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Hadrian's Wall: Some Aspects of its Execution*

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OF THE many thousands of words expended on descriptions of and reports of excavations upon Hadrian's Wall, comparatively few attempted any technical description of the level of masonry skills and of their traces remaining in the fabric. Even more rarely has the effort been made to relate accurately such description as we have to the technical terms already available in the building industry. Collingwood Bruce began what is perhaps the most pernicious inexactitude by describing the wall as consisting of "carefully squared freestone blocks", while cheerfully admitting in a footnote that "It would be described by a modern builder as a rough blocking course".[1] Reference elsewhere to squared rubble as "ashlar" is equally inexact, and actively misleads; the indiscriminate use of this comfortable, technical-sounding term is not unlike describing all darkish potsherds as "black fumed ware", and is about as useful as it is accurate.

This paper looks briefly at what evidence might be available from a stonemason's view of various parts of the wall, and also reviews the order in which some of the works might have been undertaken and by whom, showing some established theories in a new light.

THE CURTAIN WALL AND THE GATEWAYS

The squared rubble facing stones from the Wall all have a strong resemblance one to another and as the product of semi-skilled legionaries turning them out in their hundreds of thousands, have comparatively little to tell us; any variations from the norm are very often likely to be due to lack of skill, lack of initiative, or sheer boredom. The variations however are worth noting simply because they exist; later generations of scholars may as a result recognize patterns of work which are not now apparent. There are many more obvious tool marks visible than the occasional mention of "diamond broaching" suggests, and the near-random rubble which appears in the wall running west down to Willowford is a marked departure from the "tolerably uniform" (*sic*) appearance of other parts of the wall. It is true however that in the present state of knowledge one quickly reaches the limit of what the facing stones may reveal.

The milecastle (and fort) gateways, on the other hand, are set apart from the remainder of the wall by the techniques of stone dressing and building used therein. Unlike anything found in the curtain wall and turrets the responds tend to be of large blocks of stone, weighing typically 2–300 kg, dressed with some degree of care and showing a measure of skill which is lacking elsewhere. Here for the first time we see carefully worked beds and joints, giving mortar joints of only a few millimetres;[2] faces worked to a rectangular elevation; marginal drafts around at least some of the faces which, although usually more or less rock-faced, are frequently worked with their appearance in mind; and quoins which form more or less right-angles. It is true that not all these characteristics are present in every case but all the gateways have some pretensions to quality and were clearly worked by men having had at least some training in masonry skills and who were aiming for an identifiable standard.

The variations in execution, if analysed, may yield important clues as to the spirit and direction of the work; the reasons are sometimes clear and sometimes not. At milecastle (hereafter MC) 48 the stone is a somewhat slatey carboniferous limestone which it would have taken an army of well motivated skilled

men a long time to bring to a satisfactory standard, and in practice it is easily the worst worked gate on the wall. The stone, quarried from the outcrops along the nearby Poltross Burn, does not lend itself to high class work and appears to have been used because it was available very close at hand. There is no evidence that the army was prepared to go to the trouble of transporting better stone simply for the sake of appearances. The appearance of the stone as it left the mason may not have been particularly important if the wall were to be whitewashed or rendered,[3] but this stone at least was not "carefully selected" and it would have taken a very heavy coat of rendering to present anything like a smooth surface. The recent excavation of the northgate of milecastle 37 has not produced evidence of whitewash on the stones of the piers, and the dressed stone of the arcuate window head from the west gate of South Shields (admittedly probably of Antonine date) had 'voussoirs" marked out in limewash, with the rest of the stone left unpainted.

At MC 39, where the stones of the responds are somewhat smaller than elsewhere, the work is good and there seems to have been an attempt to produce smooth-faced ashlar with a much more refined appearance than at MC 37. Although the lower courses[4] of the north gate of the latter exhibit a considerable degree of skill, the builders were content to leave a heavily tooled or a rock face. MC 42 shows less care with the finished product than MC 37 which it otherwise resembles, although there may have been no less degree of skill present.

