

III.—FORT TYPES ON HADRIAN'S WALL¹

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Abbreviation employed in the text:

RHW *Research on Hadrian's Wall* by Eric Birley (Kendal 1961).

In his Albert Reckitt Archaeological Lecture *Roman Britain and Roman Military Antiquities* the late Sir Ian Richmond offered several type-sites in Britain for the six different sizes of auxiliary units.² Though there have been objections to individual forts there has been no general reconsideration³ and on the whole Richmond's scheme retains universal approval. What is offered below is a reconsideration of the type-sites suggested by Richmond, an examination of the basic principles governing the size and dimensions of forts and the barrack and stable accommodation, and a study of certain forts on the Hadrianic frontier in the light of these principles. The reasons for choosing this group of forts will be discussed below.

We would like to thank Professor Eric Birley and Dr. J. C. Mann, who read this paper in draft, for their constructive comments and criticism.

It is necessary first to examine the different auxiliary units and their organisation and the implications of this for their accommodation. The organisation of auxiliary units is discussed by an anonymous Latin author, once thought to be Hyginus, in the work known as *de munitionibus castrorum*. This document is probably dated to the sole reign of Marcus

¹ For a bibliography of Hadrian's Wall see *RHW* and the *Handbook to the Roman Wall* by J. C. Bruce, 12th edition, edited by I. A. Richmond.

² I. A. Richmond, *Roman Britain and Roman Military Antiquities*, Proceedings of the British Academy 41 (1955) 297-315.

³ For the latest discussion cf. G. Webster, *The Roman Imperial Army* (London 1969) 205-213.

Aurelius, 169-180,⁴ about 50 years later than the building of Hadrian's Wall, and it is possible that there were, in the intervening period, unattested changes in the size of auxiliary units. However, this is unlikely since Hadrian himself was responsible for a number of army reforms and there is no evidence to suggest that there were further major reforms in the following half century. The figures given in *de munitionibus castrorum* are therefore accepted as those of the Hadrianic period. The following table summarises the number of centuries and/or *turmae* in each unit and the number of barracks each unit would require.⁵

Table 1 UNIT STRENGTH

unit	number of centuries	<i>turmae</i>	number of barracks ⁶
<i>cohors quingenaria peditata</i>	6	—	6
<i>cohors quingenaria equitata</i>	6	4	8
<i>cohors milliaria peditata</i>	10	—	10
<i>cohors milliaria equitata</i>	10	8	14
<i>ala quingenaria</i>	—	16	8
<i>ala milliaria</i>	—	24	12

Four of the six types of auxiliary units contain cavalry and therefore require stables.⁷ There are, however, a number of

⁴ E. Birley, *Alae and Cohortes Milliariae in Corolla Memoriae Erich Swoboda Dedicata* (Graz 1966) 57.

⁵ For recent discussion on the number of men in each unit see E. Birley, *ibid.* 54 and R. W. Davies, *A Note on a Recently Discovered Inscription from Carrawburgh in Epigraphische Studien* 4 (1967) 108-111.

⁶ It is usually considered that two *turmae* were housed together in one barrack block. Each block usually contained 8 *contubernia*; this is best demonstrated at Corbridge (unpublished). Here it appeared that a barrack, in which the men's quarters occupied 120 feet, was originally divided into 8 *contubernia*. This arrangement was later modified to produce 10 *contubernia*, occupying the same 120 feet. The sequence appears to be *ala quingenaria* followed by *cohors milliaria*.

⁷ Each unit must also have had mules and other draught animals but since this is a factor common to every unit the accommodation for these animals will not be discussed here. It is possible that the long buildings about 16 to 19 feet wide found in such forts as Halton Chesters and Birdoswald on the Wall are stabling for such animals.

problems concerning stables: no building in a fort has been fully excavated and recognised as a stable while the number of horses and the amount of stabling required by each *turma* is not certain. On the basis of excavations at Halton Chesters, Carzield and Benwell Richmond evolved the theory that a barrack block for two *turmae* of 30 or 32 men each would require a stable block of the same size, with the result that the 70 or so horses in the stable would each be allotted an area approximately 12 feet by 4 feet.⁸ The calculation agrees closely with the situation at Gellygaer.⁹ Nevertheless problems do remain: it is not known how many remounts would be needed by each *turma*, nor, as will be discussed below, is the identification of stable buildings entirely satisfactory. In spite of these problems Richmond's conclusions as to the space required for one stable are acceptable on present evidence. The amount of stabling needed for each mounted unit or unit containing a mounted section can therefore be calculated.

