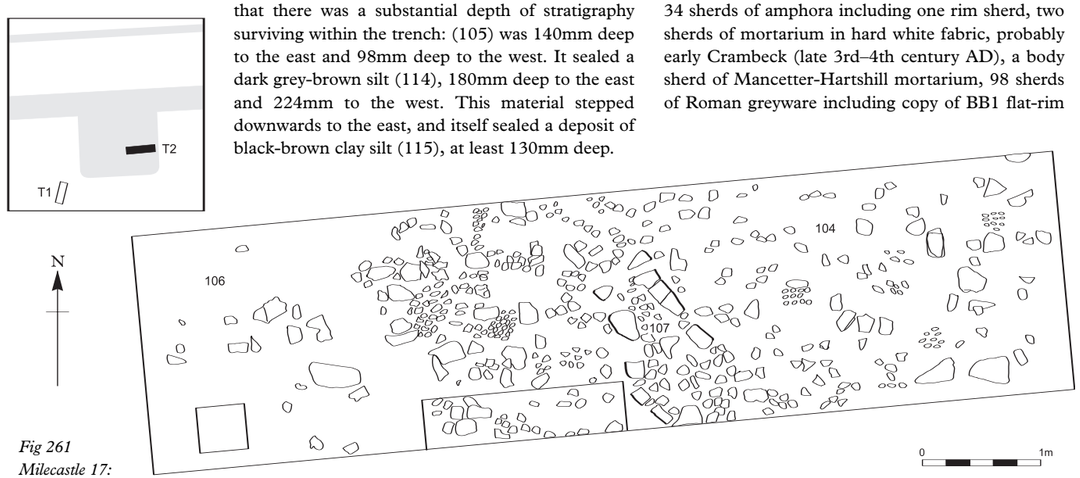


Fig 261
Milecastle 17: plan of Trench 2.

Finds

by P Austen, N Hembrey and J Weinstock

This site yielded a comparatively large assemblage of finds (Hembrey 2003), including coal, slag, tile fragments, and fired clay. There was a small quantity of modern material, principally undiagnostic nails and iron objects, including a horseshoe fragment, clay pipe and glass. Roman small finds were:

1. 9970152, context 102, plough soil (Fig 262)

Large, thick, plain jet finger ring, incomplete. Flat on both sides and square in section, the ring has an integral, rectangular, central bezel. Striations on all surfaces, rather than a highly polished finish, indicate it to be unfinished. External diam *c* 30mm, internal diam *c* 25mm

The ring (cf Allason-Jones 1996, 37, no. 166) is probably fabricated from Whitby jet. It is notable also for being unfinished (Lindsay Allason-Jones, pers comm); most finger rings left their source nearly complete, and were then finished – highly polished with oil mixed with jet dust – at the point of sale. Objects in such condition have been found at York, and at South Shields. As it is very unlikely that Mc17 was part of this industry, the most probable explanation is that this was a 'reject' picked up elsewhere. It is of a fairly common type, dated broadly to the 3rd century, and worn by both men and women.

2. 9970151, context 101, plough soil

Ceramic spindlewhorl, fabricated from a samian vessel, although no glaze survives, circular, and with a central perforation. Complete and fairly regular in shape, both edges and faces are fairly abraded. Max diam 29mm; thickness 6mm

Most of the pottery (Austen 2006) was from plough soil (101, 102). Roman pottery comprised 34 sherds of amphora including one rim sherd, two sherds of mortarium in hard white fabric, probably early Crambeck (late 3rd–4th century AD), a body sherd of Mancetter-Hartshill mortarium, 98 sherds of Roman greyware including copy of BB1 flat-rim

bowl with burnished lattice decoration (2nd century) and a flanged dish or bowl (late 3rd to 4th century), 25 sherds of BB1 including an early 3rd century cooking pot rim fragment with a fairly everted rim, and five very abraded sherds of plain Central Gaulish samian. A single BB1 body sherd came from the early pit in Trench 1 (112), and the rubble spread and underlying soil in Trench 2 (104, 105) produced an amphora body sherd, single rim sherds of BB1 and BB2, two greyware rim sherds and a burnt rim of a Central Gaulish samian bowl.

Eighteen fragments of animal bone were collected. All were cattle bone, although which if any was of Roman date cannot be determined.

Interpretation

It seems clear that Trench 1 lay outside the walls of the milecastle. The presence of a single Roman sherd in one of the cut features suggests that there was some form of contemporary extramural activity. The rubble stones which overlay these features may have been collapsed debris from the milecastle walls.

In Trench 2, the archaeological deposits encountered appeared to be predominantly post-Roman. This was confirmed by the wall footing (107) found overlying the rubble spread, which lay directly beneath the plough soil. The wall was oriented diagonally to the layout of the milecastle and could not, therefore, have been part of a Roman internal building. It is interpreted as a medieval or post-medieval structure built either within or over the top of the milecastle. This building had certainly disappeared by the mid-19th century, or it would have been noted by MacLauchlan or Bruce.

The deposits associated with this late building overlay at least 450mm of stratigraphy. This was clearly deposited from west to east, or downhill, and it is probable that much of it comprises colluviation or hill-wash from up-slope to the west. The platform interpreted as the site of the milecastle is considerably bigger than the attested size of the short-axis milecastle itself, and it is possible that this natural deposition of material over the top and sides of the platform has served to enlarge it over time, at the same time burying the remains of the milecastle more deeply prior to the construction of the later building. The concentration of Roman material within the plough soil on the eastern lip of the platform might indicate that some internal deposits of the milecastle have been disturbed by ploughing at this point in the past.

Milecastle 19 (Matfen Piers): 1999

The site

The low platform that marks the site of Mc19 (NZ 0335 6854), 150m east of Matfen Piers (Figs 251, 263) was noted by both Bruce (1867, 131) and MacLauchlan (1858, 19). The site lies partly under the hedge bank on the south side of the B6318 Military Road where it is indicated by a substantial rise in the hedge, but most of the milecastle lies in the field to the south, which is regularly cultivated for cereal crops. The rise in the hedge bank indicates precisely the position of the milecastle and surviving remains are likely to be well preserved within this narrow strip. Masonry which projects from the south side of the hedge bank was cleaned as part of the present evaluation, and seems to consist of general rubble making up the road. Wall faces are not readily discernible, but may be masked by tumble.

Trenching took place here in 1931 (Birley *et al* 1932), 1932 (Birley *et al* 1933), and 1935 (Simpson *et al* 1936b) The excavations showed that this was a long-axis milecastle measuring 16.25m east–west by 17.2m north–south internally. The north wall of the milecastle had been removed in its entirety before 1932, though a small fragment of footing on either side of the gate passage was found. A small hearth close to the south end of the west side of the passage implied to the excavators that the gate had been partially blocked in the Roman period. The excavators recorded that virtually nothing was left of the side walls or the south gate, though it is clear from a photograph (Simpson *et al* 1936b, fig 1; Fig 264) that the footings and part of the west passage wall survived on the southern edge of the platform upon which the milecastle stood. The pattern of footings suggested that this milecastle had Type III gates (Birley 1961, 99), with an elongated passage and two sets of responds. The south wall measured 2.38m in width, suggesting that this was a Narrow Wall milecastle.

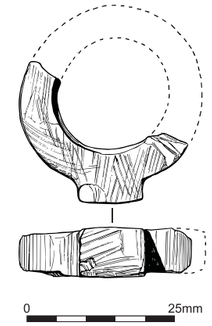


Fig 262
Milecastle 17: shale finger ring.

Fig 263
Milecastle 19: Mc19 and excavation trenches shown against modern mapping.

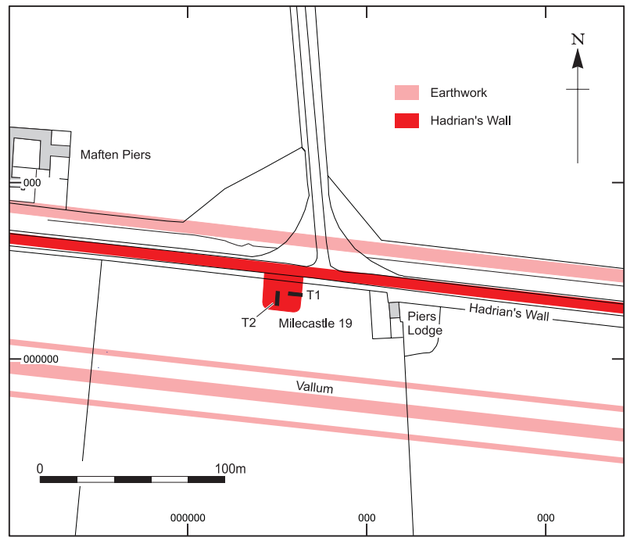


Fig 264
Milecastle 19: photograph of south gate excavated in 1935 (Simpson et al *1936b).*

In 1931 an altar (RIB 1421) was found to the south of the milecastle in the environs of the south gate. The inscription on this altar read: *Matrib(us) templ(um) cum ara vex(illatio) coh(ortis) I Vard(ullorum) instante P(ublio) Dom(itio) V(...) V(otum) s(oluit) l(ibens) m(erito)* (To the mothers, a vexillation of the first cohort of Vardullians under Publius Domitius V(?ictor) has erected a temple with an altar in willing payment of a vow).

Birley (1932) pointed out that this might mean either that a shrine to the *Matres* had been constructed outside the milecastle, or that the milecastle had been converted to this use, in the same way that *Wachtturm* 37B on the Odenwald *Limes* was turned over to religious use. Breeze (2002, 60; 2003) has since shown that the presence of altars, and even tombstones, in the vicinity of milecastles is not uncommon, occurring on at least 13 sites, and suggests that such altars could have been erected by the occupants of milecastles that might, at different times, have included legionaries or auxilliaries. This informs the question of the way in which milecastles were garrisoned. Birley argued that a separate force to the units based in the forts of the Wall provided the garrisons for the interval structures. This argument was based upon the discovery of the altar at Mc19, and has been accepted by some scholars (Daniels 1978, 26), though whether the troops so deployed were auxiliaries or *numeri* (Birley 1961, 270–1) remains uncertain. This issue has recently been revisited by Breeze (2002) in his reconsideration of the tombstone of the Pannonian Dagvala from Mc42 (Cawfields) and more generally (Breeze 2003a).

Nothing has hitherto been recorded of the internal arrangements of the milecastle although records exist to the effect that a wall of an internal building was being revealed by ploughing in the 1980s.

The evaluation

Two trenches were excavated. Trench 1 (8m × 2m) crossed the east wall and the eastern side of the interior. Trench 2 (also 8m × 2m) was designed to transect the south wall of the milecastle west of the centre.

Trench 1 (Fig 265)
The substratum on which the milecastle was constructed comprised material that appeared to be an outcrop of degraded sandstone (206; 214). Whether this was a natural deposit or a built platform was not established. The highly truncated remains of the milecastle lay immediately beneath the plough soil. The most substantial part of this was a fragmentary north–south stone wall (207),

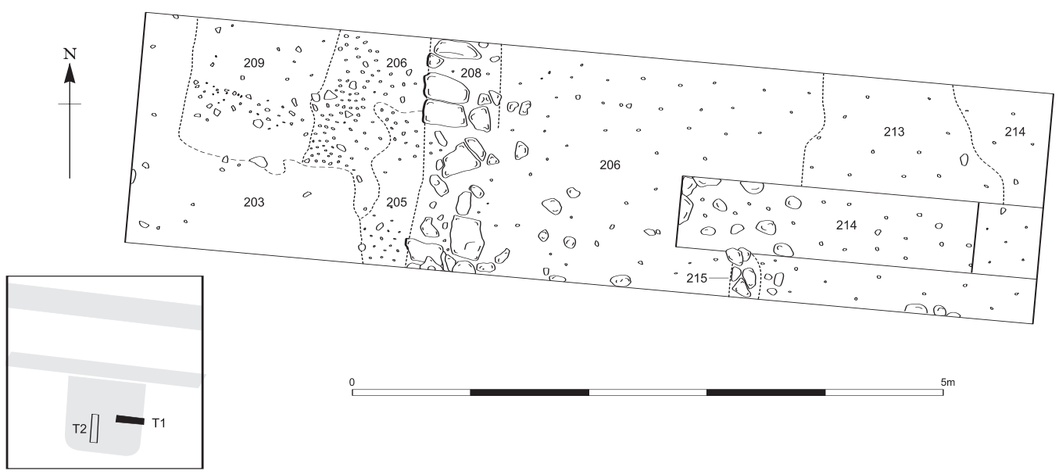


Fig 265
Milecastle 19: plan of Trench 1.

Fig 266
Milecastle 19: Trench 1 from south showing floor surfaces and wall of internal building.

560mm in width, built of sandstone coursed rubble within a construction cut of a similar width to the wall itself (208). The wall had two faces, and was packed with rubble. The vestiges of clay bonding survived, most visibly in an orange sandy clay layer (205) that lay to the immediate west of the wall, and that appeared to comprise a spread of bonding material resulting either from trampling during robbing or from ploughing. On the western side of the wall lay a sandy clay deposit (209) that appeared to be either an early floor or a levelling deposit for a level, compact, purple-grey sandy clay layer (203), which was certainly an interior earthen floor that respected the wall (Fig 266). 1.68m to the east of the wall was the very last vestige of the eastern milecastle wall, which was 2.4m wide. All that survived was the base of a foundation trench cut into the underlying sandstone. At the eastern and western sides the trench was deeper (216; 217), although it was only 180mm at the deepest point. These deeper strips represented the original lines of the facing stones of the exterior wall. No facing stones survived, indicating that the wall had been totally robbed. The fill (213) of this feature must therefore represent the ploughed out, vestigial fill of a robber trench.

The ploughsoil (201) was 250mm deep, and contained 20% medium-to-large and 10% small angular sandstone pieces derived from the buried milecastle.

Trench 2 (Fig 267)
The plough soil in Trench 2 was 200mm deep, and directly overlay a deposit of small, undressed, sandstone fragments, which was surfaced with smaller material to the south side of the trench (212) (Fig 268). This surface merged into larger stones at the north end of the trench. At the north edge a shallow cut was noted (218), filled with material (219) similar to the topsoil.

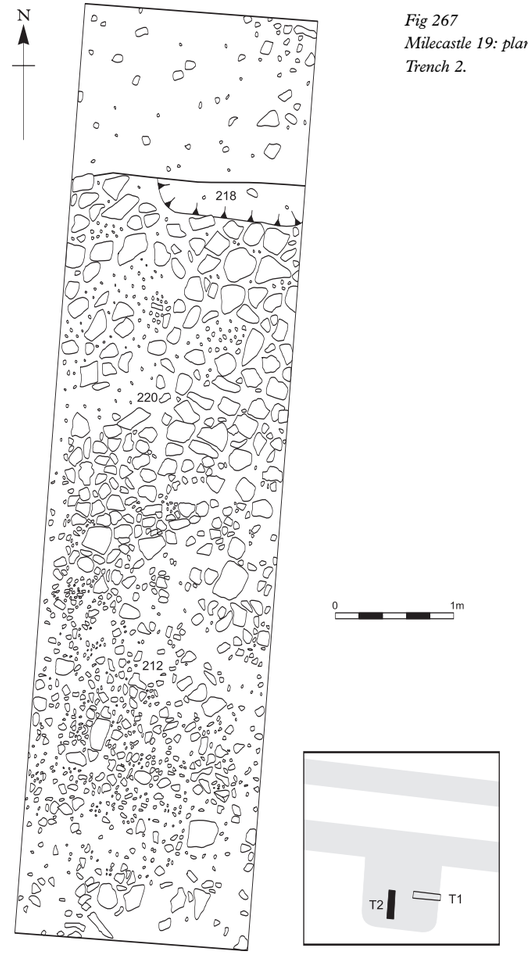


Fig 267
Milecastle 19: plan of Trench 2.

Fig 268
Milecastle 19: rubble surface in Trench 2.

Finds

by P Austen, N Hembrey, and D Shotter

Mc19 yielded a small assemblage of ironwork, mostly from the plough soil, and of uncertain date. All glass was modern and there was a single fragment of animal bone (Hembrey 2003). The only noteworthy Roman find was a single coin.

1. SF 9970 260, context 212

Coin: *AE Sestertius*, Hadrian, AD 125–38; diam 26mm, thickness 4mm (RIC 970)

All of the pottery (Austen 2006) was from the plough soil. Although there was some post-Roman material, most of the pottery was Roman material deriving from the ploughed deposits of the milecastle. The pottery was basically 2nd–3rd century in date, and it is possible that this is because later material has already been ploughed out and lost. Roman pottery comprised: eight abraded sherds of Central Gaulish samian, 14 sherds of BB2 including rims of a rounded rim bowl or dish (late 2nd–early 3rd century), and abraded mortarium flange fragment and a single fragment of BB1, eight amphora sherds, 46 of undiagnostic greyware and 16 of undiagnostic oxidized wares.

Interpretation

The eastern wall of the milecastle conformed very closely to the previously measured width of the south wall, and confirms the identification of Mc19 as a Narrow Wall milecastle (Symonds 2005). The smaller, internal wall (207) was clearly the eastern wall of a building in the eastern half of the milecastle with internal floor surfacing on its western side. The surfaces in Trench 2 are less readily interpreted, but are possibly best regarded as comprising hard surfacing in a western half of the milecastle, which was devoid of structures. During the excavation it was thought to be the central road of the milecastle, but this cannot be the case if the 1930s record of the dimensions and orientation of the milecastle are correct.

Milecastle 62 (Walby East): 1999

The site

The area between Walby and Brunstock Park, broadly conforming to Wall Miles 62 and 63 (Figs 269–70, 274) have been the subject of a small number of archaeological interventions over the last 100 years. Antiquarian reference to this somewhat featureless part of the line (which even the enthusiastic James Coates did not illustrate) is limited to the survey by MacLauchlan (1858, 72). It was MacLauchlan who first suggested the location of Mc62 at the point where the east–west road known as Birky Lane describes a dog-leg, bending sharply northwards, and almost immediately westwards again (NY 4429 6051) around a field 300m east of Walby Grange. He argued this as follows: "almost 600 yds before we reach Walby there are very faint traces of a Mile Castle, being 7 furlongs from the last; they are where the road turns sharply to the north. Mr Bell concurs, but the traces are by no means conclusive".