Working from old photographs is not entirely satisfactory, especially as it is rare for any detail to be shown, but it seems that of four eastern milecastles with the same plan as MC 37, numbers 13[5] and 17[6] have a family resemblance to but are cruder in execution than MC 37, while MC 18, as noted by the excavator,[7] is ". . . rougher and less imposing than other gateways of this type". MC 22[8] has a stronger affinity to MC 37, the south elevation of the north gate appearing, *pace* the excavator, to be of a fair standard, although the passage walls are little more than squared rubble. While it must be said that there is no clear definitive basis from the back-filled excavations for the above remarks, it does seem that there may be a greater significance in the variations than is generally recognized. Intractable stone apart, it seems that the finish of the work may have been at the discretion of the centurion in charge; certainly in the present state of knowledge there seems to be no correlation between surface finish and legionary planners. It may one day be possible to identify the work of individual gangs or even individuals, but much more work will be necessary, including re-excavation, before any realistic pattern of building can be established.

It has been shown[9] that masonry with any pretensions to quality has characteristics which can be compared with some degree of objectivity. It is at least as important to recognize the differences in quality of the workmanship as to recognize similarities of style or design. Identifying and appreciating the differences in quality can sometimes be revealing, or at least raise questions to which answers may be sought. The west gate at Housesteads, often spoken of in glowing terms, is distinctly badly finished, and indeed one has the feeling that it was never finished as intended. At Birdoswald, the incongruous masonry adjacent to the west gate is quite unlike anything else seen on the Wall and of much higher quality than the Wall facing stones; it is the only example of ashlar walling anywhere along the Wall, yet close examination shows it to be less good than a first glance would suggest. The three or four stones remaining of the ashlar piers at Benwell Vallum Crossing are of a higher class altogether, especially when compared to the gate piers of the primary forts; so much so that one might be tempted to suggest that it was built for Hadrian's inspection, assuming that the Wall was not begun during or consequent upon his visit in 122.

It is at least conceivable that the high quality of the gateway is due to it being built to Hadrian's direct order, if one follows C. E. Steven's scheme[10] of the Wall beginning under Pompeius Falco and modified by the addition of the Vallum and forts during the Emperor's

inspection. This hypothesis would require the Sixth to arrive in Britain in 122 during the building, and for the inscription over the gate of MC 47[11] to have been cut in an interregnum between Falco and Platorius Nepos.

Work of the sort seen at Benwell was the standard against which the builders of the better parts of Hadrian's Wall, that is the gateways, were ultimately measuring their efforts, although clearly there was a deliberate decision, or a series of separate decisions, not to achieve the ultimate. Some light may be shed on this by the examination of surviving masonry.

CHANGES TO THE BUILDING PROGRAMME

It has long been recognized that there was a serious dislocation of the programme of work on the Wall, and at MC 37 we seem to have positive evidence of the point at which it occurred. The south gate had probably been started, for it is of the same plan as the north gate, but it is so ruinous that extent of progress cannot be determined. However that may be, it is clear that work on the north gate was begun, was halted for an indeterminate period,[12] and was completed by a second gang who were less concerned about the appearance of the finished work.[13] That the halt in work came before the building of the north wall had properly begun is shown by the tapering reduction from broad to narrow; for the narrow wall builders to have removed large areas of existing masonry in order to taper the wall is unparalleled and in any case inconceivable.

It is very doubtful whether the putative buttresses[14] visible to the east and west of the gate on the south face of the north wall were ever intended to support the gate while it stood alone before the Wall builders arrived. The western "buttress" does reach to the top of the impost cap, but the eastern one appears only in the lowest two courses. Even if we allow the arch to have been built before work stopped, the thrust from the arch would very easily have been resisted by the massive piers. Allowing that the Romans may not have been aware of this, the western "buttress" would have had little effect, and the eastern one none at all. In fact, the greatest danger from such an isolated arch would be the sliding of the mortar between the springer and the cap. Neither "buttress" reached high enough to alleviate this, and in any case, as will be shown, it is highly unlikely that building had progressed that far before dislocation.

The change in appearance of the work on the gate is quite marked. Although full details of the dressing of the stone appear elsewhere,[15] it may be said here that the quoins of the south east pier, the first two courses of the south west pier, the bottom quoin of the north west pier, some work to the north east pier, and one or two stones of the passage walls, belong to the work of the first gang. These stones show good chiselled margins, a reasonable squareness of quoins, and a regularly tooled if boldly finished face; they amount to about twenty per cent of the work on the piers and passage walls, clearly insufficient to allow erection of the arch. In the upper courses the work becomes ragged and half finished in appearance; there is a slap-dash, never-mind-the-quality-feel-the-width air about it. The difference is such that we must look for a reason. The marked carelessness of the later work suggests not merely a change of gang, but that the desire to see the job finished had become the more important factor.