Table 2 STABLES AND BARRACKS

unit	number of stables	number of barracks	total number of barracks and stables
<i>cohors quingenaria peditata</i>	—	6	6
<i>cohors quingenaria equitata</i>	2	8	10
<i>cohors milliaria peditata</i>	—	10	10
<i>cohors milliaria equitata</i>	4	14	18
<i>ala quingenaria</i>	8	8	16
<i>ala milliaria</i>	12	12	24

It is now necessary to discuss Richmond's type-sites before proceeding to examine the Wall forts.

⁸ For the best statement of Richmond's theory cf. *AA*⁴ xix 30-33.

⁹ J. Ward, *The Roman Fort at Gellygaer* (London 1903); cf. also discussion below.

cohors quingenaria peditata

Gellygaer 3.67 acres: There are six clear barracks and a number of other buildings in this fort. It is possible that Building IV in the *retentura* is a barrack block for two *turmae*. Building IX appears to be a stable and on the accepted Richmond calculations it would hold the horses of two *turmae*. It therefore seems likely that the fort was built to house a *cohors quingenaria equitata*, as Dr. Graham Webster has recently suggested.¹⁰ If this is the case the unit could only have contained two *turmae*, and not the four mentioned in *de munitionibus castrorum*. It is possible that a *cohors quingenaria equitata* originally did contain two *turmae* and that the number was increased to four under Trajan or early in the principate of Hadrian, though there is no evidence to support this supposition. Alternatively the unit for which the fort was built may have been of an experimental size. Clearly, however, the fort cannot be used as a type-site.

Beckfoot 2.55 acres: The aerial photographs of this fort suggest that it was built for a *cohors quingenaria peditata* since it only appears to contain six barrack blocks. By careful comparison of the plan of the fort as revealed by the photographs and the known dimensions of the fort the approximate length of the barracks can be ascertained—about 133 feet. The date of the barracks is not known and it is possible that the original ones were timber—Hadrianic timber barracks, or possibly stables, are known at South Shields and also probably at Carrawburgh.¹¹ This would help to account for the shortness of the barracks and may imply that stone forts for this size of unit are normally a little larger (*cf.* Fendoch and Housesteads below).

¹⁰ G. Webster, *The Roman Imperial Army* (London 1969) 206.

¹¹ D. J. Breeze, *Excavations at South Shields 1966 and 1967* in *Archaeological Newsbulletin* no. 50 published by Durham University Department of Extra-Mural Studies; D. J. Breeze, *Excavations at Carrawburgh in 1967* in *Archaeological Newsbulletin* No. 48 published by Durham University Department of Extra-Mural Studies.

cohors quingenaria equitata

Caerhun 4.86 acres: There appear to be 10 barracks of equal size in this fort, suggesting that it was built for a *cohors milliaria peditata* and not a *cohors quingenaria equitata*.¹² The barracks are c. 170 feet long, more appropriate for a *cohors milliaria* than a *cohors quingenaria* (see below).

cohors milliaria peditata

Fendoch 4.5 acres: The 10 barracks in this fort suggest that it was built for a *cohors milliaria peditata*, though the differences between the barracks in the *praetentura* and those in the *retentura*, in the position of the internal walls of the *contubernia*, pose a difficult problem. The internal buildings in this fort are in timber, and the barracks are 154 feet long.

Housesteads 5 acres: There appear to be eleven barracks in this fort, not the ten expected in a fort for a *cohors milliaria peditata*; however, it is difficult to see what other unit the fort could have been designed to hold. The internal buildings are built in stone and the barracks are therefore a little longer than those at Fendoch, being 162 feet in length. The one excavated in 1959-1960 by Dr. J. Wilkes had 10 *contubernia*, the correct number for an infantry barrack.

cohors milliaria equitata

Birrens c. 6 acres: There are a number of unexplained peculiarities about the plan of this fort; for example both the headquarters building and the barracks are very small, indeed the latter are only 140 feet by 20, much too small for an infantry unit and probably also too small for cavalry. The fort is so untypical that it cannot be used as a type-site.