So inconclusive were they that MacLauchlan did not mark the position of the postulated milecastle on his survey plan. In 1899 the bend in Birky Lane at MacLauchlan's projected milecastle site caused speculation as to whether the line of the road skirted the north-east angle of a projecting fort here. This was tested by Haverfield (1900, 97), who trenched the field to the south of the lane, found the Wall and ditch running straight across it, but encountered no sign of a fort or of the milecastle.

The field is currently under pasture but is ploughed in rotation for pasture renewal at regular intervals, and this ploughing was the reason for the inclusion of the site in the Milecastles Project. In 1981 geophysical survey was carried out by John Gater (1981). Ten traverses confirmed the line of the Wall and ditch, although the weakness of the response suggested that the Wall had been badly robbed towards the west side of the field. It was concluded that a strong linear anomaly parallel to and behind the Wall at the expected position for the milecastle might represent its south wall. The line of the Wall ditch survives as a clearly visible, and very wet, indentation in the north-east corner of the field.

The evaluation

The location of the excavation trenches was guided by the geophysical survey. In the absence of clear targets to explore, initially a pattern of four 1m square test pits were excavated in an attempt to locate the milecastle. These demonstrated that there were surviving structural features, and a further six test pits were dug to confirm aspects of plan and

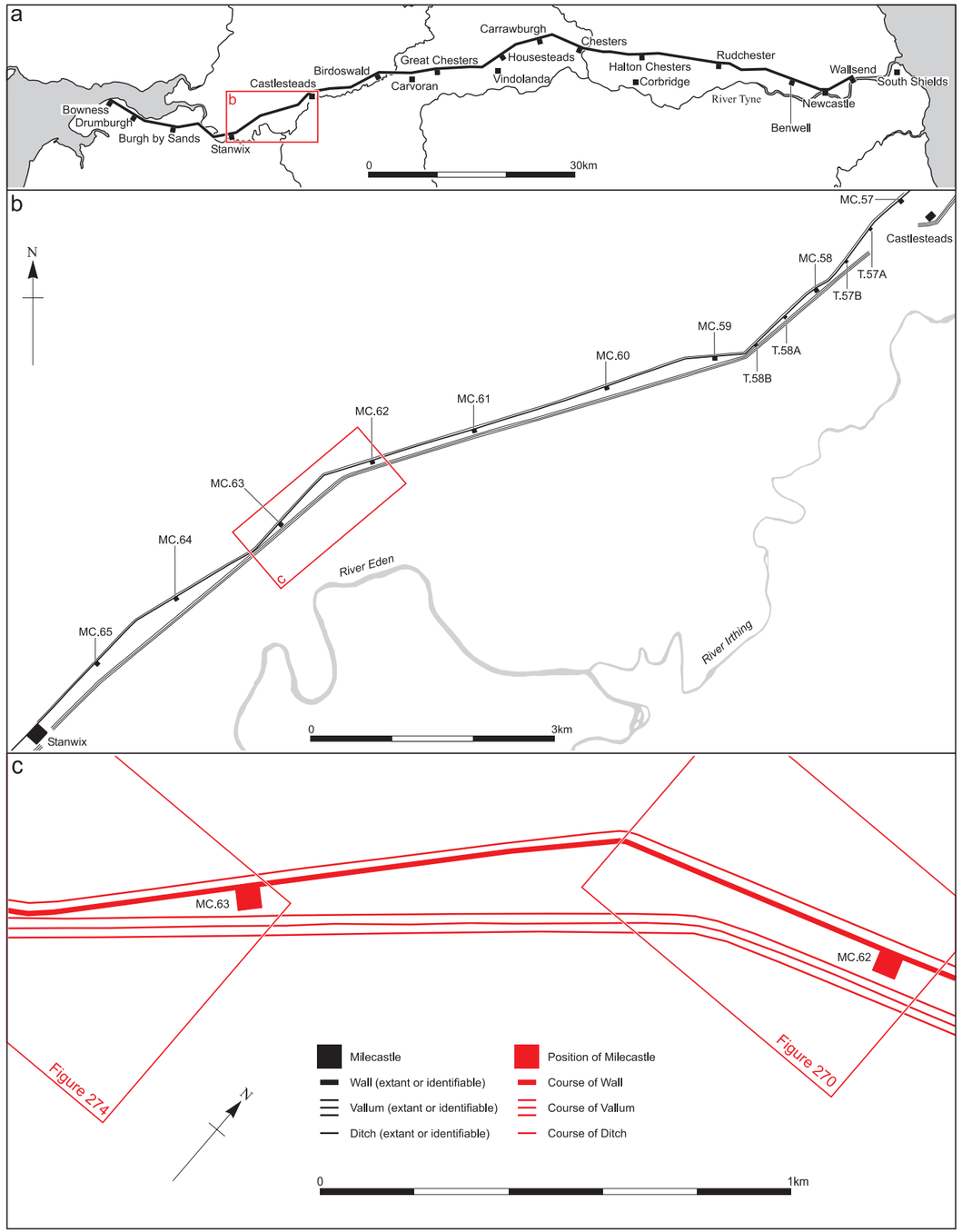
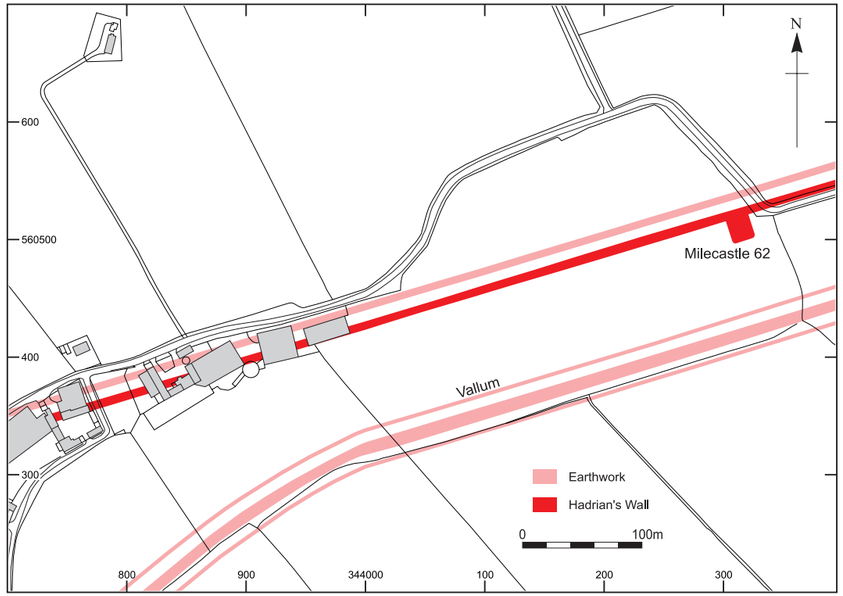


Fig 269 (opposite)
Milecastle 62: location of Wall miles 62 and 63 on Hadrian's Wall, and of Figs 270 and 274.

Fig 270
Milecastle 62: Mc62 site and test pits against modern mapping.



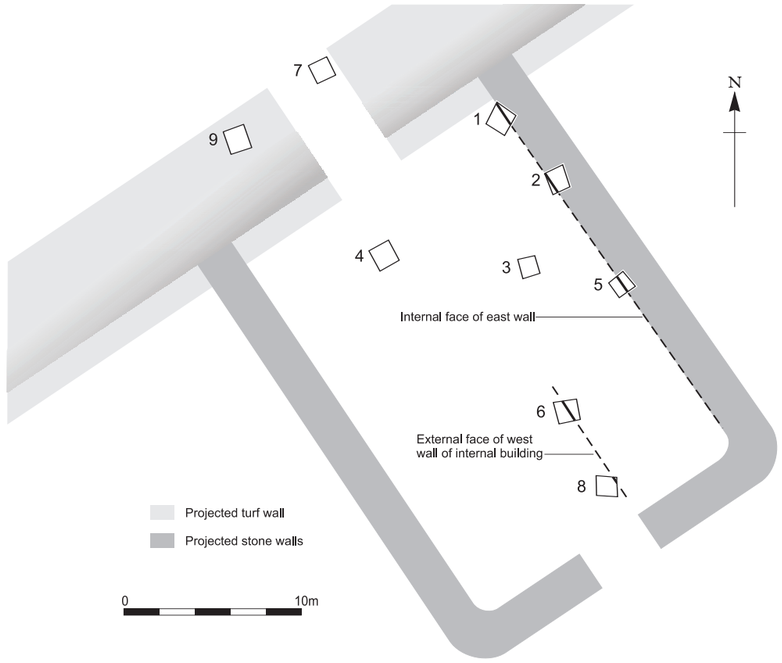
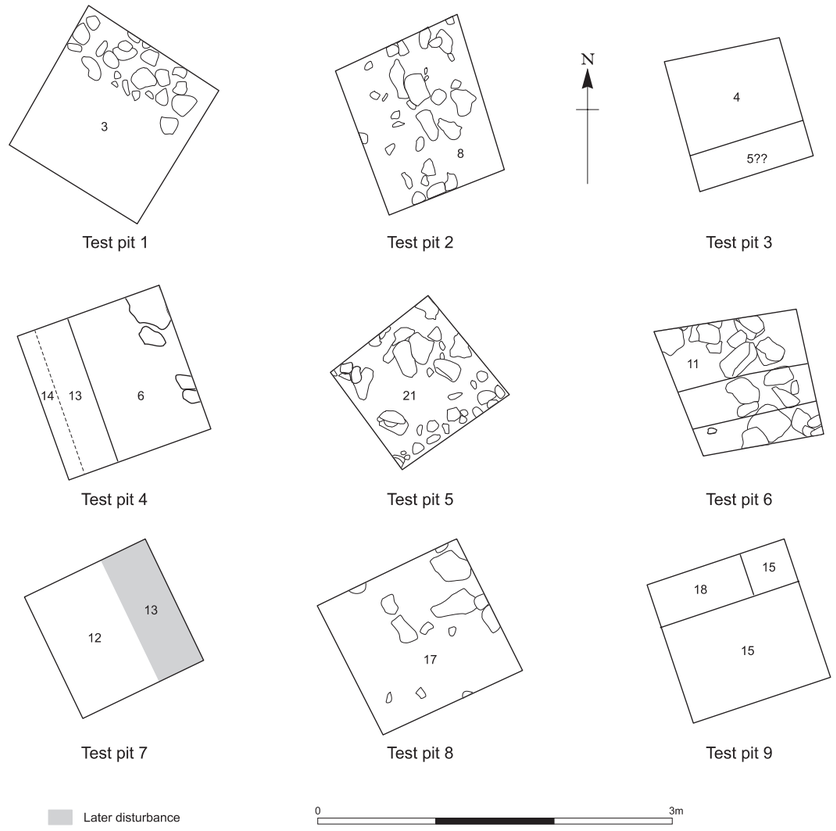


Fig 271
Milecastle 62: test pit locations and tentative interpretation.

Fig 272
Milecastle 62: test pit plans.



layout (Fig 271). In all test pits the plough soil (001) varied in depth from 250mm to 350mm.

Test pits 1, 2, and 5 (Fig 272) lay in a north–south line along a line that appeared as a rather insubstantial anomaly in the geophysics. All three pits produced similar stratigraphy. Test Pit 1 showed the western edge of a feature (002) comprising sub-angular broken sandstone fragments and rounded pebbles. This overlay a deposit of mottled mid brown-black sandy silt (003). In Test Pit 2 a similar deposit of stone (007) lay over a deposit of orange-grey mottled sandy silt (008), and in Test Pit 5 again a stone layer (009) lay over a deposit of light grey-brown sandy silt (021).

Test Pits 9 and 7 (Fig 272) were positioned on the presumed line of the Wall, located with reference to the site of the Wall ditch. Beneath the plough soil in Test Pit 9 was a deposit 50mm deep of grey-black humic clay-silt (017), which overlay a yellow-white silty sand (018) 150mm deep. This lay directly on the solid, natural yellow-orange silty clay substrate (019). In Test Pit 7 the natural clay (020) was overlain by a hard, compacted surface of small stone and pebbles 120mm deep (012), which was cut by a post-medieval field drain (013).

In Test Pit 6, a narrow wall foundation (010) running north–south was identified (Fig 273). This survived to a depth of 124mm and was 420mm wide, constructed with cobbles and some angular stones. The foundation was cut into a deposit of grey-brown silty clay with charcoal flecks (011).

Fig 273
Milecastle 62: wall footing in test pit 1.

The foundation was parallel in alignment with the edge of the stone spread noted in Test Pit 1. To the south of Test Pit 6, Test Pit 8 showed a diffuse cobble spread, interrupted by plough marks (016) over a deposit very similar to 011 (017).

Test Pit 4 was unproductive, showing a deposit of mid-brown sandy clay (006) 280mm overlying natural clay (014). This was cut by a post-medieval field drain (013).

Test Pit 3 revealed a dark grey-brown sandy silt 180mm deep (004) over the natural clay (005).

Finds

by P Austen and N Hembrey

All non-pottery finds were modern in date (Hembrey 2003), and only three undiagnostic Roman sherds were recovered (Austen 2006).

Interpretation

These nine test pits are the only interventions ever to have been undertaken on Mc62. The results may cautiously and tentatively be interpreted in terms of other Turf Wall milecastle plans and structural methods. Test Pit 9 was cut in order to explore the line of Hadrian's Wall. It is possible that the deposits above the natural subsoil represent the laid turf of the Turf Wall. If so, it is clear that the Wall in this area does not have the kind of cobble footings excavated at Burgh-by-Sands and at Mc72 (Fauld Farm) (Austen 1994), but more importantly, it would suggest that the Turf Wall was built on a cleared ground surface, when the normal pattern would be the laying of turf on top of growing vegetation. This has been found to be the case wherever the Turf Wall has been sectioned, including the excavation at Crosby on Eden, only 250m to the east of the milecastle site (p 124) and at Appletree (p 110). It is perhaps more likely that the material above the natural clay comprises an *in situ* ancient subsoil, and that the turf line above it is the natural pre-Turf Wall turf line, possibly combined with an element of the bottom inverted turf of the structure. The pebble surface in Test Pit 7 lay directly over the natural clay, implying that the original ground surface and turf had been cleared at this point. As this trench is on the line of the Wall, this may represent a break in the Wall which could then only be the north gate of the milecastle. It seems likely that this material represents surfacing within the gate, possibly relating to the Turf Wall period.

The cobble and stone spreads in Test Pits 1, 2 and 5 may be interpreted as the foundations of the east wall of the stone phase of the milecastle. If so they are not primary, as there are substantial deposits of sandy silt beneath them. These deposits were of a variety of colours, mottled and somewhat disturbed. It seems reasonable tentatively to conclude that these sandy silt deposits might represent the disturbed remnants of the walls of the primary turf and timber milecastle. The interpretation of the stone spreads in Test Pits 1, 2 and 5 as footings for the exterior walls of the stone phase milecastle is strengthened by the fact that the only definite stone foundation to be found during the evaluation lay parallel to the edge of these spreads as defined in Test Pit 1. This was the foundation in Test Pit 6. The foundation lay 5.25m to the west of the supposed inner edge of the wall of the stone phase milecastle, and this may suggest that this was the western wall of a building that occupied the east side of the milecastle. Test Pits 3 and 4 were inside the milecastle, contained surfaces, but were otherwise undiagnostic. It is at least possible that the cobble spread in Test Pit 8, which resembled those in Pits 1, 2 and 5, might have been the foundation of the south wall, and the soil deposits recorded beneath structures in both Pits 6 and 8 may represent the demolition of the Turf Wall milecastle.

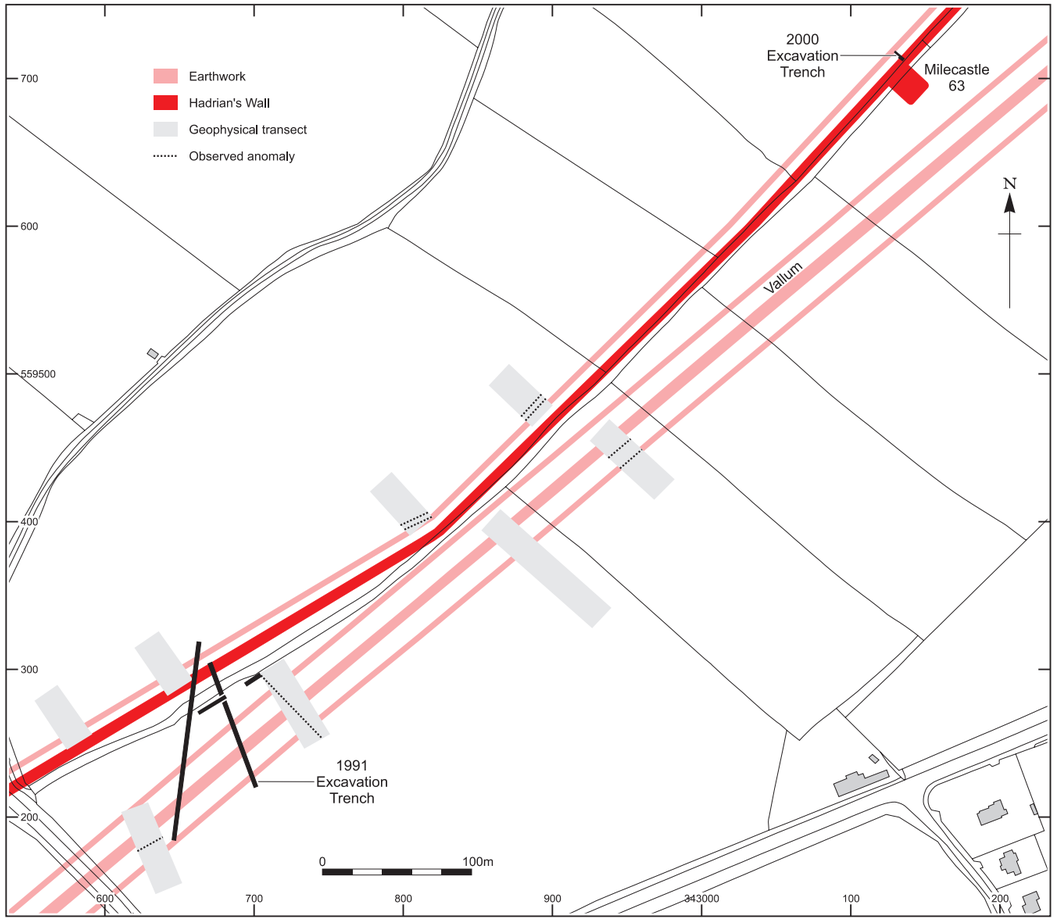
The evaluative nature of the excavation makes it impossible to extrapolate the plan and dimensions of the milecastle from the evidence recovered with any level of certainty. The only available evidence is the apparent position of the north gate, east stone wall, and internal building wall.