First conclusions might suggest that the extra work generated by the decision to place forts on the line of the Wall is an attractive and sufficient reason for the lowering of standards, and yet there is no need for extra work, of itself, to lead to this drop. The legions were not working to fixed completion dates regardless of job content, and if the Wall were indeed not finished until 128, as the inscription from Greatchesters has been held to suggest,[16] then there should have been time to complete the Wall to the original plan and standard. The addition of the forts is in any case likely only to have slowed work on the curtain wall for about one season.[17] Extra work does not explain what seems, to the present writer at least, an abrupt change of policy which was over and

above the reduction in gauge. Speed seems to have taken a higher priority.

It may be significant that the change in standard at MC 37 seems to be matched at Housesteads fort. At the north gate, the foundations are very well built with carefully dressed stones not unlike the early work on milecastle 37, while the upper courses are markedly less good, even allowing for the difference in exposure to the weather. There is a hint of a similar change at the west gate, where the start of the north west pier is markedly better than the remainder and the north east pier has smoothly worked faces quite unlike the rest of the gate. It does appear that at some point early in the fort building programme there was a change in outlook on the part of the planners and/or builders which affected all structures on the wall. The reasons are to seek: it cannot have been a change of governor, for Nepos is included on the inscription from MC 37;[18] did Hadrian after all make his visit when work was already under way, following which standards could be relaxed? or was there fighting during construction as C. E. Stevens suggested,[19] resulting in battle weary troops finishing off a project of which they had already seen quite enough? There are many possibilities.

THE EVIDENCE OF INSCRIPTIONS AND THEIR LOCATION

There is a further complication following upon a recognition of two standards of workmanship in the north gate of MC 37. The inscription of Legion II from MC 37 was cut and fixed by a gang finishing off the work of an earlier gang, which was not *necessarily* of the same legion; it was certainly not erected by the gang which began the milecastle, for not until the superstructure had been finished would the inscription have had any visible means of support. One may argue that the inscription was cut in advance by the first gang, but to show that it was then fixed by the second gang one would have to prove on non-epigraphic grounds that the two gangs were from the same legion. One cannot imagine the Parachute Regiment completing 90% of a building and yet using a dedication prematurely provided by the Tank Corps who were responsible for laying the foundations. Inter-unit rivalry was no doubt as strong in the Roman army as it is today. Even if the inscription had been fixed directly above the arch ring, and on aesthetic grounds it would most likely have been placed at least one course above the crown of the arch, the slab height of 2′ would necessarily have raised the level of the string course to at least 15′ 8″ (sixteen Roman feet). Inscriptions were much more likely to have been placed above the string course and thus built into the north wall of the gate tower rather than into the curtain wall. To achieve this, it would be necessary to build up a considerable amount of masonry on each side of the gate and to begin the building of the tower and, however one views the "buttresses", it is clear that work here had not reached such a height before the break in work. The most likely explanation of the "buttresses" is that they were built at the same time as the piers as part of the bonding-in to the future north wall of the milecastle, and as such are better referred to as "wing walls". Their inequality of height suggests that the south western pier had been built up to the impost cap while only the first course of the south east pier had been laid. It is quite possible that the wing walls were built by the second gang as they completed the building of the piers, and that the decision to narrow the wall was distinct in time from the general dislocation of work. The remaining stones which the first gang had worked (see page 35), or begun to work, would have been finished and fixed by the second gang; it would after all be surprising if the first gang had fixed every stone which they had worked. The erection of the rest of the piers, the arch, superstructure, and inscription relates to the building of the narrow wall and not to the work of the first gang. Legion II was the legion responsible for completing MC 37, and while it has been argued that the Twentieth[20] or the Sixth[21] may well have been finishing work in the central sector during or after

dislocation, it is now clear that the Second legion were also doing much the same thing at MC 37, and perhaps elsewhere.