Glentworth 8.3 acres: The internal layout of this fort is only known from an aerial photograph and slight trial excavations and no conclusions can yet be reached about the original garrison of the fort.

¹² Substantially the same point is made by G. Webster, *The Roman Imperial Army* (London 1969) 206-7.

ala quingenaria

Chesters 5.75 acres: The original garrison of this fort is not known. On the basis of its similarity to Benwell it is usually assumed that Chesters was built to house an *ala quingenaria*, but Birdoswald, also similar in dimensions,¹³ appears to have been built for a *cohors milliaria*. This argument therefore lacks validity. It has also been suggested that forts projecting north of the Wall were designed for cavalry, but the authors prefer the Richmond explanation that all forts in the original Hadrianic scheme projected north wherever possible.¹⁴ The barracks at present visible at this fort almost certainly are not Hadrianic but their length of c. 160 feet is probably little different from that of the original ones, which would be more appropriate for a milliary cohort than a quingenary *ala*. The forts for a *cohors milliaria equitata* and an *ala quingenaria* must have been about the same size since they contained respectively 18 and 16 barracks and stables. Since the number of primary buildings of this nature in the fort is unknown it is impossible to determine the size of unit for which the fort was built.

Benwell 5.6 acres: The only excavated barrack, or rather barracks since the block was double with the two barracks back to back, is 150 feet long. It has nine *contubernia*, an infantry barrack usually having 10 and a cavalry one 8. The excavators suggested that each barrack was intended to house two *turmae* with the extra room for the NCOs. Nevertheless, the building is about 10 feet longer than the barracks at both South Shields and Carzield, the extra length being almost exactly taken up by the ninth *contubernium*. The reason for the additional length is unknown unless it was due to different units building to different designs. The excavators presumed that two other buildings

¹³ For an alternative explanation of the similarity in size and dimensions of these three forts see Appendix.

¹⁴ J. C. Bruce, *Handbook to the Roman Wall*, 12th edition, edited by I. A. Richmond, 24-25; for the alternative view cf. Brenda Swinbank and J. E. H. Spaul, *The Spacing of the Forts on Hadrian's Wall*, *AA*⁴ xxix 232-233.

in the *retentura*, both c. 154 feet long, were stables, though they admitted that there was little evidence to support this supposition. In fact their assumption seems to be mainly based upon the variation in the width of the rooms in the western of the two blocks and the absence of any indication at the west end of the block of accommodation for decurions or centurions, though the negative evidence was not decisive. These two points do not prove that the buildings were stables and against them it could be argued that in the plans of both there appear walls reminiscent of those dividing the front and back rooms of *contubernia*. Even if the western block could be accepted as a stable, which is not proven, there is so little known of the plan of the eastern that it is not possible to determine the function of the building. In short the plans of both these buildings at Benwell present conflicting evidence and cast some doubt upon the confident assumption that the fort was intended to be garrisoned by an *ala quingenaria*. There is, moreover, a further problem at the fort, foreseen by the excavators, but not answered by them.¹⁵ If the fort was built for an *ala quingenaria* it would have to be large enough to hold 16 barracks and stables, but the fort as planned by Simpson and Richmond is too small for this. The *retentura* of the fort holds six such buildings, with the space available for two others taken up by administrative buildings. The *praetentura*, as planned by the excavators, is only as large as the *retentura* but is expected to hold ten buildings as opposed to a maximum of eight in the *retentura*. It would appear that either the fort is larger than the excavators considered it to be, or its original garrison was not an *ala quingenaria*. The problem seems to be unanswerable on present evidence.