It is possible to reach some estimate of the internal width of the structure, however. In order to do this it is necessary to assume that the inner edge of the eastern exterior wall foundation coincided with the inner edge of the wall itself, and that the internal building wall represents the western wall of a structure. This gives a breadth from the interior wall face to the west frontage of the building of 5.6m. In most milecastles where buildings have been excavated, these buildings are not aligned on the gate portals, but set back somewhat to the line of the rear of the imposts. The overall width of a typical milecastle gate over the imposts is 5.26m. Assuming symmetry of layout, the internal width east–west of the milecastle would be in the region of 16.55m, and given walls of around 2.42m in width, the external width would be 21.39m. It is not possible to calculate the length north–south, although it is probably in the region of 23–26m, and the milecastle would thus be of long-axis type. This is comparable with other milecastles in the Turf Wall sector; the external measurement for Mc64 was 17.94m north–south and 21.42m east–west for a short axis milecastle. Mc72 in its stone phase measured 24.3m east–west externally, and Mc79 was 24.14m square externally. Mc78 measures some 20m east–west and 24m north–south.

Milecastle 63 (Walby West): 2000

The site

After describing the bend in the Wall as it passes through Walby at his projected location for Mc62, MacLauchlan (1858, 72) is silent on the possible location of Mc63 until the next major bend is



reached slightly west of Wallfoot. He suggested a milecastle here on the grounds of the existence of the bend alone: "Immediately on the north of the farm called Wall Foot another bend takes place, and at this bend we fancy traces may be discovered of a milecastle bearing north-west by west from the farmhouse."

Haverfield (1895, 457) also examined the Wall and Vallum in Brunstock Park, between Mc63 and Mc64, and Mc64 (Drawdykes) itself was identified and excavated in 1962 (Caruana and Fane Gladwyn 1980). 1990 saw the examination of the area to the east of Brunstock Park by geophysical survey and small scale excavation as part of an evaluation to find the least archaeologically destructive route across the Roman frontier works for the line of the North-West Ethylene Pipeline. This was followed by an excavation on the route of the pipeline itself in 1991 (Lambert 1996, 79–86). Geophysical survey successfully located the Wall and Vallum ditches (Fig 274). The pipeline passed through part of the line where the Wall had been eradicated by quarrying on either side of a hollow way which ran to the south of the Wall. The Vallum ditch survived to a depth of some 2.3m.

The measured site of Mc63 lies at or near NY 4315 5974 (Fig 274). The field boundaries shown on OS mapping have altered in recent years. The milecastle was thought to be bisected by a track which runs along the south boundary of a field which is in rotational cultivation for maize. The site was tested by geophysical survey in 1980 (Gater 1981), work which tentatively identified elements of the milecastle within the northern field, somewhat to the east of the measured position of the milecastle, and guided the 2000 evaluation.

Fig 274
Recent archaeological interventions in Wall Mile 63.

The evaluation

Although no visible remains of either the milecastle or the Wall can usually be seen on the ground, the Wall ditch was clearly observed as a linear indentation centred some 15m north of the southern edge of the field to the north of the track. The ditch was very clearly visible as a result of the deep rutting, which had been caused by the passage of farm machinery while harvesting a maize crop in the waterlogged conditions of the abnormally wet autumn of 2000. This observation caused the results of the geophysical survey to be regarded with some circumspection, as it seemed possible that the milecastle did not extend into this field at all. It was therefore decided to cut a single trench measuring 2m × 8m, oriented north–south, with its southern edge as close as possible to the field boundary. The intention was to locate the line of the Wall itself, as this would inform the positioning of any trenches to the south of the Wall that might have picked up the east and west walls of the milecastle. The result from this trench clearly demonstrated the futility of further evaluation trenches within the area of potential threat to the north of the track.

Trench 1 (Figs 275–6)

The topsoil in the trench (1600) ranged from 250–500mm in depth, and consisted of a friable dark red-brown sandy loam. To the north of the trench this sealed a small area of sparse grey sandstone rubble 120mm deep (1601), comprising flat squared or irregular pieces. This is interpreted as collapse or robbing debris from the curtain wall of Hadrian's Wall, the foundations of which (1600) lay 3m to the south of the rubble. These foundations were 2.60m broad within the field, but only the north face was present; the south face seems to lie beneath the field boundary hedge, although the tails of the facing slabs were found in the south edge of the trench. The face comprised a single line of 140mm thick flagstones, tapered back into the wall core from faces ranging from 400–600mm broad. All of the facing stones revealed (a total of five) displayed an east–west linear crack some 240mm from the face. This represents the pressure point where the face of the curtain wall stood on the flag foundation, which was offset to the north. The weight of the Wall above, now completely robbed, had caused the flagstone course to crack along the line of the offset. All that remained of the core was a thick scatter of irregular grey sandstone pieces, up to 170mm wide. This was completely robbed in the south-east corner of the trench in a very square area, a fact which at first suggested that two walls at right angles were actually present. The wall sat upon a widespread subsoil deposit of very compact reddish-brown sandy silt (1603). A single undiagnostic Roman potsherd (Austen 2006) lay in the surface of this material immediately north of the Wall.

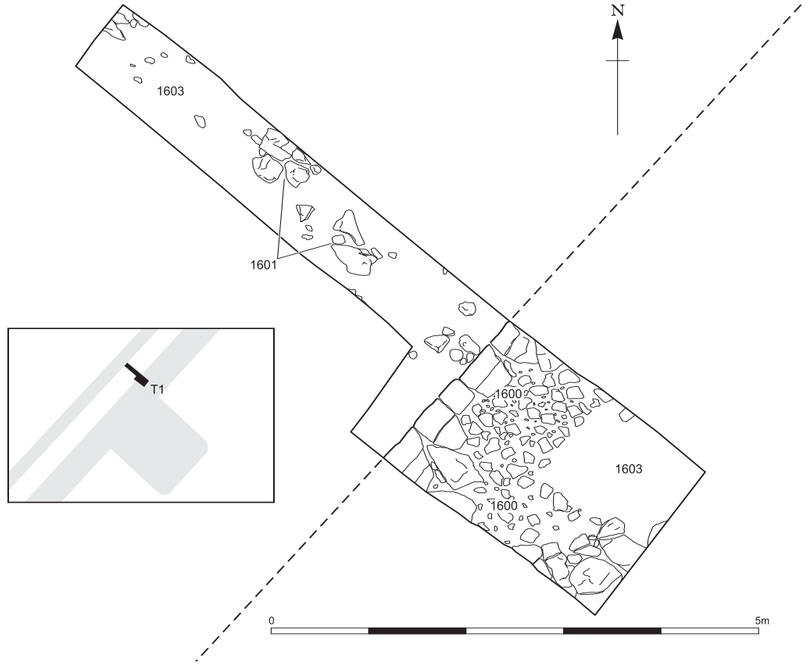


Fig 275
Milecastle 63: plan of trench.

Fig 276
Milecastle 63: flagstone foundation course of Hadrian's Wall in trench. Note the linear crack marking the offset of the north wall face with the flag foundation course.

Interpretation

It is clear that the broad east–west wall found in the trench was Hadrian's Wall. This is apparent from the structure and dimensions, and also from the crack along the foundation course, which is a virtual signature feature of the Stone Wall in the former Turf Wall sector (Caruana and Fane-Gladwyn 1980, 21; Hodgson and McKelvey 2006). It was surprising that no sign of the Turf Wall survived at all, as in Wall mile 61 considerable traces of turf work were present (Bennett this volume, p 124), and elements of turf work were also found on the site of Mc62 as reported above. The Wall exactly defines the south edge of the field, to such an extent that it seems likely that the track to the south is of considerable antiquity, and probably originated when the Wall was standing to some height.

The excavation firmly denied the results of the geophysical survey, and this requires explanation. The principal evidence for the side walls of the milecastle was the appearance of a pair of anomalies some 18–20m apart running southwards from the presumed wall line. Comparison with the excavated trench suggests that these anomalies simply represented parts of Hadrian's Wall which were unrobbed between areas of total robbing like that defined in the excavation trench. Mc63 clearly does not lie in the field which was evaluated, but under the track and the field immediately to the south.

Milecastle 69 (Sourmilk Bridge): 2000

The site

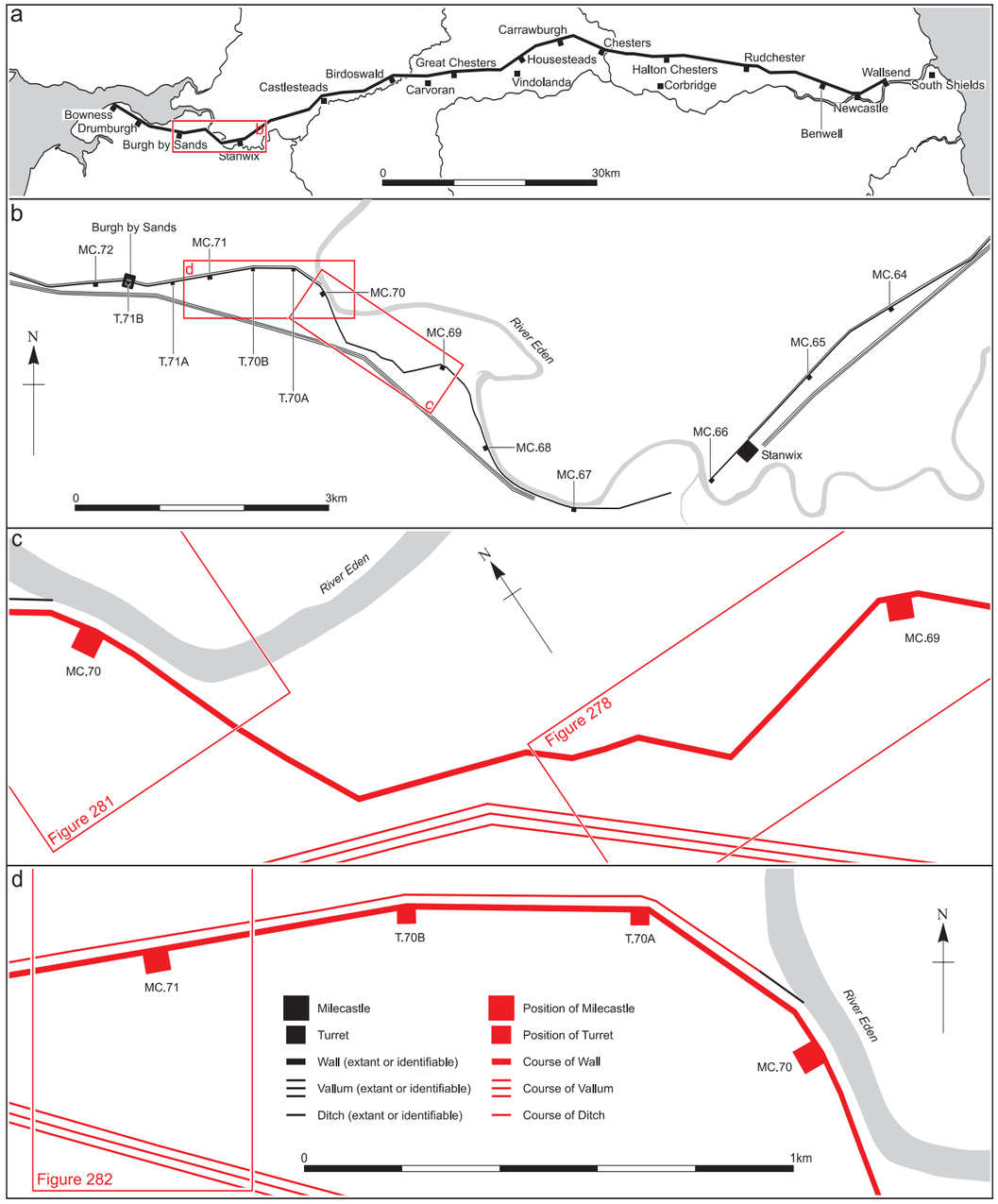
Wall miles 69–71 (Fig 271) lie in one of the least explored and most poorly preserved stretches of the frontier, and have tended to be somewhat glossed over by antiquarian observers. The best description is provided by Horsley (1733, 155–6), who found the works obscure all the way from Newtown to Burgh-by-Sands (Wall miles 67–71):

> "On the west side of the *Eden* the Walls are mostly obscure. At a part between *Grinsdale* on one side and *Newton* on the other, *Severus'* wall is very visible, and *Hadrian's* may be discovered about a furlong to the south of it. And a little to the east of *Kirkanders* the vestiges are clear. Between *Wormanby* and *Brugh* the track of the walls is also visible, and they come within a chain of each other. But excepting the ditch at the west end of *Brugh*, *Hadrian's vallum* appears no more after this with plainness and certainty. And *Severus'* wall in the general is for several miles very obscure, and much levelled. The people hereabouts have no stone quarries for building, so that they spare no pains in digging for stones, wherever they have any prospect of finding them, upon which account the wall and stations have been sufficiently plundered. The ditches are the most visible part of the works, and are very discernible in going up to *Beaumont*."

It is clear that even by Horsley's time most of the remains had been denuded by comprehensive stone robbing. MacLauchlan (1858, 80) described the course of the Wall running west from Grinsdale thus:

> "The Wall crowned a height 350yds [320m] west of [Mr Sibson's] house and curved back to the southward so as to run

within a furlong of the Mill, where it crossed the stream dividing Grinsdale from Kirkandrews. At this bend a greater quantity of foundation stones were seen than usual, and it was conjectured there might have been a milecastle at that spot."



Much of this, as MacLauchlan admits, derived from hearsay provided by the elderly Mr Sibson; the Wall itself had completely disappeared by MacLauchlan's time. From Kirkandrews the line of the Wall runs northwards along the bluffs on the west edge of the River Eden, until traces of the ditch can be seen below Beaumont:

> "continuing our course along the top of the cliff, we find traces of the foundations of the Wall and the commencement of its ditch may be observed at a small stream about 300yds before we reach Beaumont, and up the hill both Wall and ditch are plainly visible."

As to the Vallum (ibid, 81):

> "the Vallum makes an angle at Kirkandrews when about 180yds [164.6m] east of the brook in the village and ... runs straight to Burgh. It is visible on the south side of the road at Monkhall, on the north of it at the watermill, where the south agger remains in part, and its ditch occupies the road at Wormanby."

There is no known antiquarian illustration of this stretch except for a series of drawings by James Coates. Most of these show views of the course of the Wall as determined by MacLauchlan, with no visible fabric (Figs 145–7). However, his sketches of the Vallum in the Kirkandrews area are extremely valuable (Figs 152–3), particularly the image (Fig 152), which shows the Vallum near Monkhill Mill. This is now levelled, but Coates goes to the trouble of providing a profile, which clearly shows that the marginal mound was part of the works here. His view of the Wall ditch south of Beaumont (Fig 150) shows a feature that is still visible, although now almost completely overgrown by woodland.

Small evaluations have had varied success in the area. In 1996 an evaluation in Grinsdale village at NY337 558 failed to locate the Wall (Burnham *et al* 1997, 415), although a linear feature here appeared to be the Wall ditch. Mc69 and Mc70 have not been positively located; however, after his location of Mc71 and Mc72, Bartle (1961) considered the chances of finding other installations between here and Carlisle: "Little hope can be raised for the stretch along the bluffs along the Eden, but there seems good reason to hope that it will be possible to establish the position of Milecastle 69." (ibid, 40).

MacLaughlan's mention of large quantities of stone at Sourmilk Bridge on the Doudle Beck in the eastern part the field north of Millbeck Farm (quoted above) was formerly used as the basis of scheduling for the site of Mc69, although the measured position of this milecastle as shown on the 1972 edition of the *Ordnance Survey Map of Hadrian's Wall* is on a high point immediately west of Grinsdale village; the very height that MacLauchlan locates 350yds [320m] west of Mr Sibson's house. The attempt to locate and evaluate Mc69 described below was made because some of the fields in this area are under occasional ploughing regimes. As noted above, two possible locations for the milecastle were proposed, one based on MacLauchlan's observation of stonework at Doudle Beck, the other west of Grinsdale at NY 3655 5810. These two locations are nearly 500m apart (Fig 277).

Fig 277 (opposite) Milecastle 69: location of Wall Miles 69–71 on Hadrian's Wall, and of Figs 278, 281 and 283.

Geophysics

In 1998 the Doudle Beck site was explored by the geophysics firm Stratascan, using both resistivity and magnetometry techniques (Mercer 1999). The survey was inconclusive, producing some evidence of the Wall ditch on the projected alignment, but no sign of the milecastle. In August 2000 the site above Grinsdale was surveyed by Timescape Archaeological Surveys, and again both magnetometry and resistivity surveys were carried out (Robinson and Biggins 2000a). The site of the survey covers a small hill and the downward slope from the hilltop to the north. A modern track runs along the face of the slope, and north of the track there is a steep scarp, which forms the edge of the Eden flood plain, and may once have been a riverbank.

The top of this scarp is marked by a definite geophysical anomaly, which was interpreted by the surveyors as possibly comprising the Turf Wall. Another anomaly, which ran along the crest of the hill to the north of the track, was tentatively interpreted as the Military Way. Although the responses in much of the area were masked by the presence of clear ridge-and-furrow, the present writer thought he could detect the shape of a milecastle lying between these two linear anomalies in the magnetometry plot.

The evaluation

Two trenches were cut on the Grinsdale site (Fig 278). Trench 1 tested whether the milecastle was represented by the apparent anomaly between the linear features, and Trench 2 was sited to examine the southern linear anomaly on the hilltop. In Trench 1 (8m × 2m) it soon became clear that the area was archaeologically sterile, with 250mm of topsoil overlying undisturbed, pinkish-white natural boulder clay.