The two gangs working at MC 37 may very well have been from the same legion, but in the light of the long held view (even if there are differences about the reasoning) that this gateway was only half built at the time of dislocation and that another legion or legions moved into the central sector to complete milecastles, turrets and curtain while one or more legions concentrated on fort building, the possibility cannot be regarded as a certainty. The similar inscriptions from milecastles 38 and 42[22] do not confirm Legion II as the designer of short axis milecastles as there is no evidence of the height to which they had reached at the point of dislocation. They both have abrupt points of reduction in the curtain wall beyond the east and west walls which indicate that a greater height could have been reached, but there is a similar point of reduction at T 26b, if not so high, and it has been shown that not only had the turret not been raised more than five feet before dislocation, but also that it is very unlikely that any structure was built to any greater height before the arrival of the curtain wall builders.[23]

It is quite possible that completion of the north walls of MCs 38 and 42 to broad gauge could well have been carried out after the decision to narrow the wall had been made known to the builders. The north wall of MC 37, of which only a few stones had been laid, could be tapered without any obvious inequalities on the south face; if, in the other milecastles, several courses had been laid, reducing the gauge would have left a marked step which might have been inimical to the military mind. This might be thought fanciful, but it is noteworthy that in no surviving milecastle or turret, apart from the taper in 37, is the reduction in gauge carried out within the structure. It should be noted that it would not have been possible to reduce the length of either type I or III gateways to match the reduced gauge of the Wall, as the rear responds would have made opening of the doors impossible, and of course the original length would be needed in order to maintain the size of the gate tower.

The milecastle inscriptions were not the product of well trained letter cutters. The form of the lettering on the inscriptions from milecastles, 37, 38 and 42,[24] is of an individual nature, and all have such a very strong family likeness that the certainty must be that they were cut by the same man; moreover it is also obvious that he had not received formal instruction to any great degree for the work is ill-spaced and inelegant. Now, in this kind of manual skill the work of a properly trained man can be picked out from that of a dozen others on the basis of his style; even the very chiselling on the face of a piece of ashlar can be sufficient to identify a particular stonemason simply because he always holds the chisel at the same angle and swings his hammer or mallet with an individual beat. The style of an ill-trained man varies much more from day to day, and this characteristic is more noticeable the more elaborate the work: there is a strong possibility that all the inscriptions referred to were cut at about the same time. If it is agreed that MC 37 was completed after dislocation, it seems very likely that MCs 38 and 42 are also post-dislocation in their dedication[25] and superstructure.

It could be argued that RIB 1634 came from the south gate of MC 37, but in those cases where the milecastle was not begun as a unit the evidence points to the north gate being built first, and the side walls and south walls, (and therefore the south towers) being built later.[26] It would require special pleading in the case of MC 37 to change the normal sequence.

The difficulty of determining, from the evidence of dedicatory inscriptions, the identity of the legions responsible for the several milecastle designs also obtains in the case of turrets. By way of example, turrets with narrow side walls and eastern doors were assigned by C. E. Stevens[27] to the Twentieth legion. During the excavation of a turret of this type, T 33b (Coesike),[28] a building stone of the Sixth legion was found re-used in the later building-up of the recess, and this was taken by Breeze and Dobson[29] as evidence supportive of the

reversal of legionary milecastle types. But, as noted earlier, it has been demonstrated[30] that the existence of low wing walls (in this case a height of only five courses)[31] over-ridden by narrow curtain wall means that the turret cannot have been built to a height of more than a very few feet before dislocation. The building stone, as the excavator suggests, must have come from the demolished superstructure and must therefore relate to the legion which *completed* the building of the turret after dislocation, not the one which designed it—of course they may be one and the same but there is no direct evidence for this. Centurial stones are evidence only for the legion which built the wall immediately around them, not for the legion which laid the foundations.

CONCLUSIONS

On the basis of the evidence put forward above, the assignment of short axis milecastles to a particular legion must depend on which of the following possible courses was the more likely. Either the Second legion was in this area finishing off structures begun and therefore designed by another legion, or they began only these four milecastles in the central sector (one pair separated from the other by three miles), and then after dislocation came back to finish the same four structures while the Twentieth (or the Sixth) legion finished off the work around and in between them.

The latter opinion, at first sight unlikely, is at least conceivable. Although there may well have been a detailed plan when the Wall was started, this would in the natural course of events have suffered as time went on and work in different areas went faster or slower than the predicted timetable. Add to this the effect of building the new forts, and the original allocations of geographical areas to legions would have become so much waste paper.