Carzield 6.4 acres: The one excavated double barrack at this fort is 142 feet long and appears to have been built for four *turmae*. There is room in the fort for eight double buildings, the total necessary for an *ala quingenaria*. The

¹⁵ AA⁴ xix 29 cf. n. 97.

building next to the double barrack was interpreted by the excavators as a stable. Although this interpretation is highly probable it seems to have rested mainly upon the fact that the building was of timber while the barrack was mainly of stone. It can be noted in this respect that timber buildings which may be barracks have been found in the stone Hadrianic fort at South Shields.¹⁶

Inveresk c. 6.6 acres: In the preliminary report on the excavations at this fort Richmond suggested, mainly on the basis of its similarity to Carzield, that the fort was built to house an *ala quingenaria*.

ala milliaria

Newstead 12 acres: The garrison of this fort in Antonine II may have been an *ala milliaria* but there is really too little known of the plan of the fort in this period to be sure. In any case the dimensions of the fort are governed by earlier forts on the site.

Dalswinton 8.6 acres: Professor Eric Birley has demonstrated that the garrison of this fort cannot have been an *ala milliaria*.¹⁷

Stanwix 9.32 acres: This fort was presumably built to house the *ala Petriana* (since the fort was named after the unit) though this is not certain.¹⁸

It is clear that many of Richmond's type-sites will not stand up to close examination, in particular those for *cohortes equitatae* and *alae*, and there is a real need for a new survey. Richmond's examples are taken from a period of nearly eighty years from the governorship of Agricola to the rebuilding of Birrens in 158 and from both stone and timber forts. It would be preferable, if possible, to study a group of

¹⁶ Cf. n. 11 above.

¹⁷ *Transactions of the Dumfriesshire and Galloway Natural History and Antiquarian Society* xxxv 9-13.

¹⁸ Cf. RHW 207 for some problems concerning the layout of this fort.

forts built at the same time, in the same material, for specific garrisons.¹⁹ The Hadrianic frontier provides such a group, fulfilling all three requirements.

It is not possible to study all the forts of the Hadrianic frontier since in a number of cases their Hadrianic dimensions are not known; this excludes from the present investigation the outpost fort, those on the Cumberland Coast and also the forts on the Turf Wall, with the single exception of Birdoswald. The forts on the Turf Wall can also be excluded because they originally appear to have been built in turf and timber,²⁰ while the small amount of information known about their dimensions make them useless for comparative purposes. Birdoswald, however, lying east of the Red Rock fault, west of which the limestone necessary for the building of the Stone Wall is absent, is built of stone and can be included. Carvoran is late Hadrianic in date but is on the site of an earlier fort which may have affected its size. This, together with the problems relating to its internal layout, render it of no use for this study.²¹ Newcastle can also be excluded since nothing definite is known about the fort here. The remaining forts are South Shields, Wallsend, Benwell, Rudchester, Halton Chesters, Chesters, Carrawburgh, Housesteads, Greatchesters and Birdoswald.

These forts are not devoid of problems. One relates to the builders of the forts. Three legions are attested at work on the Wall and all may have been responsible for the forts, though a recent study of the building of Hadrian's Wall has suggested that they are the product of only two of the

¹⁹ Excavation has demonstrated that when the garrison of a fort is changed although some or all of the internal buildings might be rebuilt for the new unit the defences of the fort often remain untouched and the new buildings accordingly are normally about the same size as their predecessors though the two units might vary in size and/or composition. The changes in the second century garrisons of Corbridge demonstrate this (cf. B. Dobson, *Archaeological Newsbulletin* No. 47 published by Durham University Department of Extra-Mural Studies).

²⁰ Castlesteads and Drumburgh certainly were and Professor Birley has adduced evidence implying that Stanwix possibly also was (cf. *RHW* 207). He has suggested that all the forts on the Turf Wall were therefore of turf and timber construction (cf. *RHW* 213).

²¹ *RHW* 194.

legions.²² These legions built different types of milecastles and turrets on the Wall and there is no reason to think that they obtained complete uniformity in their forts. Moreover other units played a part in the building programme. The British fleet built a number of granaries in the forts of the eastern sector,²³ and it is therefore possible that the auxiliaries also helped with the internal buildings, though it must be admitted that there is no evidence to support this. It is usually considered that the fort of Carrawburgh was built by auxiliaries, but neither of the inscriptions purporting to prove this are definitely Hadrianic.²⁴ In spite of these complications, general rules must have been formulated for the benefit of the working parties as they clearly were for gangs building milecastles, turrets and bath-houses. It therefore seems possible to make meaningful comparisons between forts built by different units.