In Trench 2 (also 8m × 2m) the topsoil (1500) was 270mm deep, and overlay a thick, homogeneous soil deposit (1501) comprising a mid-orange-brown clay-sandy silt 510mm deep. This deposit was undifferentiated and well sorted, and appears to have been an old plough soil. It contained, at 320mm depth, a spread of rubble

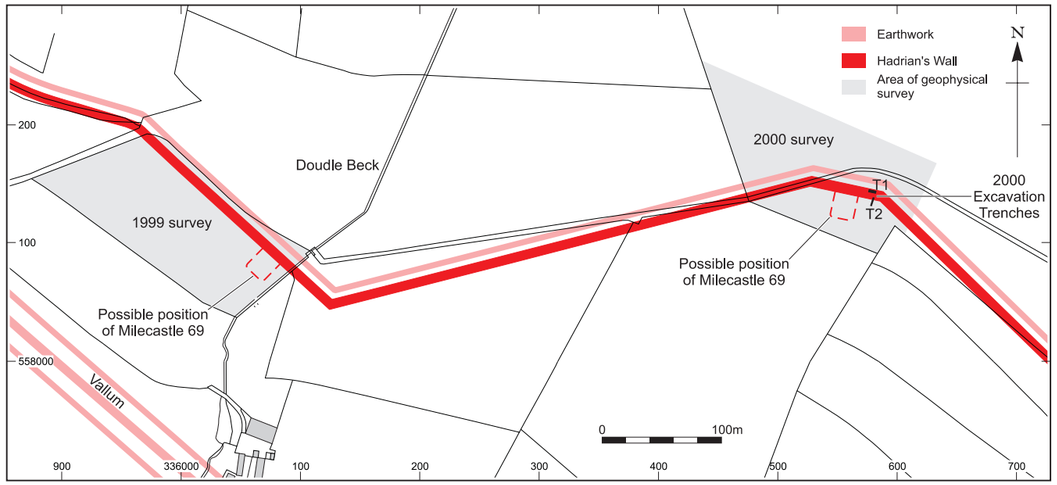


Fig 278 (above) Milecastle 69: alternative sites for Mc69, showing the extent of geophysical survey and the location of evaluation trenches.

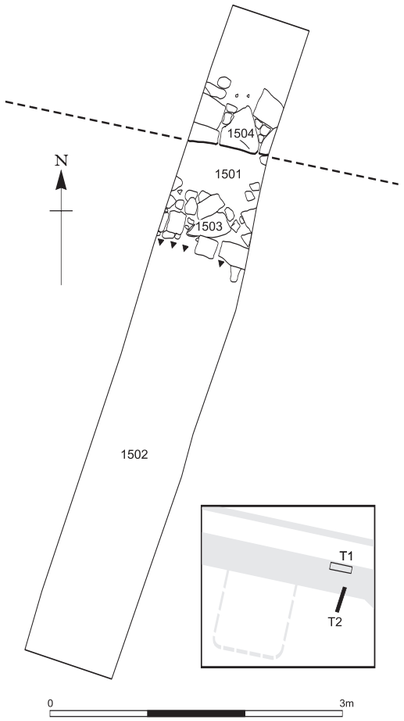


Fig 279 (right) Milecastle 69: plan of Trench 2.

Fig 280 (far right) Milecastle 69: the foundation of Hadrian's Wall in Trench 2.

(1503), including dressed stone, but generally comprising small, angular, grey sandstone pieces. Adjacent to this was a single course of faced sandstone flags, which appeared to be *in situ* (1504). These formed the south face of a flag foundation course of a wall, with a crack where the weight of the wall above had borne down on the offset below (Figs 279–80).

Finds

by N Hembrey

These small trenches produced a few modern finds and a single worked flint of late Neolithic or early Bronze Age date (Wilmott 2002, 37).

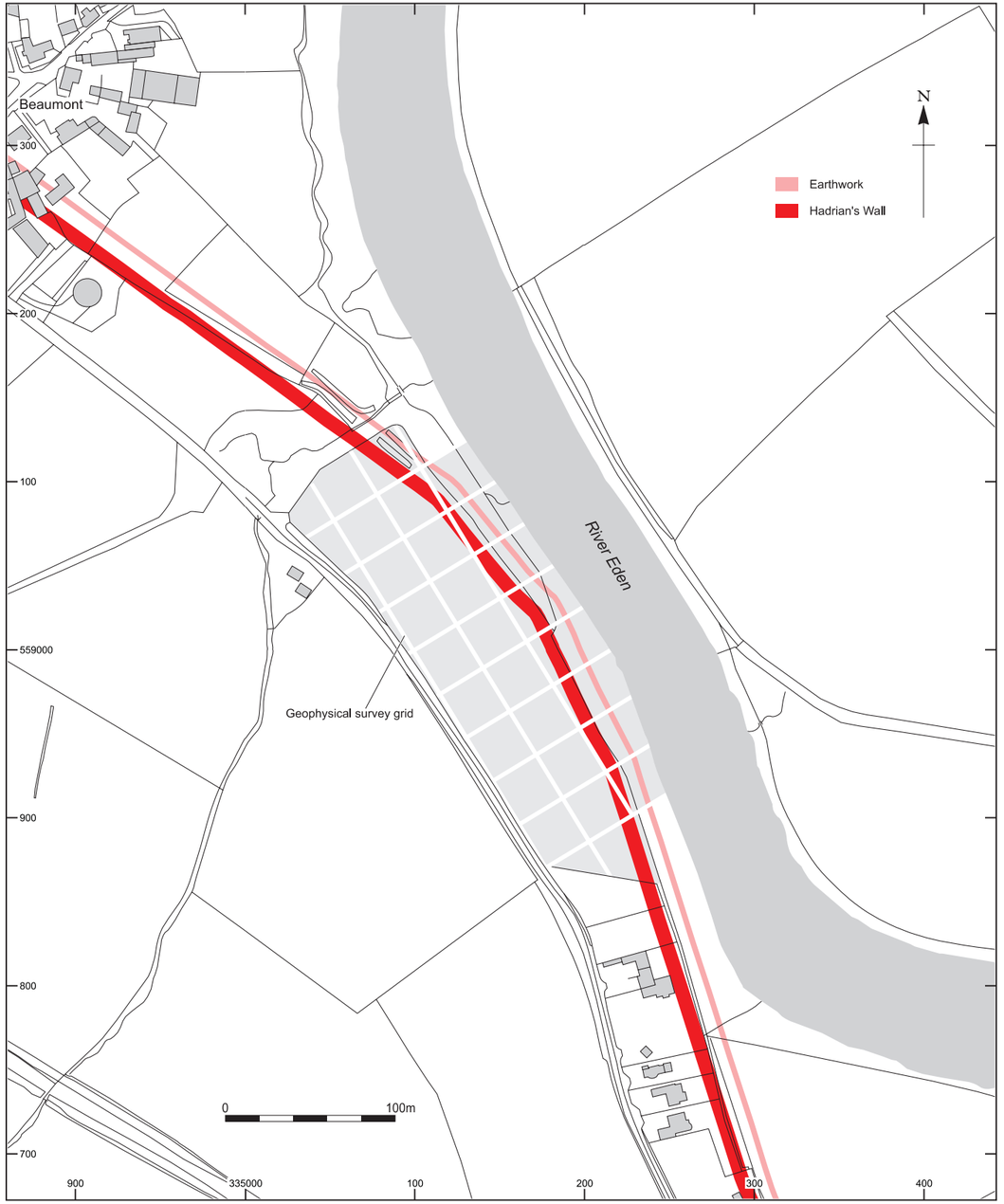


Fig 281 (opposite page) Milecastle 70: postulated site of Mc70 showing the extent of the geophysical survey.

Interpretation

The character of the stonework and the crack along the flag course suggests that this is a surviving scrap of Hadrian's Wall in the location pointed out to MacLauchlan by Mr Sibson. The depth of soil cover on the hilltop is rather more difficult to explain. The existence of ridge-and-furrow to the south of the Wall may offer an explanation. If the Wall stood fairly high at the time that the land was under cultivation there would have been a tendency for soil to build up against it as a headland developed. If the Wall was subsequently totally robbed, it would no longer retain the headland, which would tend to slump downhill over the robbed footings.

Milecastle 70 (Braelees): 2000

Like Mc69, this site has not been precisely located, although it is thought to lie in a ploughed field on the bluffs above the River Eden south of Beaumont. The Wall, in a heavily robbed state with only a few of the bottom course stones in position, was found immediately NNW of the measured site of Mc70 in 1977 (Goodburn 1978, 423). The measured site itself lies near NY 351 590 within OS parcel 1400, approximately 300m south of Beaumont Farm. The owner thinks that he has encountered the milecastle when ploughing in this field on the south side of Monkhill Beck. There are no visible indications of the milecastle on the surface.

The field (Fig 281) was surveyed using magnetometry and resistivity in 2000 by Timescape Archaeological Surveys (Robinson and Biggins 2000b). Like the Mc69 surveys the results were disappointing, showing no evidence for the location of the milecastle, although there were some ephemeral linear features of low resistivity in the expected place. It is possible that the course of the Wall was clipped at the extreme north-east corner of the survey, and it is thus probable that the Wall lies on the eastern edge of the field, where survey was impeded by dense marginal vegetation. The apparent Wall line is consistent with the visible position of the ditch on the north side of Monkhill Beck below Beaumont where it was sketched by Coates.

Milecastle 71 (Wormanby): 2000

The site

Bartle (1961) located Mc71 in 1960 (NY 3381 5921) (Fig 282). He had first located Mc72 (Fauld Farm), and identified the site of Mc71 by measurement eastwards of 1621yd or one Roman mile. This proved valid despite the fact that there were no surface indications of the site. Further excavations took place at Mc72 (Fauld Farm) in 1989 (Austen 1994), demonstrating both that this milecastle survived well and that Bartle's conclusions concerning the orientation of the milecastle were inaccurate.

The lack of any visible trace of Mc71was true in MacLauchlan's time as well, although he recorded the possible site of a milecastle between Beaumont and Burgh-by-Sands (MacLauchlan 1858, 80). This site, which can still be traced on the ground, seems in fact to be that of Turret 70b and lies, as Bartle pointed out, one third of a Roman mile east of Mc71. The site of Mc71 lies to the south of Milldikes Lane, some 600m east of Greathill Beck, on the top of the ridge or spur that dominates the broad, shallow valley of the beck. It was designed to command a good view to the site of Mc72, although this was subsequently obscured by the construction of the fort at Burgh-by-Sands. Bartle excavated "successive trial trenches ... [revealing] remains of the axial road where it runs through the Wall, and also the milecastle west and south walls; the east wall lies beneath a field boundary, and could therefore not be located."

Two worked flints and two Roman sherds were recovered (Bartle 1961, 39–40). No location plan of the trenches was drawn, and there is no record of their number. No site plan exists either. His report does not say in what condition the milecastle was, except that it was cut by field drains, and was in worse condition than Mc72 "in spite of the relative isolation of the site which might have been expected to give it greater protection from stone robbers" (ibid). Bartle's large-scale location plan of the various milecastles and turrets in the area seems to indicate that his work was located in OS Parcel 7700, and that he believed the east wall to lie beneath or to the east of the field boundary on the east side of this parcel, dividing it from Parcel 9100.

The evaluation

In the absence of either surface traces or of any data from remote sensing, the site methodology developed as the work continued. Trench 1 (8m × 2m) was excavated across the supposed line of Hadrian's Wall, and its site was determined by the barely perceptible crest of a low ridge. Having established the line of the Wall, a further four trial trenches were excavated in an attempt to find the eastern milecastle wall. Trenches 2–4 were each 5m × 1m, and Trench 5 measured 6.5m × 2m (Fig 282).

Trench 1 (Figs 283–4)

The plough soil (909) was 280mm deep. It sealed the fill of a field drain (906) containing a square-sectioned ceramic drain, which cut a plough furrow (903) interpreted as the levelled remnant of ridge-and-furrow. Beneath this was an irregular pit (922) filled with soil and a moderate amount of sandstone rubble (901) with an upper fill of sandy silt. This may have been an early robbing cut for Hadrian's Wall, the remains of which lay directly beneath this fill. The southern edge of the pit was cut into a grey-brown sandy and silty clay subsoil (902).

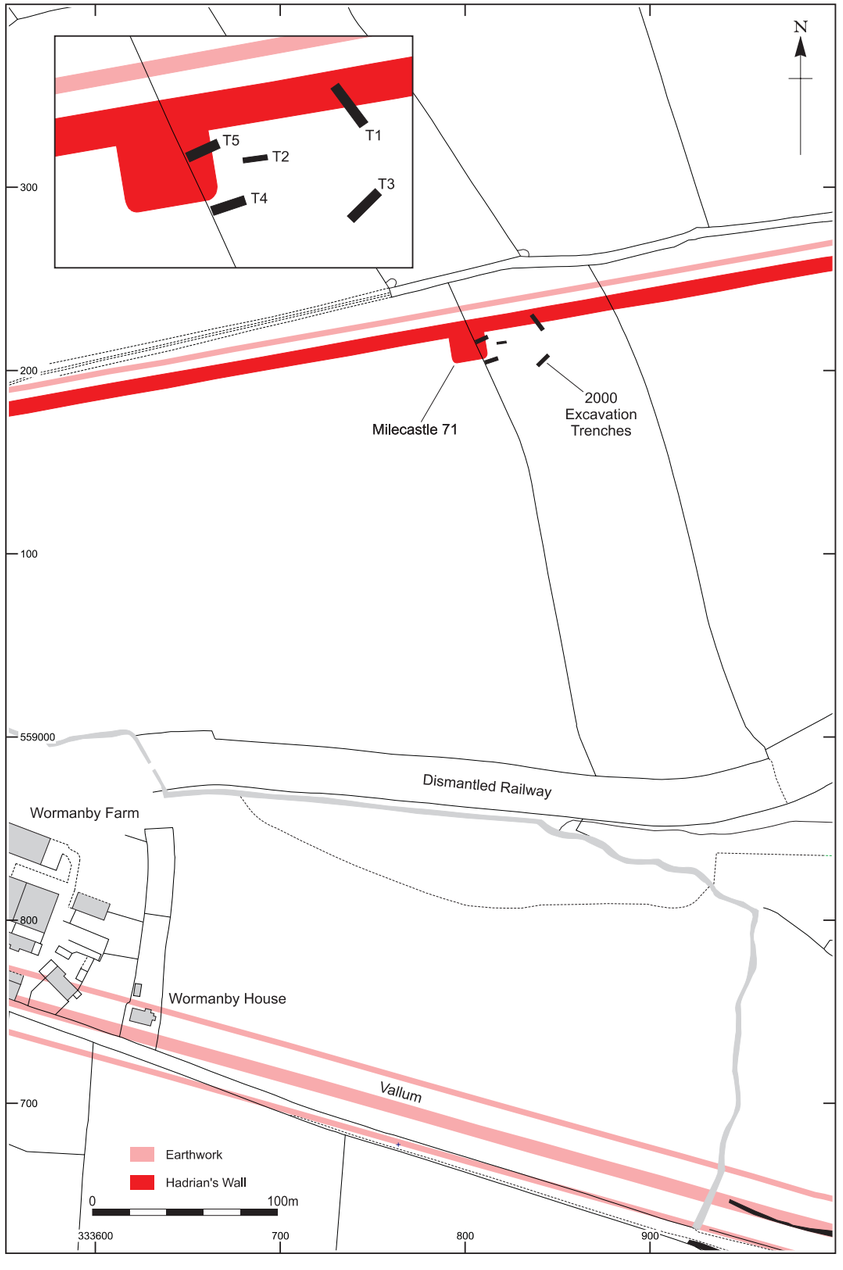


Fig 282
Milecastle 71: site of Mc71 and location of evaluation trenches.

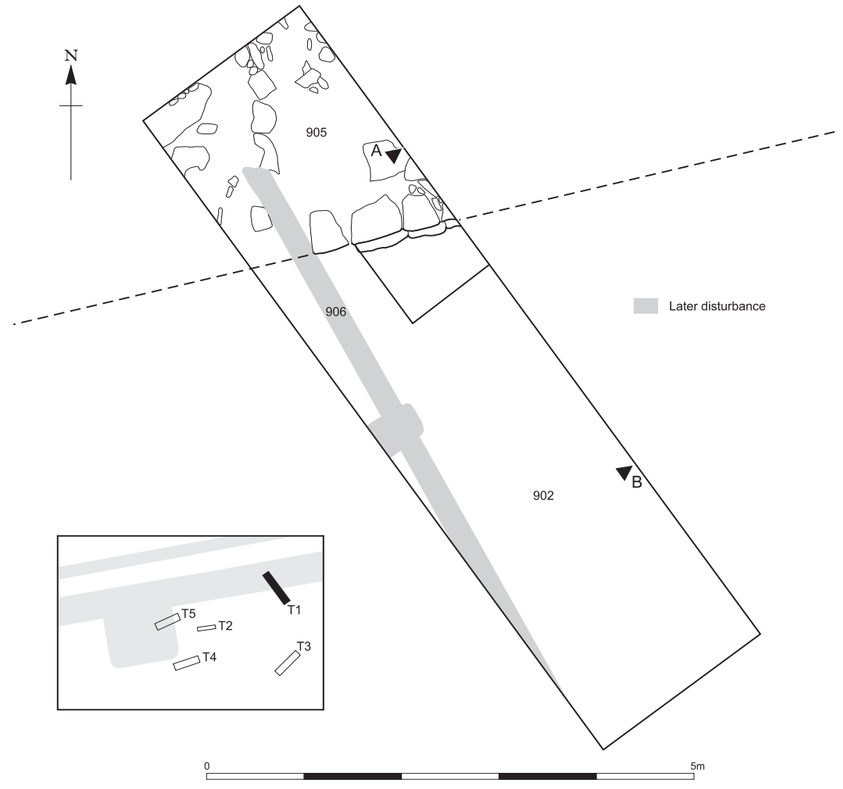


Fig 283
Milecastle 71: plan of Trench 1.