In these conditions it would not be surprising to find legionary gangs directed to wherever was most expedient rather than in accordance with a strict schedule, and even if the Second legion were building forts, (for which there is no epigraphic evidence) part of the legion may have been completing structures which either they or another legion had started. Legion II may well have designed short axis milecastles, but the present evidence does not prove this. What is needed, and what we are unlikely to find, is evidence of which legion *began* the building of each type of milecastle.

It may be that we have been inclined to assume too much rigidity both of plans and changes of plans. There are plenty of stories of modern armies doing the wrong thing in the wrong place at the wrong time, and it is not unknown for modern buildings to be put up in the wrong place or facing the wrong direction. Why should we expect the Roman army to reach a higher degree of organizational success? The real surprise is not that their plans went awry, but that the Wall ever approached completion. As C. E. Stevens so pertinently remarked, ". . . [one may wonder] whether Hadrian, the staff and the soldiery had not got tired of Hadrian's Wall by the time it was finished".

NOTES

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[1] J. Collingwood Bruce, *The Roman Wall* (1851), 82.

[2] At any rate when seen prior to some of the atrocities perpetrated in the name of "consolidation".

[3] Charles Daniels (ed.), *The Eleventh Pilgrimage of Hadrian's Wall* (Newcastle-upon-Tyne 1989), 51. The "whitewash" may be the result of sloppiness of both mortar and workmanship.

[4] See page 35 and note 15.

[5] *AA*[4] viii (1931), plate lxi facing p. 327.

[6] *AA*[4] ix (1932), plate xxxviii facing p. 258.

[7] Ibid., p. 257 and plates xl, xli facing p. 258.

[8] *AA*[4] viii (1931), 317–8 and plates lviii and lix facing p. 237.

[9] P. R. Hill, "Stonework and the archaeologist", *AA*[5] ix (1981), 1–22.

[10] C. E. Stevens, *The Building of Hadrian's Wall* (Titus Wilson 1966), 39.

[11] *RIB* 1852.

[12] P. Hunter Blair, "Housesteads Milecastle", *AA*[4] xi (1934), 110.

[13] Hill op. cit., 18–21.

[14] Hunter Blair loc. cit. and plate xviii. See also, following the recent excavation of the north gate, the new elevation drawing and phasing of the south face, J. G. Crow *Housesteads Roman Fort* English Heritage (London 1989), pp. 32–33.

[15] See Hill op. cit., and *Excavation and Survey, Steel Rigg to Housesteads*, J. G. Crow (forthcoming), which will contain detailed reports on the masonry of milecastles 37 and 39.

[16] *RIB* 1736 and C. E. Stevens op. cit. 54, but for a contrary view see *Britannia* xv (1984), 234–5.

[17] P. R. Hill, "Construction of Hadrian's Wall", forthcoming.

[18] *RIB* 1634.

[19] op. cit. 52–3.

[20] J. Hooley and D. J. Breeze, "The building of Hadrian's Wall: a reconsideration", *AA*[4] xlvi (1968), 108–9.

[21] David J. Breeze and Brian Dobson, *Hadrian's Wall* (3rd edn. 1987), 75.

[22] *RIB* 1637, 1638, and 1666. M/C 41, the other short-axis milecastle in this group, has not yielded any inscription. On the argument here presented it would not greatly matter if *RIB* 1638 had come from milecastle 39.

[23] P. R. Hill and B. Dobson, "The Design of Hadrian's Wall and its Implications", (forthcoming).

[24] *RIB* 1634, 1637, 1638, 1666.

[25] See note 23.

[26] E.g. milecastles 9, 13, 17, 18, 19, 20, 22, 27, 41, 42. For a convenient summary see R. Hunnysett "The Milecastles of Hadrian's Wall: an alternative identification", *AA*[5] viii (1980), 95–107.

[27] op. cit. 11.

[28] R. Miket and V. Maxfield, "The excavation of Turret 33B (Coesike)", *AA*[4] l (1972), 152.

[29] Breeze and Dobson op. cit. 68–9.

[30] P. R. Hill and B. Dobson, "The Design of Hadrian's Wall and its Implications", (forthcoming).

[31] *AA*[4] l (1972), 152.