The other main problem concerning these forts is the lack of evidence, both documentary and archaeological, concerning their original garrisons. Inscriptions and other documents provide information about the units stationed at certain forts in later periods but this is of little help in determining the Hadrianic garrisons, for example three units of different size are connected with Chesters—*cohors I Vangionum milliaria equitata* (RIB 1482), *cohors I Delmatarum quingenaria equitata* (JRS XLVI (1956) p. 229 no. 14) and *ala II Asturum* (cf. RIB 1463 and 1465 and *Notitia Digni-*

²² J. Hooley and D. J. Breeze, *The Building of Hadrian's Wall: A Reconsideration*, AA⁴ xlvii 108; cf. also Appendix below.

²³ An inscription records the building of the granary at Benwell by a vexillation of the British fleet (RIB 1340). Mr. J. P. Gillam has suggested to the authors that the granary at Halton Chesters excavated in 1960.1961 is so similar to that at Benwell that it was also built by the fleet (cf. J. P. Gillam, *Halton Chesters, 1961* in *University of Durham Gazette IX* (New Series) No. 2, p. 6). Mr Gillam has further pointed out that the granary excavated at Rudchester falls into the same group on account of its similarity to that at Halton Chesters (J. P. Gillam, *Halton Chesters, 1960* in *University of Durham Gazette VIII* (New Series) No. 2, p. 6).

²⁴ RIB 1550 and JRS LVI p. 218 no. 5. Mr. J. P. Gillam has pointed out to the first of the two authors that since the bath-house at Carrawburgh is one of the typically Hadrianic group, which also includes Benwell, Bewcastle, Chesters and Netherby, the fort itself must also be Hadrianic.

tatum Occ. XL 38)—but none of them are specifically Hadrianic. In fact in no fort under consideration is the Hadrianic garrison definitely known.²⁵

Later garrisons sometimes appear too large for the fort to hold comfortably on the basis of the number of buildings required according to Table 2. Particularly this is the case at Benwell, where a *cohors milliaria equitata* is attested (*RIB* 1328), and at Greatchesters, where *cohortes quingenariae equitatae* are known (*RIB* 1737 and 1738). These are not isolated instances, however, for the same problem arises at several forts on the Wall for the third century at least, for example Housesteads was garrisoned in the third and fourth centuries by *cohors I Tungrorum milliaria peditata* (cf. *RIB* 1584-6 and *Notitia Dignitatum Occ. XL 40*) and also at times in the third century by *cuneus Frisiorum* (cf. *RIB* 1594) and *numerus Hnaudifridi* (*RIB* 1576), and examples could be cited from forts not on the Wall. How these over-large garrisons were accommodated is not known, but clearly only the garrison for which the fort was originally designed is relevant here.

Although the Wall has been intensively studied for years in only four forts have barracks been completely excavated (Benwell, Halton Chesters, Housesteads and South Shields), though the dimensions of the barracks in a number of other forts can be inferred with a fair degree of accuracy (Birdoswald, Carrawburgh,²⁶ Chesters, Greatchesters and Rudchester; the length of the barracks at Beckfoot can be roughly determined by comparing the known dimensions of the fort with the aerial photographs). The sizes of only six headquarters buildings are known (Birdoswald, Carrawburgh,²⁷ Chesters, Housesteads and South Shields; it can be inferred at Greatchesters, but not at Benwell and Rudchester),

²⁵ For a discussion of the garrison of Hadrian's Wall cf. E. Birley, *The Beaumont Inscription, the Notitia Dignitatum, and the Garrison of Hadrian's Wall*, *CW* 2 xxxix 190-226; cf. also *RHW passim*.

²⁶ Cf. n. 11 above.

²⁷ D. J. Breeze, *Carrawburgh, 1967 and 1968 in University of Durham Gazette XVI (New Series) No. 1*, p. 11-12; cf. also *JRS LIX* (1969) forthcoming.

while commanders' houses, granaries and stables remain a mystery (Halton Chesters²⁸ and Housesteads have furnished plans of the first; at Housesteads only can the total amount of floor space in the granaries be calculated, while stables remain a matter of controversy, being identified only at Halton Chesters and Benwell). These deficiencies in the information available for the study of forts hamper any attempt to determine the size of the garrisons for which they were built.