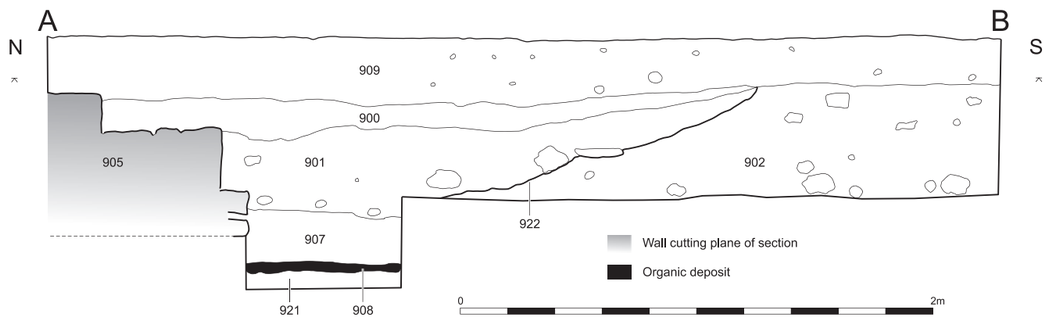


Fig 284
Milecastle 71: west-facing section, Trench 1.

The stone Wall (905) survived as a partial single course of facing stones over a flat, flagstone base (Fig 285). The facing stones were of hard grey sandstone, and the foundation course combined this material with softer red sandstone. The core was of compacted and crushed red and yellow sandstone rubble. Neither the facing stones nor the core showed any signs of bonding in either mortar or clay. The flagstone foundation course was 120mm thick, the facing stones were 260mm high, up to 390mm deep, and averaged 380–400mm in width. Beneath the stone Wall and above the natural grey clay (921) were two thin layers. The lower deposit was a dark brown organic silty clay (908), and above this was grey soil, slightly sandy, but otherwise identical to the natural clay (907). Column samples of this material were taken, but the preliminary interpretation is that these deposits represent the bottom layer of inverted turfs of the Turf Wall.

Fig 285
Milecastle 71: Hadrian's Wall in Trench 1.

Trenches 2–4
All three of these trenches showed the natural clay (921) beneath a layer of subsoil (902) with plough soil above (909). The concentration of stone in the upper layers was significantly less than in Trenches 1 and 5, and there was no sign of the turf layers at the base of the sequence. These were deliberately sought by re-opening part of Trench 2, in order to establish whether they were uniform across the site, or restricted to areas where stone structures overlay them.

Trench 5 (Figs 286–8)
As in other trenches, the plough soil (909) was 280mm deep. The subsoil beneath this (910) was the same grey-brown sandy and silty clay defined in Trench 1. Beneath this material lay the remains of the east wall of the milecastle, and possibly the east wall of an interior building as well. It should be noted that the remains of the milecastle were extraordinarily slight, having been virtually obliterated by robbing and past ploughing.

The most obvious features on removal of the sub-plough soil deposit (910) was an interrupted line of fragmentary and degraded sandstone blocks (911), and, 2.98m west of this, a single such block (912). These were on the same north–south orientation, with the flat faces presented to east and west respectively. Between these stones was a mottled sandy layer containing a high proportion of small sandstone pieces (913). The sandy part of this deposit was clearly decayed red, yellow, and grey sandstone. The entire feature represents the very bottom of the eastern outer wall of the stone milecastle. The sections of the trench showed a possible feature cutting through the sub-plough soil deposit. This was defined only by slight texture differentiation and by a concentration of sand and sandstone (917) (Fig 287). Interpreted, it appears to have been a 470mm wide, straight-sided, flat-bottomed feature running parallel to the milecastle wall, which lay 1.04m to the east. It is possible that this represents the shadow of the east wall of an internal building.

These residual stone structures sat on a light-grey silty sand deposit (914=915=919) containing sandy patches (920), beneath which was a partial black organic deposit (916). This profile is identical to that under the stone Wall in Trench 1, and is similarly interpreted – as the base of the demolished wall of the primary Turf Wall milecastle. This material lay directly on top of the natural clay (921).

Finds

by P Austen and N Hembrey

The site produced a few undiagnostic objects, including ironwork of probable modern date (Hembrey 2003). All pottery recovered was post-medieval in date (Austen 2006).

Interpretation

The archaeological remains recovered, although slight, are of great importance given the lack of basic knowledge regarding the Wall and associated structures in this area. Bartle's discovery of the milecastle is confirmed, as is its almost totally robbed

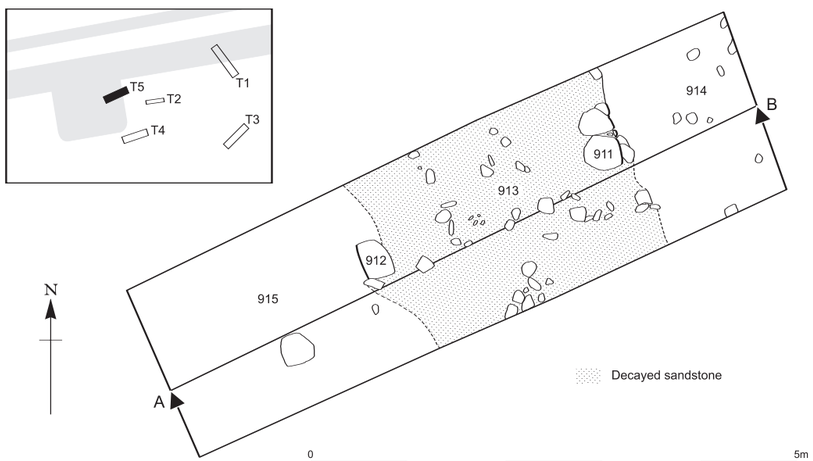
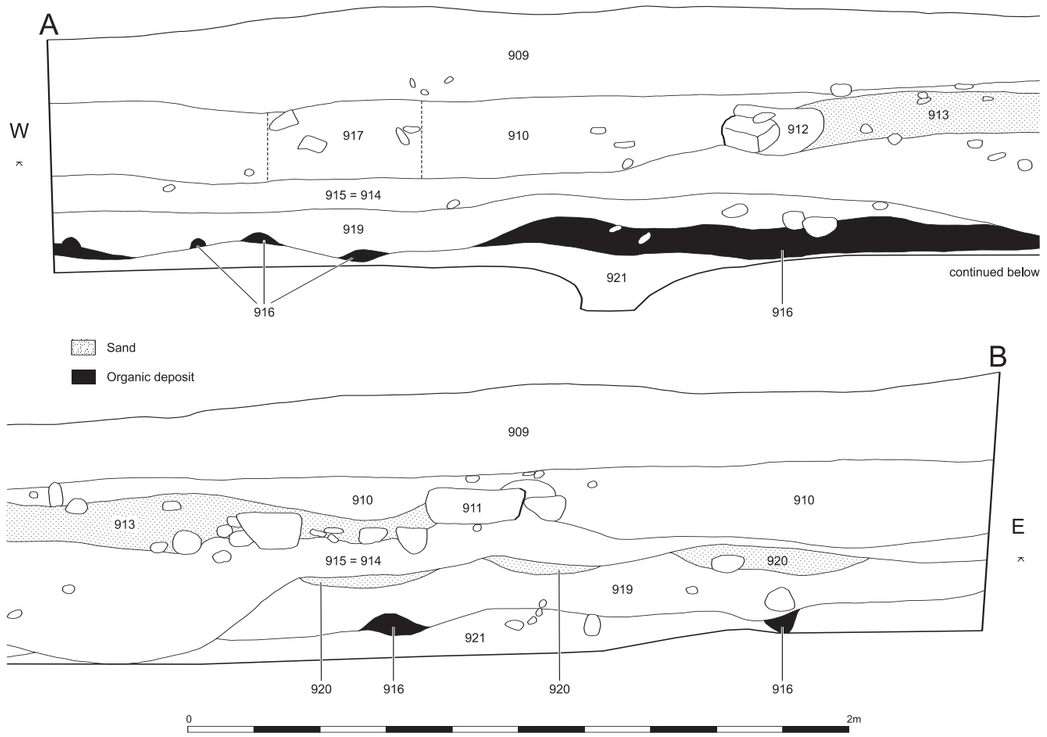


Fig 286
Milecastle 71: plan of Trench 5.



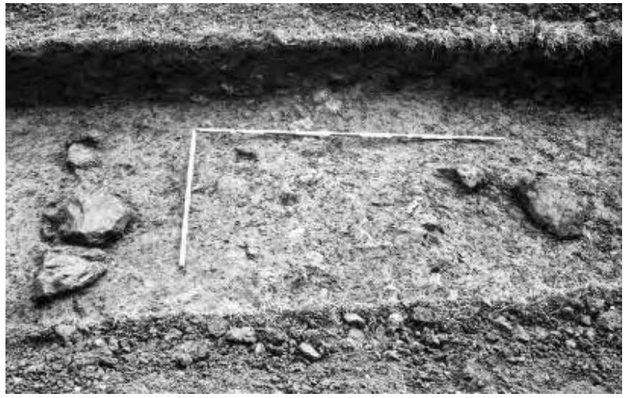


Fig 287 (top) Milecastle 71: south-facing section of Trench 5.

Fig 288 (above) Milecastle 71: surviving fragment of the west wall of the milecastle in Trench 5.

condition. The east wall of the milecastle actually lies to the east of the boundary between OS Parcels 7700 and 9100, and not upon it as postulated by Bartle. It is clear that two archaeological phases of the milecastle survive. The Turf Wall and the walls of the Turf Wall milecastle survive to a single turf course, and the Stone Wall and milecastle occupy the identical site following a thorough demolition; a pattern found at Turf Wall milecastles from the easternmost (Mc49 (Harrows Scar); Richmond 1956) to the westernmost (Mc79 (Solway House); Richmond and Gillam 1952; and 193–8).

The presence of turf work lying directly upon the natural clay beneath shows conclusively that the cobble raft footings found beneath the Turf Wall at Burgh-by-Sands and at Mc72 (Austen 1994) were not present at Mc71. This useful observation narrows down the area where this exceptional form of construction was employed. The interpretation of a nebulous feature in Trench 5 as the wall of an interior building is strengthened by the fact that it is in exactly the right place for such a feature, and is of the right width. It was 470mm wide and 1.04m to the east of the milecastle wall. Extremely similar measurements have been recovered for the location of such walls at many sites, including those excavated during the present project. At Mc9 for example the equivalent measurements are 540mm and 1.02m. The east wall of the milecastle was totally robbed such that only a few degraded pieces of sandstone remained. The failure to find Mc69 and Mc70 in geophysical survey may well be attributable to similar total robbing of the stones at these sites.

Milecastle 78 (Kirkland): 2000

The site

Mc78 and Mc79 lie at the ends of the penultimate mile of Hadrian's Wall as it passes along the southern edge of the Solway (Fig 289). This stretch has seen rather more archaeological observation and research than much of the frontier line west of Carlisle, as it has been necessary to explore the western end of the Turf Wall to compare it with the eastern end of this feature in the Birdoswald area. Comparisons between the archaeology of Wall mile 50 and Wall miles 78–79 were sought in the 1930s and 1940s in order to answer some of the larger outstanding questions of frontier morphology and chronology. The earliest reference to the site of Mc78 was provided by Horsley (1728, 157), who recognised that spacing between this milecastle and Bowness required that another milecastle should exist between them:

> "This *castellum* [78] is fourteen furlongs from *Boulness*; so that there has been another [79] between this and the station, which has supplied the place of the last [80]. If the wall was begun at *Boulness*, then the *castellum* has been built just at a proper distance."

Simpson *et al* (1935a, 214) recorded that a prominent platform still existed during their time.

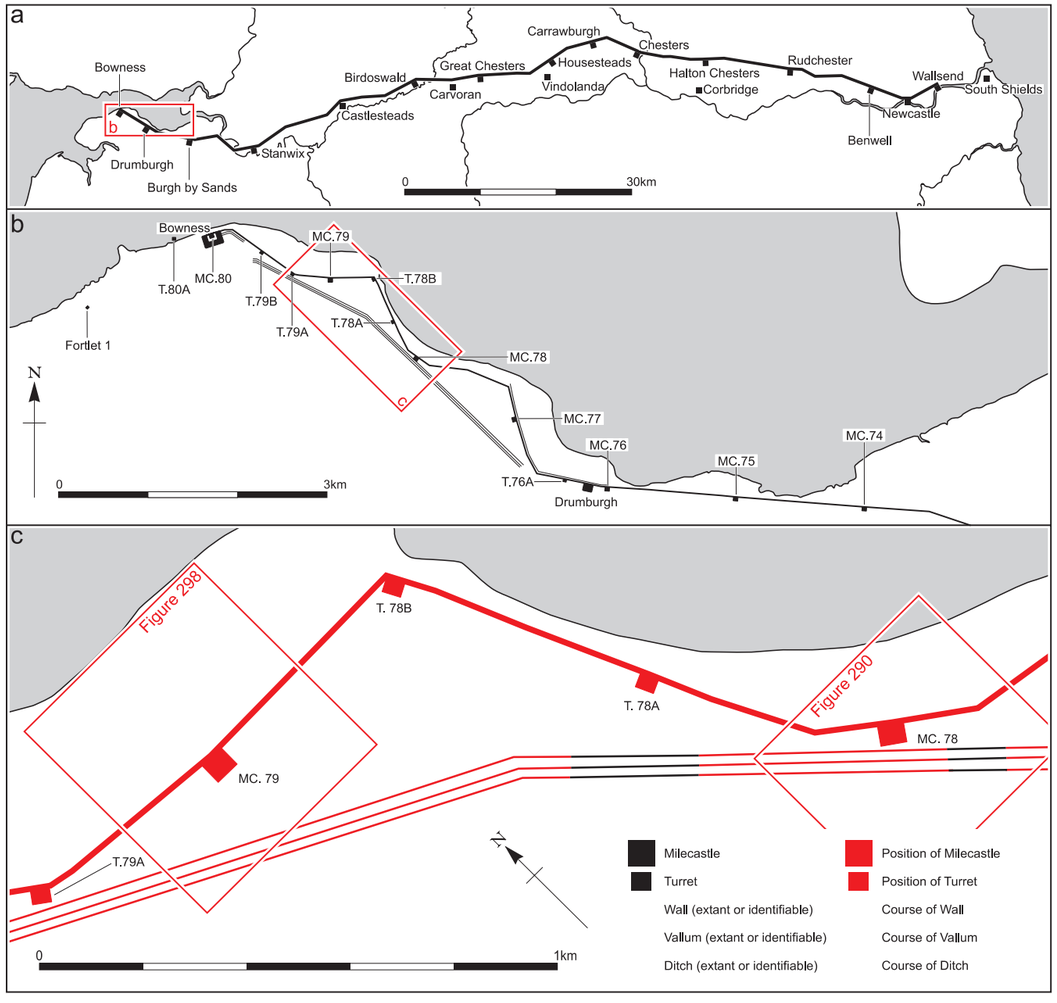


Fig 289 Milecastle 78: location of Mcs 78 and 79 on Hadrian's Wall, and Figs 290 and 298.

This, although still clearly discernible, seems to have been eroded somewhat since by ploughing. The farmer, Mr Hogg, has often ploughed up pieces of sandstone, the larger of which he pitches into the hedge bank.

The only exploration of the milecastle to have taken place until now was carried out in 1934 as part of the long-running research campaign of the 1930s to establish whether the Turf Wall actually extended as far as the western end of Hadrian's Wall. Following the discovery of the Turf Wall in the Birdoswald-High House area, this question became important in the final unravelling of the history of the linear components of the frontier and their relationships one to another (p 141). The report on its discovery is laconic, and no plans, photographs or detailed locational data were provided. Simpson *et al* (1935a, 217) wrote simply that "the west wall was found, measuring 9ft 2in [2.8m] across the foundations. One course of masonry stood upon the inner face above a five inch offset: the outer face had been robbed."

No observation was made on the survival or otherwise of remains of the Turf Wall structure.

The Vallum behind the site of Mc78 is clearly visible as an earthwork, as it is slightly further west behind Kirkland House, although it had not been noticed by Horsely, MacLauchlan or any other observer. Surprised by its appearance, Simpson trenched it in 1934 (Simpson *et al* 1935a, 214–5). The ditch was 1.95m deep and 6.9m wide with steeply sloping sides and a flat bottom. The south mound, which was revetted at the sides with turf cheeks, had its centre line 15m from the centre line of the ditch. The north mound, which was not examined, seemed to be the same distance away, but no mention is made of the marginal mound. This evaluation provided the first certain evidence that the Vallum extended westwards of Burgh Marsh. In 1948, Simpson located T78a, although no plans or detail of it were published (Simpson *et al* 1952, 14). This turret also appears on Horsley's map.

Mc78 is situated at NY 2455 6134 (Fig 290), some 100m south of the road to Bowness-on-Solway, and to the west of the access road to the Glendale Caravan Park. It is bisected by a field boundary, the north side lying in OS parcel 5737 through which the line of the Wall passes, and the south in OS parcel 5830. The north field is under permanent pasture, but the larger south field is cultivated intermittently in rotation, and it was last ploughed and sown for pasture in

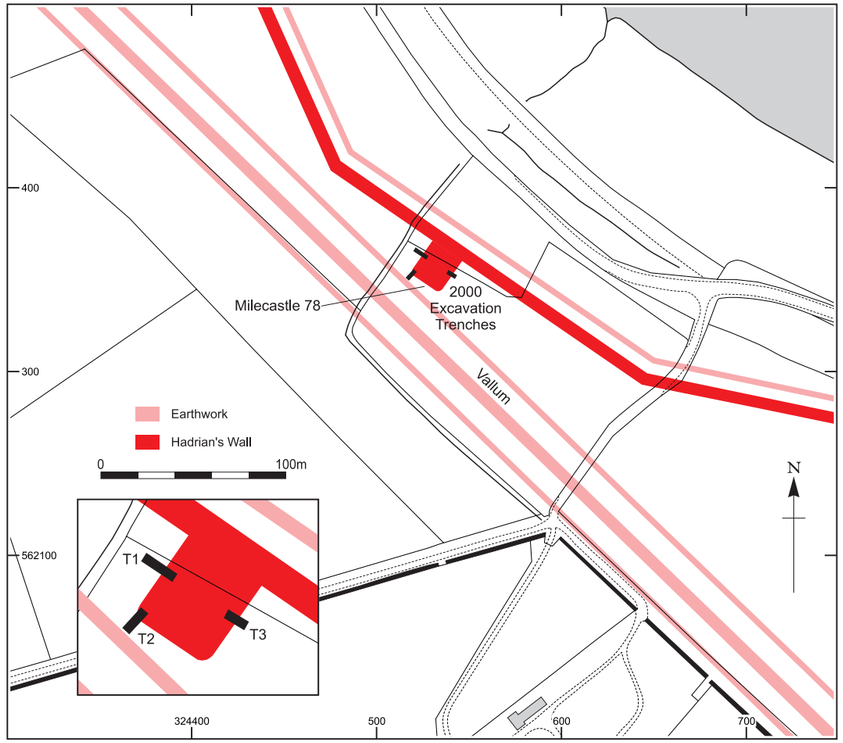


Fig 290
Milecastle 78: location of Mc78 and excavation trenches of 2000.

autumn 1999. The site was included in the milecastle project in order to assess the impact of this activity on the surviving archaeology.

The evaluation

by Helen Moore

Three trenches were excavated (Fig 291), their location guided by the topography of the slight milecastle platform, and by information from Mr Hogg concerning the location of parchmarks in drought conditions, and places where stones have been encountered in ploughing. Trench 1 (8m × 2m) was designed to traverse the west wall and to examine some of the interior, Trench 2 (6m × 2m) was intended to cross the south wall and Trench 3 (5m × 2m) the east wall.

Trench 1 (Fig 292–3)

The plough soil (1400) covering Trench 1 was 0.25m thick and contained very little stony material. Beneath it was a recent, but now inactive plough soil horizon (1401) 190mm thick, containing abraded sandstone rubble probably derived from ploughing above the milecastle. On removal of this material, an area of disturbance was defined running north–south across the trench. When excavated, this proved to be a shallow, roughly linear cut (1430) with gradually sloping concave sides. It contained two fills, the lower of which was very similar to the natural subsoil, a blue-grey silty clay (1432), *c* 60mm thick. This was only observed on the western side of the cut, and probably represents the rapid backfilling of the trench with the material excavated from it. The upper fill (1432), a grey-brown silty sand was 350mm thick, and contained many abraded red sandstone pieces. It is probable that this cut, which is late in the stratigraphic sequence, represents one of Simpson's 1934 exploratory trenches. The excavation trench (1430) cut the western edge of a linear, north–south trench

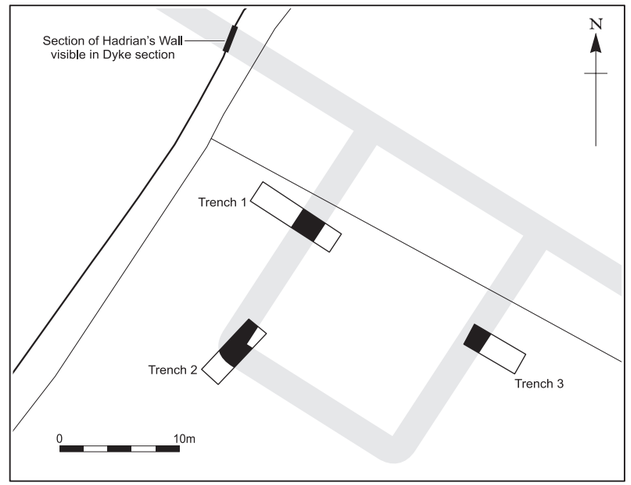


Fig 291
Milecastle 78: plan of trenches and reconstruction of the outline of the milecastle.

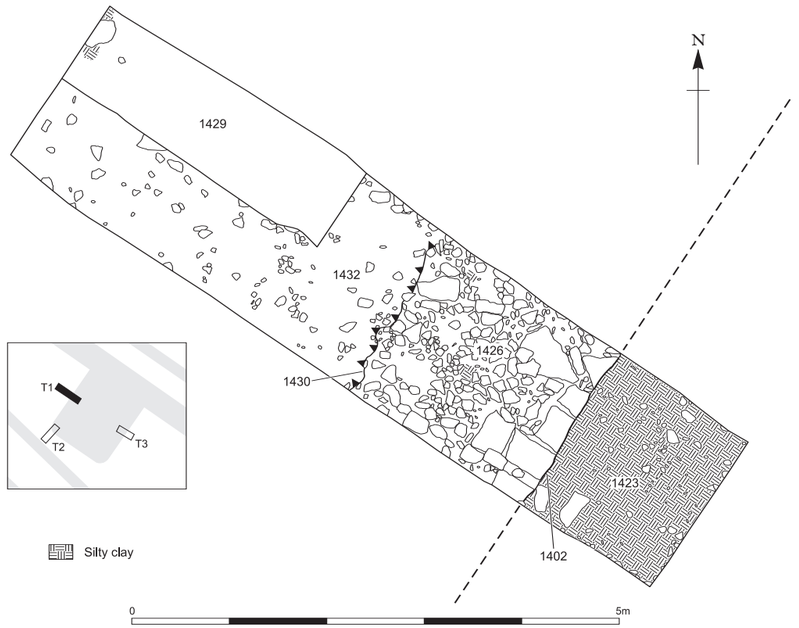


Fig 292
Milecastle 78: plan of Trench 1.

Fig 293
Milecastle 78: milecastle wall and interior surface in Trench 1.

(1402) with vertical sides and flat bottom, 360mm deep, and filled with brown-red silty sand (1403) containing a large amount of red sandstone rubble, which was probably derived from the rubble core of the milecastle wall. It was 0.36m deep, and was approximately 3.3m wide, although this is uncertain due to the truncation on its west side. This was clearly the robber trench for the western wall of the milecastle, as the remains of the wall survived beneath the rubble fill.

The bottom course of the foundations survived in part (1426); the western face had been robbed in its entireity, as noted by Simpson. The eastern face consisted of a course of large flagstones 800–900mm thick and up to 0.56m × 0.32m in plan (Fig 293) The wall core was composed of red sandstone rubble bonded together with a pale blue-grey clay, which appears to have been derived from the natural subsoil in this area. The eastern edge of the robber trench (1402) was suspiciously neat and vertical. This led to the conclusion that this was no later cut, but that the facing stones above the flagstone course had been removed from the west side, leaving the earth face that they had retained. The material retained by the milecastle wall was a thick, compact deposit of grey sandy, silty clay (1423) 230mm in depth, which had a heavy admixture of pea gravel towards the top, possibly comprising a remnant of surfacing in the milecastle interior. The vertical face presented by the western edge of this material in the robber trench did not coincide with the face of the flagstone foundation course, which it overlapped by some 80mm.At the western end of the trench natural subsoil (1429) was encountered, comprising a blue-grey silty clay with orange flecks.

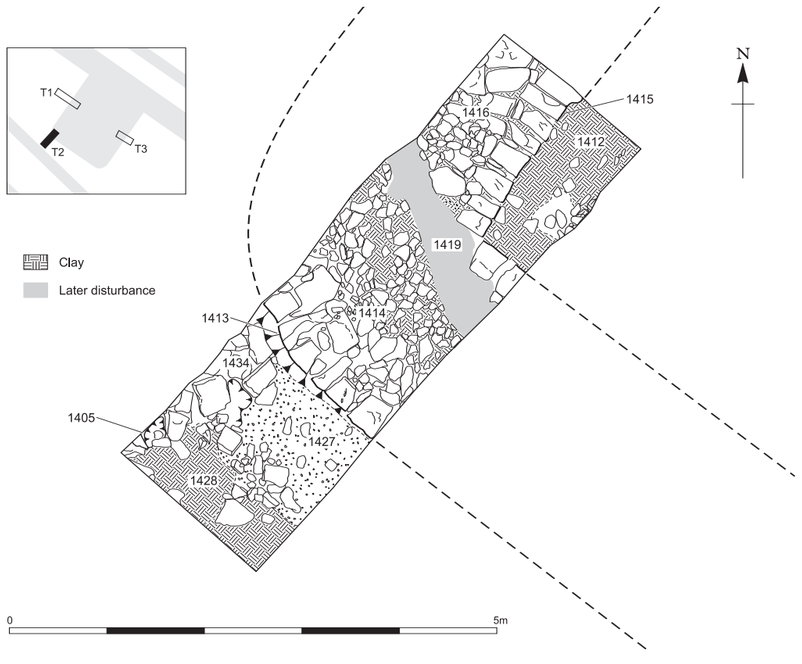


Fig 294
Milecastle 78: plan of Trench 2.

Trench 2 (Fig 294–5)
Topsoil (1407) in Trench 2 was very shallow at 0.17m thick, and directly below this archaeological deposits were observed. The trench was fortuitously located on the south-west corner of the milecastle, so two robber trenches following the alignments of the western and southern walls were visible, reflecting the curving outer face of the corner of the milecastle. A modern field drain (1419) filled with yellow clay cut across these trenches, but did not compromise the legibility of the archaeology.

The robber trench (1408) following the west wall had vertical sides, and followed exactly the line of the original wall. Only the west end of the southern robber trench (1410) was defined, but it was clearly continuous, both walls being robbed as part of the same operation. The fill (1409) was identical to that of the Trench 1 robber trench: a mid-reddish brown sandy silt with frequent angular sandstone pieces derived from the rubble core of the wall as it was being robbed and demolished. The depth of the western robber trench was approximately 0.40m and the southern trench was 0.25m deep. Both edges of the southern robber trench were defined, giving a width of 2.35m.

Beneath the fills of the robber trenches lay the bottom course of the foundations of the south-west corner of the milecastle (Fig 295). This was 2.51m wide and of identical construction to the wall in Trench 1, except for the fact that dressed, flagstone foundation stones occurred on both faces of the corner. This revealed that the inner and outer corners were treated differently. The outer face was curved in the standard playing card shaped corner, but the inner corner was angled. This was clearly intended to be a right angle, but was in fact somewhat obtuse, at 95°. The interior of the milecastle was treated in the same way as noted in Trench 1. Again, the inner face of the wall seems to have been robbed from the outside, leaving the vertical earth face that it revetted, which consisted of grey silty clay surface (1412) overlaying the inner face of the flagstone course by 80mm. Pottery was recovered from this surface, and a patch of burnt clay and charcoal on top of it may have been a ploughed-out remnant of a corner oven or hearth.

On the south edge of the trench, immediately behind the south wall of the milecastle, a pale blue-grey clay deposit (1427) was banked up over the outer 80mm of the south facing stones of the wall. It was thickest closest to the wall at 180mm, tapering to 50mm to the south. Immediately above this layer was a thin deposit of small whitish-grey pebbles and silty sand (1424), 1.40m wide and 160mm thick. This deposit may have been laid above the clay so that there would have been a dry, firm surface upon which to work to construct the superstructure of the wall. This interpretation is

Fig 295
Milecastle 78: angle of south-west corner of milecastle in Trench 2.

supported by the fact that a shallow post hole (1405) was excavated through this surface. It was half-moon shaped in plan, very shallow at 50mm deep, and may have been a post hole for scaffolding to construct the wall.

Trench 3 (Fig 296)
The topsoil in Trench 3 was 250mm thick and directly below this archaeology was encountered. On the east side of the trench there was a substantial robber trench (1421), identical to those in the other two trenches, which marked the line of the east wall of the milecastle. The east edge lay beyond the limits of the trench. This robber trench was cut through a layer of mid grey-brown clayey silt (1418), which contained some large pieces of sandstone rubble. These were randomly spaced and are likely to have been disturbed by ploughing. This is probably an early plough soil layer.

A number of finds were recovered during cleaning of this layer, including a brooch and a coin. This layer was not excavated, except in a very small slot, which revealed a grey clay surface beneath it that may be similar to the surfaces (1423) in Trench 1 and (1412) Trench 2. Trench 3 was not excavated fully, but the discovery of the robber trench for the east wall fulfilled the aim of establishing the overall dimensions of the milecastle.

The Wall westwards
Immediately to the west of the site of Mc78 is a small, deep north–south drainage dyke, which has been canalised and seems formerly to have been stone lined. It is probable that robbed Roman stone has been used for this as many sandstone blocks within the bed, both up- and down stream of the milecastle have a distinctly Roman appearance. Given that this dyke transected the line of the Wall, it was decided to attempt to locate

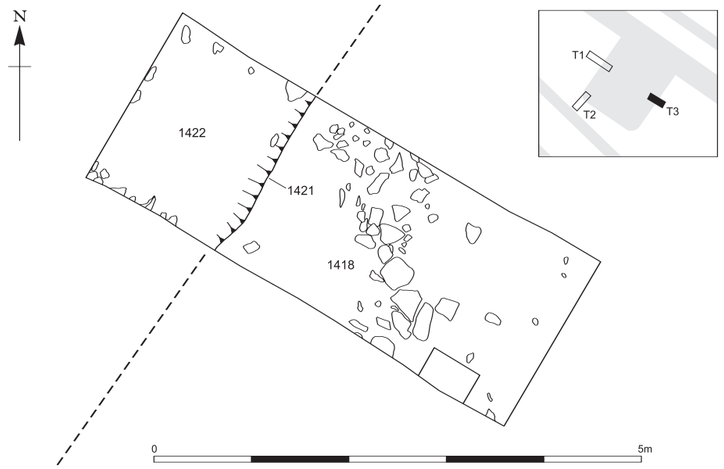


Fig 296
Milecastle 78: plan of Trench 3.

it in section. Undergrowth was cleared, and part of the eastern edge was cleaned back slightly. This revealed the foundations of the stone Wall, comprising two large flagstones, of which the north facing stone was 90mm thick and 710mm deep. Above this was a mass of beach cobbles and sandstone pieces, which clearly comprised intact core work, robber trench filling or a combination of both. The importance of this observation was that it enabled the true line of the Wall, and thus the north wall of the milecastle, to be approximately established.

Finds

by P Austen, N Hembrey and D Shotter

Mc78 yielded a small assemblage of modern finds, but also fired clay fragments marked with grooves, which may have been loomweights (Hembrey 2003). Two Roman small finds were recovered:

1. 1461, context 1418, lower plough soil

Small copper alloy bow brooch of Headstud type. The pin is missing, the catchplate is broken, and the headstud is broken off. The rectangular-sectioned upper bow is bent sharply to form the hinge casing, and bears two horizontal grooves half-way down its length, within which may have been blue enamelled decoration in several rectangular panels. The D-sectioned lower bow bears two projections, and tapers to the catchplate. Length 39mm (Fig 297)

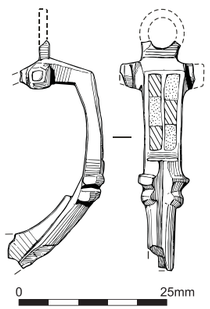


Fig 297
Milecastle 78: copper alloy brooch.

Derived from the Colchester brooches, but found from Southern England up to Southern Scotland, from the mid-1st to late 2nd centuries AD, these brooches are regarded as high status and high quality, used by 'a small section of the community' (Hattat 1982, 100).

2. 1462, context 1418, lower plough soil

Coin, damaged and moderately worn: *AE As*, Hadrian AD 119–38. Diam 22mm

A small quantity of Roman pottery was recovered (Austen 2006), principally from topsoil (1417, 1418) and robber trench fills (1404), including ten BB1 sherds: two are very everted cooking pot rims of the very late 3rd to early 4th centuries; and six are sherds (approx 20%) of the rim of a flanged mortarium in fairly hard creamy fabric with upright bead – close to Gillam 275, and probably late 3rd to early 4th century in date; and three sherds of greyware. The internal surface of the milecastle (1412) produced four sherds in a gritted fabric, probably 3rd century Roman.

Interpretation

No evidence for the Turf Wall milecastle was recovered. The stone Mc78 measured approximately 19.2m east–west and 20.74m north–south externally. The foundations of the walls were 2.51m wide consisting of large, 80mm thick flagstones with a core of sandstone rubble in clay. The pattern of robbing, whereby the vertical robber trench edges were cut 80mm short of the width of the foundations on both faces, suggests that the wall face above the flagstone course was set back from the edge of the flags by an 80mm offset, both inside and outside. The curtain wall around the milecastle would thus be 2.35m in width. The southern exterior corners were curved, giving the standard playing card shape, but the internal corners were square. This treatment is common to many other milecastles, such as Mc37 (Housesteads), Mc39 (Castle Nick), Mc42 (Cawfields) and Mc79 (Solway House).

There is evidence for artificial surfacing both inside and outside the milecastle. This was put in place after the walls were built, but probably as part of the building process. The internal surfacing, of grey clay 250–300mm thick, capped with gravel was dumped up against the milecastle walls and levelled, and it seems possible that it was laid to prevent waterlogging. In the south-west corner was a truncated burnt feature, which may have been a hearth or oven, and is strongly reminiscent of the similar burnt feature in the south-east corner of Mc10 (Walbottle Dene) (p 188).

Milecastle 79 (Solway House): 1999

The site

The milecastle occupies the north-west corner of OS field 6320, immediately east of the agricultural storage barn (Fig 298). The MPP revision of the scheduling has renumbered this part of the monument as SM28476. It is at present under pasture, and is ploughed at intervals for pasture renewal, which is the reason for its inclusion in the Milecastles Project.