The factors which, on present evidence, seem likely to be significant in trying to elucidate the original garrisons of each of the forts under discussion are the size and dimensions of each fort, the number of barracks (and stables) in the fort, the length of the barracks and the number of *contubernia* in each. This information, where known, is given in the following table.

Table 3 HADRIANIC STONE FORTS

		<i>Acreege</i>	<i>Number</i>	<i>Barracks</i> <i>Dimensions</i>	<i>No. of</i> <i>contubernia</i>
South Shields	5	(620×360)	?	140×35	(double ended)
Wallsend	4	(450×390)	?	?	?
Benwell	5·6	(580×420)	?	150×38/33	9
Rudchester	4·5	(515×385)	?	c. 150?	?
Halton				130×—/28½	8?
Chesters	4·3	(460×420)	?	c. 150	?
Chesters	5·75	(582×434)	?	c. 160??	?
Carrawburgh	3·9	(460×366)	?	c. 150×36/30	?
Housesteads	5	(610×367)	10/11	162×35/29	10
Greatchesters	3·36	(419×350)	?	c. 135-140	?
Birdoswald	5·33	(580×400)	?	160×—/28	10

NB All measurements are given in feet. Fort dimensions are over the ramparts. The external length of the barracks is given together with the full width of the barrack and the width minus the veranda.

Fort sizes and dimensions The group can be divided

²⁸ Cf. J. P. Gillam, *Halton Chesters*, 1961 in *University of Durham Gazette IX (New Series) No. 2*, p. 6.

into a number of categories dependant upon size and/or dimensions. Unfortunately this does not appear to be connected with the garrison in any way. For example there is a group of three forts—Benwell, Birdoswald and Chesters—with dimensions of about 580 feet by about 400 to 434 feet. It might be expected that these were planned for the same size of unit. In fact this is not the case since Benwell appears to have been built to house an *ala quingenaria* and Birdoswald to house a *cohors milliaria*. Similarly the original garrison of Housesteads seems to have been a *cohors milliaria peditata* and that of South Shields, which is the same size, an *ala quingenaria*. It seems more probable therefore that a grouping based on size and dimensions merely reflects the different fort builders.²⁹

Barracks There are four different sizes of barracks—160, 150, 140 and 130 feet long. These need to be discussed in turn.

160 feet The barracks at Housesteads have 10 *contubernia*, which suggests that they were built for an infantry unit. The number of barracks in the fort suggests that this unit was a *cohors milliaria peditata*.³⁰ The length of the barracks—160 feet—is therefore possibly the hallmark of a unit of this size. The one excavated barrack in the *praetentura* at Birdoswald is 160 feet long and has 10 *contubernia*; one partially excavated in the *retentura* appears to be of the same type. This suggests that the garrison of this fort was also a milliary cohort. Professor Birley has suggested that *cohors I Tungrorum milliaria peditata* was stationed at Birdoswald sometime in the second century and it is possible that this was the original garrison of the fort.³¹ The fort

²⁹ Cf. Appendix below.

³⁰ Dr. D. J. Smith has recently suggested that the Hadrianic garrison of Housesteads was an as yet unidentified *cohors milliaria sagittariorum*, cf. *AA*⁴ xlvj 284-291.

³¹ *RHW* 196. Although in the 120s part of this unit appears to have been in Noricum there is no reason to suppose that the fort would not have been built to hold the complete unit (cf. R. W. Davies, *A Note on a Recently Discovered Inscription from Carrawburgh* in *Epigraphische Studien* 4 (1967) 108-111).

appears to be a little too small to hold a *cohors milliaria equitata* though perhaps the possibility that this was the primary garrison should not be ruled out. On the other hand *cohors I Dacorum milliaria peditata* was stationed here in the third and fourth centuries, which strengthens the case for the original garrison being a unit of this size (cf. *RIB* 1914 and *Notitia Dignitatum Occ.* XL 44³²).

The problems relating to the original garrison of Chesters have already been discussed. It is possible that the present visible barracks, which do not appear to be Hadrianic, are approximately the same length as the original barracks. If this is accepted it follows that the Hadrianic barracks were about 160 feet long, and would be suitable for a *cohors milliaria*. There is just enough room in the fort for the 18 barracks and stables necessary for a *cohors milliaria equitata*.