References to this end of the Wall in antiquarian literature are comparatively few, and illustrations very much more scarce. James Irwin Coates' evocative painting of 1881 captioned "Core of Wall,

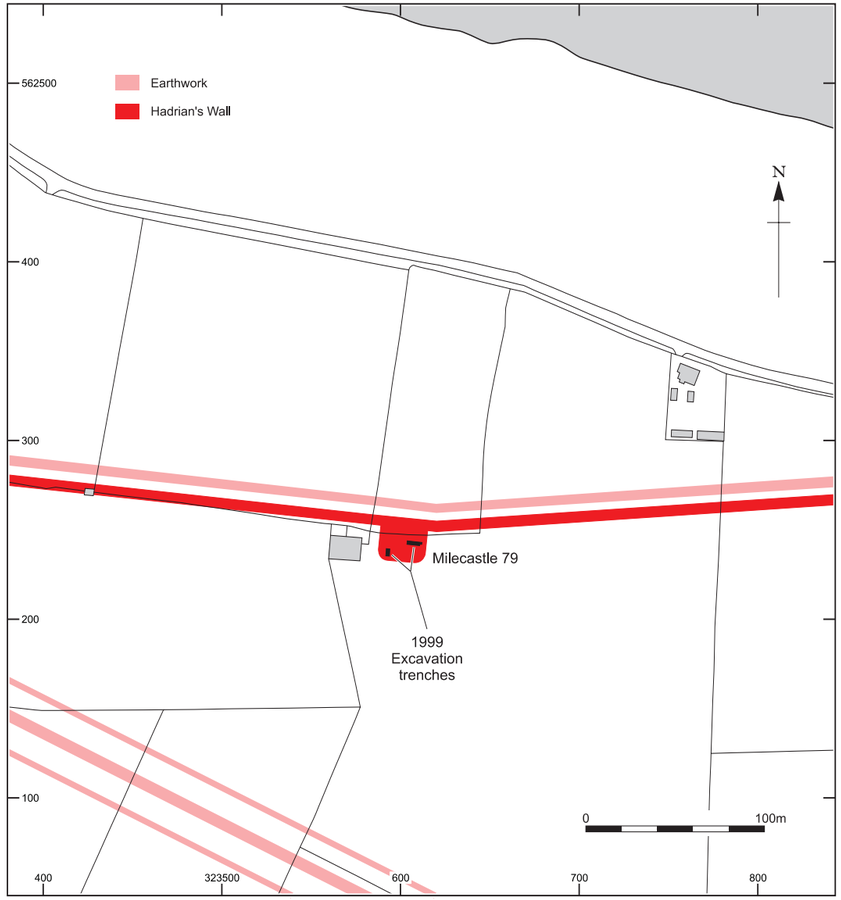
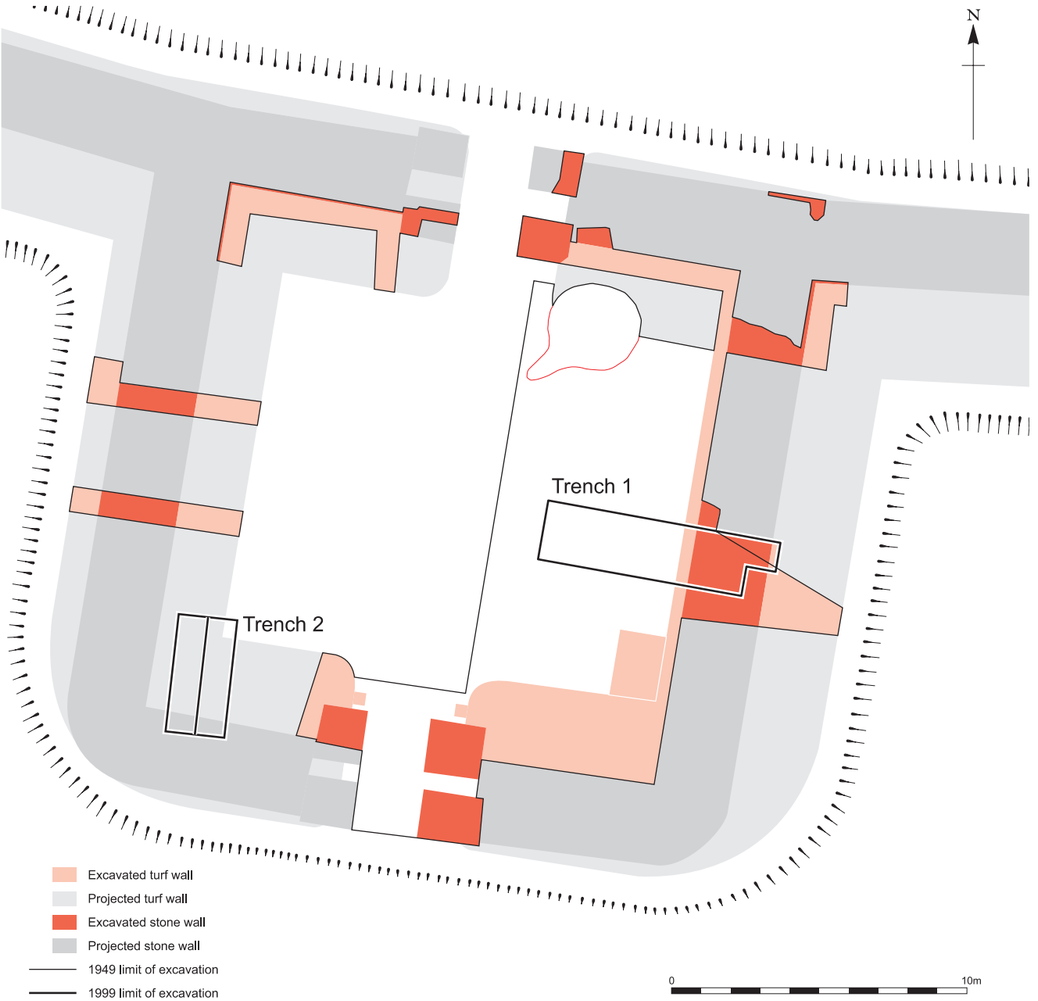


Fig 298
Milecastle 79: location of the milecastle and trench locations.

1/4 mile W of Port Carlisle" (Fig 171) shows the stretch of core that still survives in the hedge banks immediately west of Mc79, and is painted looking north-east from the south side of the Wall. Despite the survival of this stretch of core, there are no earthworks to indicate the milecastle's position and no platform is shown in the Coates' painting either.

The site of Mc79 was initially recognised by Simpson in 1948, and its location at NY 2369 6224, 300m west of Port Carlisle was confirmed when it was partially excavated in 1949 by Richmond and Gillam (1952), using a labour force of Ukrainians (ibid, 40), apparently from PoW Camp 68, Lockerbie. This excavation was prompted by wider questions about the frontier at large (Richmond and Gillam 1952, 17). It had been found to survive in good condition during Simpson's trial trenching in 1948, and was considered to be the most suitable site to answer a specific question. The excavation of Mc50 (High House) in 1934 (Simpson *et al* 1935b) had shown that its occupation had been short, and that the Turf Wall and milecastle was soon superseded in the Birdoswald sector by the Stone Wall and milecastle. The stone Mc50, however, occupied a different site to its predecessor. It was decided to examine the stratified material from a milecastle where the stone phase survived above the turf phase in order to establish the duration of occupation of the turf installation before its replacement. Furthermore, the selection of a site as far west as possible would provide a date that would reflect the end of the period during which the replacement in stone took place.

Fig 299
Milecastle 79: plan of 1949 excavations with 1999 trench plan superimposed.



The 1949 excavation investigated the eastern half of the milecastle (Fig 299), with trenches also cut across the side walls and in the gates. The milecastle, together with the Wall on each side of it, was built upon an artificial platform or embankment 1.49m high, built up of alternating turf and gravel layers (ibid, 27). This was clearly intended to preserve the Turf Wall from undermining by the flooding, which is still a common occurrence between Port Carlisle and Bowness.

The turf walls of the first phase of the milecastle survived sufficiently well to show that they were 5.7m thick, and the milecastle measured 14.47m east–west and 12.13m north–south, making it the first Turf Wall milecastle that could be described as short-axis in plan, and the first where any distinction of axis type could be made (Fig 300). The flanking posts for the south gate were found, the gate being offset some 900mm west of a central position. The gate passage itself was 3m wide, and timbering did not revet the full width of the passage, as at Mc50TW. The excavators (ibid, 25) suggest that the gate did not support a tower. A turf base for a stair or ramp to the rampart was identified in the south-east corner of the milecastle.

No traces of a building were found in the eastern half of the milecastle in this period, although a number of ovens or hearths occupied the space. One of these (H1) comprised a re-used amphora base, the second (H2) was slightly raised, edged with upright stones, and paved with flat slabs. It was replaced and overlain by H4, of which flat slabs in a rectangular form survived (ibid, pl vii, I; Fig 301). H3 was a well built rectangular hearth with a fireback. In addition to these hearths there was a low table or stand made of three slabs placed upright on edge, supporting two flat flags. A sinuous, shallow disturbance filled with cobbles was probably intended to backfill subsidence in the top of the sea bank.

The pottery recovered from the Turf Wall phase deposits was compared with that from Mc50TW. It was suggested that the original construction ofMc 79 came somewhat after that of Mc50, and that occupation at the former site continued longer within the reign of Hadrian than at Mc50TW, where the later Hadrianic material was found in Mc50SW. The absence of Antonine material suggested to the excavators that this end of the Turf Wall was replaced in stone after, rather than prior to, the Antonine occupation of Scotland (ibid, 30–1).

The stone replacement of the milecastle followed a fairly thorough demolition of its predecessor (Fig 302). The interior of the milecastle was built up by the addition of a deposit of gravel some 430mm thick, which sealed the occupation horizon of the Turf Wall milecastle. The stone side walls were 2.42m wide at the foundation, while the north wall, and therefore the Stone Wall measured 2.83m over the foundations, with the first course 2.64m wide after offsets had been taken into consideration. The thickness was further reduced by two offsets on the south face. The walls were all founded on a single course of thin stone flags without any packing beneath, and these flags had consistently cracked along the line of the offset under the weight of the mass of masonry above in the manner typical of the stone replacement to the Turf Wall.

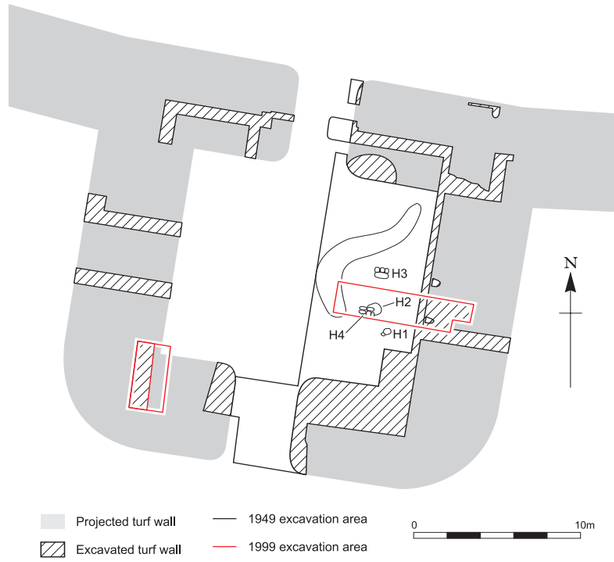


Fig 300
Milecastle 79: plan of Turf Wall phase of Mc79 derived from 1949 information.

The southern corners of the milecastle were squared on the inside, and curved around the outside. The gates were not well preserved, although four square pier foundations were found,

Fig 301
Milecastle 79: hearths H2 and H4 excavated in 1949.

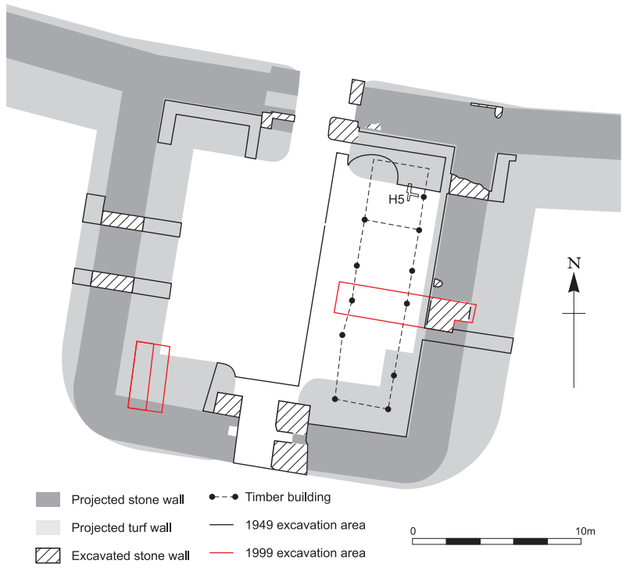


Fig 302
Milecastle 79: plan of Stone Wall phase of Mc79 derived from 1949 information.

Fig 303
Milecastle 79: post-excavation photograph of 1949 work. Note the upstanding 'islands' of stratigraphy on which the stone-lined post holes of the stone phase building were retained.

comprising packed clay and cobbles in foundation pits. In the stone phase there had clearly been a timber-framed building in the east half of the milecastle. This was represented by a series of paired post holes, of which only the stone-lined bases remained. The building was rectangular, and measured *c* 12.6m × 3.3m. A hearth, partly made with a re-used gaming board, existed near the north wall. The building might not have lasted long, as its north-west corner post hole was destroyed by the excavation of a substantial pit containing facing stones, footing flags, chamfered plinth stones and gate jamb stones. The excavators associated this activity with an early 3rd-century remodelling of the gate. It certainly did not mark the end of the occupation of the milecastle, as the pit was overlain by a renewed road surface, and a Constantian coin and some early 4th-century pottery was found.

The post-excavation photograph (ibid, pl vi: Fig 303) shows what was excavated and what left behind, and presents a rather odd picture to modern eyes. Over most of the area, the whole site was stripped down to the level of the earliest Roman surface of the turf milecastle phase. The ovens were left *in situ*. The structural features of the stone phase were also left, however, and two lines of upstanding square blocks can be seen where the stone packing at the bottom of the post holes for the stone phase building remained on 'islands'. Comparison between the height of these islands and the unexcavated ground suggests that the stone-packed post holes were not far beneath the plough zone, and it seems apparent that anything above this would have been totally removed by stone robbing and ploughing. In the distance on this photograph the base of the turf walls can be seen under the gravel make-up for the stone phase. The relative height of the bottom flag course of the wall suggests that the stone wall was cut into this gravel deposit, or alternatively that this deposit was laid down as surfacing within the walls of the stone milecastle after these had been built.

The evaluation

Two trenches were excavated. Trench 1 (8m × 2m) sampled the inner face of the east wall and part of the interior, while Trench 2 (4m × 2m) examined the milecastle towards the south-west corner.

Trench 1 (Fig 304)
This trench lay entirely within the area excavated in 1949, and could be precisely located with relation to the published plan (Richmond and Gillam 1952, fig 3). There had clearly been episodes of ploughing following the backfilling of the excavation, and the plough soil was on average some 320mm deep. Beneath this, in the north-east corner of the trench there was a small area of surviving stratigraphy that was higher than that in the rest of the trench. Comparison with other features soon showed that this was one of the islands upon which a stone-phase post-pad had been preserved. It was also apparent that the stones of the pad had disappeared; presumably displaced by the plough since 1949. The depth of the make-up for the stone phase could be established at this point as 430mm. It mostly comprised greyish gravelly soil, although there was some turf mingled with this towards the base. Over the remainder of the trench it was necessary to remove some 430–50mm of the very mixed backfill (302) of the earlier trench, down to the level at which excavation ceased in 1949.

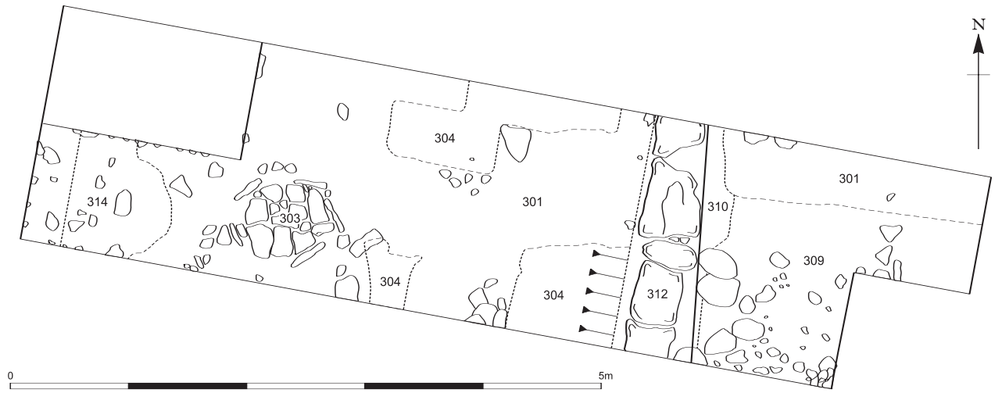


Fig 304
Milecastle 79: plan of Trench 2.

Apart from the 'island', the only other element of the stone phase to survive was part of the inner face of the east wall. During 1949, only the inner face of the wall was exposed when located. Only the bottom, thin flag foundation survived, and it was clear both that this wall had been robbed prior to the 1949 excavation, and that Richmond and Gillam had missed the robber trench (310; fill, 309).

Turf-phase features survived well. At the west end of the trench, a shallow area of disturbance (314) appears to have comprised the excavated butt end of the sinuous cobble-filled subsidence void. Immediately east of this was a sub-circular hearth (303), 800mm in diameter, comprising a floor of small sandstone slabs and several vertical edging stones. The hearth stones were scorched through use. Comparison with the plans and photographs of 1949 demonstrates that this was the hearth previously designated H2 (Fig 305, *compare* Fig 301). When first excavated this had lain beneath a later hearth (H4), which was clearly removed in 1949.

Finally, a pair of flagstones (313), one placed on edge, appears to have been all that survived of the flagstone stand or table. Beneath these features there was a layer of turf material (304), which can be identified as part of the turf and gravel platform upon which the milecastle was constructed.

Trench 2
Trench 2 was cut into the largely undisturbed western side of the milecastle. The plough soil was 300mm deep. The trench clearly confirmed the dimensions of the milecastle as established in 1949. The main feature in the trench was the turf construction of the south wall of the turf milecastle (304). This was cut to the south by an apparent robber trench for the later stone wall (307), the fill of which contained sandstone rubble (308). At the north end of the trench there was the cut of an archaeological trench (306), presumably from the 1949 excavation, although this was not recorded on the site plan.

Fig 305
Milecastle 79: photo of Trench 2 showing hearth 303, which is the same as the 1949 hearth H2 (compare Fig 301).

Finds

by P Austen and N Hembrey

No further Roman finds were recovered from this site, although 13 sherds of Roman pottery were recovered from the 1949 excavation backfill (Austen 2006).

Interpretation

The evaluation was successful in showing the accuracy of the previous results, and that the milecastle had not been extensively damaged by ploughing since the 1949 excavation. No further interpretation was possible.

Discussion

It is many years since a project of the multi-site scope of the Milecastles Project has been undertaken on the Wall. The practical work in looking at a series of different locations along the Wall was reminiscent of the tradition followed by Haverfield in the 1890s and Simpson in the 1930s, or by Birley in his work in association with the improvement of the Military Road in the same decade; the difference was in the aims. Previous scholars were choosing sites in an attempt to answer specific academic questions of the installations of the Wall, while the Milecastles Project was aimed at establishing preservation in order to facilitate the management of the World Heritage Site. However, the experience of working on the same question along the whole length of the monument helped those working on the Project to appreciate the scale of the Wall and forced them to think in terms of the whole monument rather than of individual, discrete locations. The Project provided the invaluable opportunity to compare and contrast similar installations on the ground in different places, despite the fact that a minimum of *in situ* stratigraphy was excavated. The Project enabled a more detailed range of points of discussion to emerge, as it forced the consideration of the observed similarities and differences between milecastles.