150 feet Barracks of this length are found in four forts, though only at Benwell are the exact measurements known. The two completely excavated barracks at this fort had 9 *contubernia* each and the excavators suggested that they were each intended for two *turmae*, with the NCOs occupying the ninth *contubernium*. The difficulty of fitting the 16 barracks and stables necessary for an *ala quingenaria* into this fort has already been discussed. It could be argued that the *turmae* were in a mixed unit, but the fort is too small for a *cohors milliaria equitata* and appears to be over large for the 10 buildings of a *cohors quingenaria equitata*. In that case, in spite of the attendant problems, it is difficult to see what unit other than an *ala quingenaria* the fort could have been built to hold.

The other three forts with barracks of this length form a group; Halton Chesters and Rudchester have a very similar acreage, while the secondary fort of Carrawburgh is a little smaller. Halton Chesters is the most important fort for excavations here have produced barracks of two different sizes.

³² For a discussion on the *Notitia Dignitatum* cf. A. H. M. Jones, *The Later Roman Empire 284-602* (Oxford 1964) Vol. III 347-380 and E. Birley, *The Beaumont Inscription, the Notitia Dignitatum, and the Garrison of Hadrian's Wall*, *CW* 2 xxxix 190-226.

Those in the *praetentura* are 130 feet long, probably having 8 *contubernia*, while those partially excavated in the *retentura* are approximately 150 feet long.³³ The two different sizes of barracks suggest that the fort was built to house a mixed unit. There is only enough room in the fort for the 10 barracks and stables necessary for a *cohors quingenaria equitata*. The 150 feet barracks were therefore presumably intended for the infantry and appear to be a little shorter than those built for milliary cohorts. The 130 feet barracks are associated with stables³⁴ and may be considered to be for the cavalry of the unit. They are somewhat shorter than the barracks built for the cavalry of *alae*, which seem to be about 140 feet long. Rudchester and Carrawburgh were probably built for the same size of unit.

140 feet South Shields is one of two forts in this Hadrianic group with barracks of this length, the other being Greatchesters. The fact that the stone barrack excavated in the *retentura* at South Shields is double ended suggests that it was built to house two *turmae* with the decurions' quarters at either end of the building. The six barracks or stables in the *praetentura*, which seem to be of a similar size to that in the *retentura* though not all have been excavated, are of timber construction.³⁵ The fort is large enough to hold all 16 barracks and stables necessary for an *ala quingenaria*. Professor Birley has tentatively suggested that the *ala Sabiniana* was stationed here in the Hadrianic period, which would agree with the known facts concerning the internal buildings.³⁶ If Benwell was built for an *ala quingenaria* the discrepancy between the 150 feet here and the 140 feet at South Shields may be explained by the fact that the forts fall into different legionary groups.³⁷ These cavalry barracks are longer than the cavalry barracks at

³³ Unpublished; information from Mr. J. P. Gillam.

³⁴ The excavators identified two types of stables, one with internal divisions and the other without. There seems to be no reason why the western stable, with divisions, could not have been a barrack; cf. *AA*⁴ xiv 164-165.

³⁵ Cf. n. 11 above.

³⁶ *RHW* 152.

³⁷ At Carzield the cavalry barracks are 142 feet long.

Halton Chesters which seem to have been intended for two *turmae* of a *cohors quingenaria equitata*. The barracks in the *praetentura* at Greatchesters must lie along the short axis and can therefore be no longer than c. 135-140 feet. The fort is not large enough to hold the 10 barracks and stables of a *cohors quingenaria equitata* and must therefore have been built to house a *cohors quingenaria peditata*. The barracks seem to be shorter than the infantry barracks of a *cohors quingenaria equitata*, which is surprising. It is possible to compare these to the barracks at Beckfoot which are c. 133 feet long and may originally have been built in timber. The two forts clearly fall into the same category.

130 feet The only fort with barracks of this length is Halton Chesters and as has been discussed they appear to have been built to hold two of the *turmae* of a *cohors quingenaria equitata*.