Milecastle locations

Apart from the milecastles in the urban area of Newcastle, the location of those east of the Irthing are well known. The same is certainly not true of those from Irthing to Solway, where the sites of Mcs66–70 are not the only uncertainly located sites. The projects reported in this volume show that the location of such sites by geophysical means needs to be tested and confirmed by excavation. Mc65 was located through geophysical survey (Bartlett 1976) and the identification was confirmed by trenching (Smith 1978, 35–6), but the attempts to locate Mc69 and Mc70 by these means failed. The geophysical locations of Mc58 and Mc59 in 1981 (Gater 1981) were confidently interpreted, although they remain untested (but for Mc59, see *Proc Soc Antiqs Newcastle* 1897, 220, where foundations were reported east of Old Wall), while the third confident location, of Mc62, has been confirmed by excavation. The tentative identifications of Mc61 and Mc63 must be regarded with circumspection, as the latter proved erroneous when tested. It seems probable that the reason for the failure to locate milecastles by geophysical means is the result of their being totally, or almost totally robed in antiquity. It is very unlikely that the incredibly sparse remnant of the robbed Mc71 would have shown in geophysical survey.

Order of construction

The issues of construction order recently raised by Symonds (2005) are relevant to Mc14. His contention that Broad Wall milecastles were completed early in the building of Hadrian's Wall at places of topographical weakness seems to be borne out. Mc14 is located adjacent to the valley of the March Burn, which could certainly be regarded as a possible point of concealed penetration, and the milecastle has broad walls on at least three sides. The nearest neighbours to east and west for which data is available, Mc13 and Mc17 respectively, had three narrow walls. It therefore seems likely, and is consistent with Symonds' thesis, that Mc14 was one of the early group of Broad Wall milecastles whose construction was strategically prioritised. Mc14 is the first short-axis milecastle to be identified with full broad perimeter walls, and this could be taken as further confirmatory evidence that all the building gangs started out building broad perimeter walls to milecastles, and that the appearance of narrow side walls can be linked to the reduction to the narrow gauge curtain (M Symonds pers comm).

These observations are important, as it is now possible that further examples of Broad Wall milecastles at such crossing points will be found. It is possible that the emphasis in the early construction of Mc47 and Mc48 (Symonds 2005; *above* p 139) was not so much to control the area between the Tipalt Burn and the Irthing, but to guard the potential crossing points afforded by the Tipalt (in the case of Mc47), and the deep defile of the Poltross Burn (in the case of Mc48). The Irthing gap would be adequately covered by the first milecastle of the Turf Wall sector, Mc49 (Harrows Scar).

Structural aspects

Recently, the evidence of the stonemasonry on the Wall has become prominent in the interpretation of aspects of the building of

the frontier (Hill 1991) in the Stone Wall sector. In particular, evidence for a change in standard in the masonry at Mc37 (Hill 1989; 1991) has prompted the acceptance that the same legion that finished a milecastle and that was therefore named on inscriptions, did not necessarily start the work (Breeze and Dobson 2000, 68). The evidence for a difference in stone-masonry quality in the north gate of Mc10 is tenuous, but may well be further evidence for the dislocation seen in other milecastles, as well as at Housesteads fort. This has been interpreted as representing a general pause in the construction of the forts and interval structures, possibly as a result of warfare (Breeze 2003b 14; Wilmott 2006c.

In the Turf Wall sector, two milecastles, Mc62 and Mc78, were excavated sufficiently for their dimensions to be estimated for the first time, although only in their stone-built incarnation. The external east–west measurement of Mc62 was estimated at 21.36m, while the length north–south would have been in the range 23–6m. Similarly Mc78 was approximately 19.2m east–west and 20.74m north–south externally. On these dimensions, both milecastles would have classed as long-axis. These measurements compare well with those of other Turf Wall milecastles (Table 3). In three cases (Mcs62, 71 and 79) it was demonstrated that the ramparts of the stone milecastle were built on the same lines of those of their turf-built predecessors, confirming the situation observed previously at Mc49 (Richmond 1956), Mc72 (Austen 1994) and, of course, Mc79 (Richmond and Gillam 1950). The southern corners of the stone Mc78 were rounded on the outside, but square on the inside. This pattern occurs relatively frequently, being recorded at Mc4? (Westgate Road), Mc35 (Sewingshields), Mc37 (Housesteads), Mc39 (Castle Nick), Mc42 (Cawfields) and Mc79 (Solway House), as well as Mc50TW (High House). The alternative treatment is to have rounded corners inside and outside as at Mc9 (Chapel House) and Mc10 (Walbottle Dene). There is no evidence that corner treatment is a factor in milecastle typologies as both types seem to occur with all combinations of axis and gate type.

Some evidence was gathered about the internal arrangements of milecastles. In Mc10 and Mc78 there were apparently ovens constructed in the south-east and south-west corners, respectively. Ovens in analogous positions occur in the south-east corner of Mc39 (Castle Nick) (Frere 1987, 316), the north-west corner of Mc47 (Chapel House) (Simpson *et al* 1936b, 270–2), and in multiple phases in the north-west corners of Mc48 (Poltross Burn) (Gibson and Simpson 1911, 429–33) and Mc50 (High House) (Simpson 1913, 332). At Mc35 (Sewingshields) (Haigh and Savage 1984) ovens or industrial activity of various periods has been found in the north-west, south-west and south-east corners, but not in the north-east corner; an oven was found and excavation outside the milecastle to the north-east. A similar external oven, in the same position, has been found at Mc40 (Winshields) (Simpson 1976, 93).

Table 3 Dimensions of milecastles in the Turf Wall sector for comparison with Mcs 62 and 78.

milecastle	*internal dimension E–W (m)*	*internal dimension N–S (m)*	*internal area (sq m)*
Mc49 (Harrows Scar) turf	18.29	16.45	300.87
Mc49 (Harrows Scar) stone	19.81	22.86	452.86
Mc50 TW (High House) turf	16.76	20.12	337.21
Mc50 (High House) stone	18.28	23.17	423.55
Mc52 (Bankshead) stone	27.50	23.39	643.22
Mc53 (Banks Burn) stone	21.94	23.39	513.18
Mc54 (Randylands) stone	19.58	23.62	462.48
Mc62 (Walby East) stone	16.55	?23.00–24.00	?388.93
Mc64 (Drawdikes) stone	17.83	14.78	263.53
Mc72 (Fauld Farm) stone	24.30	?	?
Mc73 (Dykesfield) stone	18.49	19.05	352.23
Mc78 (Kirkland) stone	14.60	18.20	265.72
Mc79 (Solway House) turf	14.71	12.34	181.52
Mc79 (Solway House) stone	17.52	17.52	306.95

Fragments of internal buildings were recorded in Mcs9, 14, 19, 62, 71 and 79. The widths of buildings, and their distance from the milecastle walls seem to vary very little as far as can be judged. The building in Mc14 was *c* 4.4m wide (externally), and *c* 1.2m from the milecastle wall. The foundations of the building were 760mm wide. This was comparable with Mc9, where the equivalent dimensions were a building 4.5m wide, with a gap between the building and milecastle wall of 1.02m and a superstructure width for the building wall of 540mm. The most likely reconstruction of the evidence for Mc62 would be a building 4.4m wide and a gap between building and milecastle wall of 1.2m; exactly the same as Mc14.

In Mc79 the timber building of the stone phase was 3.3m wide and 1.6m from the milecastle wall. No other set of measurements were recovered during the Project, although Mc19 had a building wall width of 560mm wide located 1.68m from the milecastle wall, and Mc71 had a wall width of 470mm located 1.04m from the milecastle wall. These dimensions are consistent with those known at other milecastles (Table 4).

In all cases examined, except Mc14, buildings were on the eastern side of the central road. In Mc19 the west side of the milecastle was cobbled, and it seems certain that there was no building here. Few milecastles have been sufficiently explored to establish whether they had single buildings or pairs. The only two known with stone buildings to east and west of the central roadway, apparently from the beginning, are Mc47 (Chapel House) (Simpson *et al* 1936b) and Mc48 (Poltross Burn) (Gibson and Simpson 1911), probably because these were built early for strategic reasons (Symonds 2005). Single buildings to the east of the roadway are attested for the primary Hadrianic period at Mc9 (Chapel House) (Birley 1930), Mc35 (Sewingshields) (Haigh and Savage 1984), and Mc50TW (High House) (Simpson 1913), although later alterations at Sewingshields involved building on both sides of the road. To this list of primary plans with eastern buildings can now be added Mc19 (Matfen Piers), which was truncated down to primary levels, and where both sides of the central road were sampled. At Mc37 (Housesteads) also, there was a stone-built structure on the east side with a timber 'shed' on the west (Daniels 1979, 165). At Mc39 (Castle Nick) the single primary barrack lay on the west side (Frere 1987, 316), and the same was true of Mc54 (Randylands) (Simpson and Richmond 1935a, 238–41).

There is clearly no consistency in layout, and the sizes of buildings also vary (Hill and Dobson 1992, 49), but the evidence would seem to indicate a slight preference for primary buildings to be erected on the east sides of the milecastles. There is no meaningful correspondence whatever between the position of primary buildings and the gate or axis type.

Table 4 Dimensions and locations of primary buildings within milecastles (excluding Mcs 47 and 48, each of which has two internal buildings).

milecastle	*9*	*14*	*19*	*35*	*37*	*39*	*50TW*	*54*	*62*	*71*	*79*
external length (m)	–	–	–	–	–	–	–	–	–	–	–
external width (m)	4.5	4.4	–	4.8	–	–	4.57	4.41	4.4?	–	3.3
distance from MC E or W wall (m)	1.02	1.22	1.68	1.18	–	–	0.82	2.19	1.2?	1.04	1.6
wall width (mm)	540	760	560	–	–	–	timber	–	–	470	timber
east or west side of road	E		W	E	E	E	W	E	E	E	E

Exterior areas of milecastles

Two sites have confirmed the existence of activity outside the walls of milecastles. At Mc9 an area of stone paving was provided outside the walls of the milecastle to the south-east, and a ditch to the east was certainly excavated at the same time as the building of the milecastle. The ditch does not seem to have encircled the installation and its purpose remains to be established. At Mc17, a number of cut features containing Roman pottery were identified outside the milecastle.

Excavations in the areas around milecastles have been rare, and the only other Roman structures known in such locations are the ovens found outside the north-east corners of Mc35 (Sewingshields) (Haigh and Savage 1984) and Mc40 (Winshields) (Simpson 1976, 86–95). The existence of the inscription at Mc19 prompted Birley (1932) to suggest either that the milecastle was turned over to religious use, or that there was a shrine outside. Other milecastles at which altars have been found have been listed by Breeze (2002, 60): Mc37 (Housesteads), Mc52 (Bankhead), Mc55 (Low Wall), Mc59 (Old Wall), Mc60 (High Strand) and Mc65 (Tarraby).

There is some evidence for the existence of cemeteries at milecastles. Previous work at Mc9 (Birley 1930a) produced the inhumation burial of a male youth close to the south wall of the milecastle and parts of two further bodies near the south-east corner. This was thought Roman by the excavator, although the possibility also exists that the burial was early post-Roman and therefore more akin to the long cists found alongside the Wall at Sewingshields (Crow and Jackson 1997) and Birdoswald (Wilmott 2000b, 15). Breeze (2002, 61), however, points out that there is no reason why a soldier could not die and be buried at a milecastle, invoking the tombstones found re-used in Mc38 (Hotbank), Mc42 (Cawfields) and Mc49 (Harrows Scar). The last mentioned (that of a child) may have been re-used from a cemetery of the nearby fort of Birdoswald, although it should be noted that the known cemetery is beyond the fort and civil settlement at a considerable distance to the west of the fort, while the milecastle is located to the east (Wilmott 1994, 84). One might assume that other sources of re-usable stone might have existed closer to the milecastle than the known cemetery. There is therefore a possibility either that Birdoswald was provided with an eastern as well as a western cemetery, or (and probably less likely given that this was the burial of a child) that the stone was evidence of burial related to the occupation of the milecastle.

Only at Mc62 was it possible to tentatively examine the question of access and egress northwards across the Wall ditch. Here, metalling was observed on the line of the projected site of the north gate. Similar metalling has been observed at Mc64 (Drawdykes), and classically at Mc54 (Randylands), where metalling ran northwards from the gate towards a probable ditch crossing, which was represented by the base of a culvert in the bottom of the ditch (Simpson and Richmond 1935, 236–44; Welfare 2000, 24). At Mc62 the metalling was relatively deep, and was hard and compact. It suggests a track running north, and should imply a ditch crossing. Interestingly Mc62 is one of the sites that Welfare (2000, 24), on earthwork and geophysical evidence, has recently proposed as having a primary causeway.

Post-Roman histories

Mc14 and Mc17 contained post-medieval buildings, probably field barns or similar structures. These join a substantial number of milecastles that accommodated later buildings. The best set of medieval buildings within a milecastle were found at Mc35 (Sewingshields) (Haigh and Savage 1984), while at Mc39 (Castle Nick) a building on the western side turned out to be a medieval milking house (Frere 1986, 378). At Mc49 (Harrow's Scar) a stonehouse is attested in the 1603 Survey of the Barony of Gilsland as the tenement of Henry Tweddle (Wilmott 1997a, 390); this was partially excavated and remains *in situ* (Richmond 1956). Excavations at Mc50SW (High House) recovered 17th- and 18th-century material (Simpson 1913, 312). Post-medieval houses are located in Mc52 (Bankshead) (Simpson and Richmond 1935c) and in Mc53 (Banks Burn) (Simpson and MacIntyre 1933a), and this may be the origin of the farm that occupies the site of Mc57 (Cambeckhill) (Daniels 1978; Whitworth 2000, 66–7).

In addition to these cases, Whitworth (2000, 66–7) lists, from cartographic and literary sources, cases where buildings have previously existed on such sites (Mc16 (Harlow Hill), Mc31 (Carrawburgh), Mc41 (Shield-on-the-Wall) and Mc51 (Wall Bowers), and we can add to this Mc47 (Chapel House) (Wilmott 2006b). It is clear from this that milecastles have been seen as enclosures within the post-Roman landscape that have afforded both shelter and materials for building in the form of re-usable stone, but that we know little of the nature of such re-use. Future work on milecastles will need to closely examine the upper deposits within these structures in order to secure full sequences of re-use, which might have been long and varied, as they were at Mc35 (Sewingshields) (Haigh and Savage 1984).

Preservation

The primary management aim of the Project was to demonstrate the state of preservation of, and the threat to

milecastles. The broad conclusion was that the state of preservation varied from site to site, and that no general rule or trend could be drawn. Only three sites, Mc9, Mc14 and Mc19, were being actively affected by continued ploughing. Mcs10, 62, 71, 78 and 79 were stable, having been ploughed in the past; in other words the plough damage that was going to occur had already been done. In the single case of Mc17, the downhill drift of soil during ploughing had served to protect the milecastle. It was clear that stonework from the western milecastles of the Wall has been robbed almost completely in the past. This was certainly true of Mc71, where only a few small stones survived, and was probably the reason for the failure to identify Mc69 and Mc70 through geophysics. It is apparent that individual threats will need to be addressed by separate management strategies and agreements on a site-by-site basis.

6
Excavations at the Hadrian's Wall fort of Birdoswald *(Banna)*, Cumbria: 1996–2000

by Tony Wilmott, Hilary Cool and Jeremy Evans

with contributions by: K F Hartley, Katie Hirst, Jacquline I McKinley, Quita Mould, David Shotter, A G Vince, D F Williams and S H Willis

Part 1: Introduction

The report on the major excavations at Birdoswald between 1987 and 1992 was published in 1997 (Wilmott 1997a). At the time, it was considered unlikely that further work on the site would take place for many years, perhaps for a generation or more. This was not the case however, and no fewer than five archaeological projects were undertaken in 1996–2000. The work was mostly carried out through the Centre for Archaeology and its predecessors (p 2–7), while projects not directly implemented by CfA were either funded by English Heritage, or carried out in close collaboration. This report is the final statement on these projects, and acts as a supplement to the 1997 publication. Some interpretations in the previous work are overturned, but in most cases conclusions are either confirmed and expanded, or revised and moved forward. Frequent reference to the 1997 volume is made throughout this report, and a summary site history is provided at the end to unify the results of all projects undertaken up to 2000 and to consolidate current knowledge. The introductory and stratigraphic sections have been written by TW, incorporating information from the work of the co-authors, whose free-standing sections appear in the report under their names.

The site

Topography and geology

Birdoswald, in Wall mile 49, is the eleventh fort from the east end of Hadrian's Wall, lying 5.2km from Carvoran to the east, and 11.2km from Castlesteads to the west (Fig 306). In addition there is a road connection, the Maiden Way, to the outpost fort of Bewcastle 9.6km to the north. The fort is situated on a high spur contained to the south by a broad meander of the River Irthing. The underlying geology of the spur consists of the Upper Border Group of Carboniferous sedimentary strata, including crinoidal limestones, dark-blue shales and grey-white micaceous sandstones, of which a (now outdated) subdivision is known as the Birdoswald Limestone Group (Turner 1971, 52). These rock types were all utilised as building materials on the site, and can be seen as exposures in the sides of the Irthing Gorge. It is probable that the river cliffs below Birdoswald fort were used as quarries during the Roman period as was the case a little farther downstream at both Coombe Crag and Lanerton, where Roman quarry inscriptions have been noted (Hodgson 1840, 440; RIB 1946–52; Collingwood 1930, 120; Hassall and Tomlin 1992, 316–7). The site lies above two clear north–south faults in the underlying geology.

The upper drift geology consists of a thick deposit of pinkish boulder clay, the white weathered surface of which forms the natural subsoil of the site. Modern profiles developed over these clays comprise fine loamy mineral soils known as stagnogleys (Avery 1980; the Salop series after Kilgour 1985). These soils are typically subject to periodic wetness in their surface horizons, attributable to a combination of relatively high rainfall (900–1,000mm per annum) and impermeable boulder clay at depth. Modern topsoils are only slightly organic and are moderately acid. Surface wetness precludes widespread cultivation and most areas are utilized for permanent grass, pasture and rough grazing. An important element of the microtopography of the spur is a dip of unknown extent, which occupies the centre of