We are conscious that we have raised more questions than can be answered in the present state of our knowledge. We feel, however, that it is desirable that attention is directed away from fort sizes and Richmond types and directed to the internal anatomy of forts, particularly their barracks and stables. None of our conclusions are more than tentative and the need for more work on these problems is clear. However, we may perhaps end by suggesting as possible type-sites for the six different units of the Roman *auxilia* the following:

Table 4 TYPE-SITES ON HADRIAN'S WALL

	Acreage		Number	Barracks Dimen- sions	No. of contubernia
<i>cohors quingenaria peditata</i>					
Greatchesters	3.36	(419 × 350)	?	c. 135-140	?
<i>cohors quingenaria equitata</i>					
Halton Chesters	4.3	(460 × 410)	?	c. 130 × — / 28½	8?
			?	c. 150	?
<i>cohors milliaria peditata</i>					
Housesteads	5	(610 × 367)	10/11	162 × 35/29	10
<i>cohors milliaria equitata</i>					
? Chesters?	5.75	(582 × 434)	?	c. 160?	?
<i>ala quingenaria</i>					
South Shields	5	(620 × 360)	?	140 × 35 (double ended)	
<i>ala milliaria</i>					
Stanwix ³⁸	9.32	(700 × 580)	?	?	?

APPENDIX

Fort dimensions, legions and the building of Hadrian's Wall

The forts under discussion appear to fall into two groups. Benwell, Birdoswald and Chesters, all about 580 feet by about 400 to 430 feet, form the nucleus of one group. To these may be added Halton Chesters which shares the same width, while the same measurement occurs in the length of Greatchesters. Wallsend is a slightly smaller version of Halton Chesters and may have been the work of the same unit though this is uncertain.³⁹ Two forts, South

³⁸ Cf. n. 18 above.

³⁹ The fort may be secondary and therefore may have been built by a different legion than the other stone forts, though this is improbable. Carrawburgh on the other hand is definitely secondary and must be excluded from this discussion. It is still possible that it was built by a legion and if this was the case its layout, being closer to Rudchester than to Halton Chesters, suggests that it should be included in the second group of forts (cf. below).

Shields and Housesteads, form the nucleus of the second group.⁴⁰ Rudchester may be added to these being similar in size to Halton Chesters but with very different dimensions. An inscription found at Halton Chesters demonstrates that this fort, or at least part of it, was built by legion *VI Victrix* in the governorship of A. Platorius Nepos (*RIB* 1427). This implies that all the forts in the group which includes Halton Chesters were built by this legion, or at least under the overall direction of the legion. Professor Birley has pointed out the similarity between the massive masonry in the gates at Housesteads and that in the milecastles built by legion *II Augusta*, which he takes to imply that this legion was responsible for both. In that case *II Augusta* may have been responsible for all the forts in this group. It would appear that all the known Hadrianic stone forts, which comprise the majority of the forts on the Wall, were probably built by one of two legions, *II Augusta* or *VI Victrix*. This is in accord with the suggestion made by Hooley and Breeze that these two legions were responsible for the building of forts while *XX Valeria Victrix* continued working on the milecastles, turrets and curtain in the central sector of the Wall after the decision to move the forts from the Stanegate on to the line of the Wall itself, taken probably in the second full season of work on the Wall.⁴¹

Table 5 SUGGESTED LEGIONARY FORT BUILDERS

<i>VI Victrix</i>		<i>II Augusta</i>	
Benwell	(580 × 420)	Housesteads	(610 × 367)
Birdoswald	(580 × 400)	South Shields	(620 × 360)
Chesters	(582 × 434)		
Halton Chesters	(460 × 420)	Rudchester	(515 × 385)
Greatchesters	(419 × 350)		
?Wallsend	(450 × 390)		

⁴⁰ It is usually thought that the exigencies of the site governed the layout of Housesteads, though this can be directly paralleled at Fendoch where there appears to be no such reason. The fact that the dimensions of Housesteads are so similar to those of South Shields suggests that they both adhered to standard dimensions. Note also the occurrence of 366 feet in the width of Carrawburgh.

⁴¹ J. Hooley and D. J. Breeze, *The Building of Hadrian's Wall: A Reconsideration*, *AA*⁴ xlvii 97-114.

