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STONEHENGE WORLD HERITAGE SITE LANDSCAPE PROJECT STONEHENGE DOWN AND THE TRIANGLE

ARCHAEOLOGICAL SURVEY REPORT

David Field and Trevor Pearson



ASSESSMENT



ENGLISH HERITAGE

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Research Report Series 105-2011

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STONEHENGE DOWN AND THE TRIANGLE

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David Field and Trevor Pearson

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SUMMARY

Survey of the earthworks on Stonehenge Down, including those in the immediate environs of Stonehenge, an area here termed the Triangle, was undertaken by the former Archaeological Survey & Investigation and Imaging Graphics & Survey teams of EH. This investigation recorded well preserved barrows but also revealed the presence of a number of examples previously thought to have been levelled, along with traces of part of the First World War Royal Flying Corps aerodrome. In addition, earthworks relating to cottages constructed for custodians were identified, along with a number of trackways, most of which were overlain by ridge and furrow, the result of cultivation during the 19th and 20th centuries. The investigation provides context for Stonehenge itself, which can now be seen as part of a complex of ceremonial monuments, including some which must have been contemporary with its early use.

CONTRIBUTORS

David Field, Trevor Pearson, Deborah Cunliffe and Peter Topping conducted the survey in the Triangle between January and April 2009. Nicky Smith and David Field surveyed the outlying barrows further west in June 2011. Deborah Cunliffe penned the hachured plans and Trevor Pearson prepared the digital ground model based on a laser scan by the Greenhatch Group Ltd (March 2011) and ground checked by Sharon Soutar (formerly Bishop) in August 2011. Historical air photography was provided by Martyn Barber. Documentary and historical investigation and research was carried out by David Field; the report was prepared by David Field and Trevor Pearson, and edited by Mark Bowden.

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ARCHIVE LOCATION

The survey archive is lodged at the National Monuments Record Centre, Firefly Avenue, Swindon, Wiltshire SN2 2EH

DATE OF SURVEY

Survey took place between January and April 2009 and in March, June and August 2011.

CONTACT DETAILS

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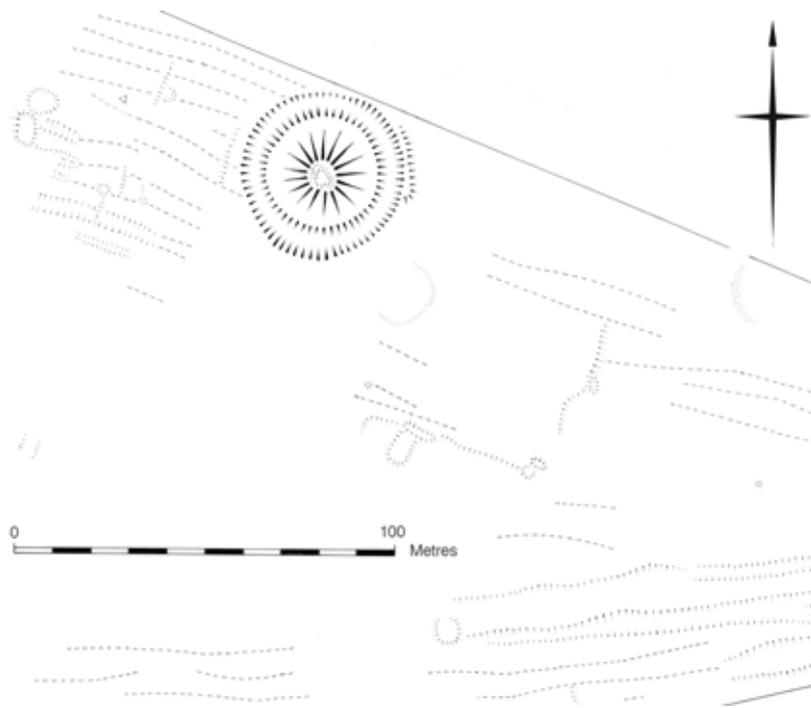
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Frontispiece: Barrow Amesbury II and surrounding earthworks, reduced to 1:2000 from original survey scale of 1:1000.

INTRODUCTION

While Stonehenge is extremely well known as one of the most visited prehistoric monuments in the world, it tends to be the stones rather than the earthworks that provide the attraction and only rarely do the latter receive a passing glance. The present report highlights the importance of these earthworks and emphasises their role in providing a comprehensive understanding of the development of the site. The earthworks within and immediately around the stones were described in a separate report (Field & Pearson 2010). Here the site is placed in slightly wider context and the earthworks immediately surrounding the henge are described and analysed.

Stonehenge itself comprises an earthen bank and ditch forming an almost circular enclosure, open in the north-east where parallel linear earthworks known as the Avenue abut it. Within is a ruinous stone setting, comprising some 83 stones. These are surrounded by two circuits of hollows known as the Y and Z holes and a further circuit, not visible as earthworks but known as the Aubrey holes. As might be expected at such a site, there has been a lengthy period of antiquarian excavation and comment, not to mention debate and controversy. Excavations during the 20th century provided detailed chronology (Gowland 1902; Hawley 1921; 1922; 1923; 1924; 1925; 1926; 1928; Atkinson 1956; 1979). They confirmed the prehistoric nature of the site and suggested that the construction phases spanned some 1500 years, from about 3000BC until about 1500BC. Publication and analysis of the 20th century excavations has considerably refined the data, particularly with the presentation of radiocarbon dates (Cleal *et al* 1995) and a recent re-assessment has added further detail (Parker Pearson *et al* 2007).

Several excellent accounts of Stonehenge have been published in recent years (Burl 2006; Darvill 2006; Lawson 2007 and Johnson 2008; also see Pitts 2000 and Richards 2007) and the reader is warmly pointed in the direction of those. Little if any comment, however, has been made concerning the wider area around the monument. This report aims to redress that and focuses broadly on Stonehenge Down, but more specifically on the area referred to here as the Triangle. (Note: this differs from the area termed the triangle by Richards (1990) who used the A360 road as the western boundary.) The area to the north of the A344 highway will be the subject of a further report.

Lying beyond the English Heritage walkway, the immediate environs of Stonehenge are today less intensely visited or considered, yet the area contains archaeological features of great interest. Chief among them is a barrow cemetery defaced by cultivation but still visible and retaining considerable detail. When considered in this slightly wider context it becomes apparent that Stonehenge itself can be seen as just one component of a wider ceremonial arrangement. Earthworks of the First World War aerodrome also remain and comprise a crucial part of the landscape history of Stonehenge.

Stonehenge Down is a strip of formerly isolated chalk downland at the western margin of West Amesbury parish, bordered in the west by the boundary with Winterbourne Stoke.

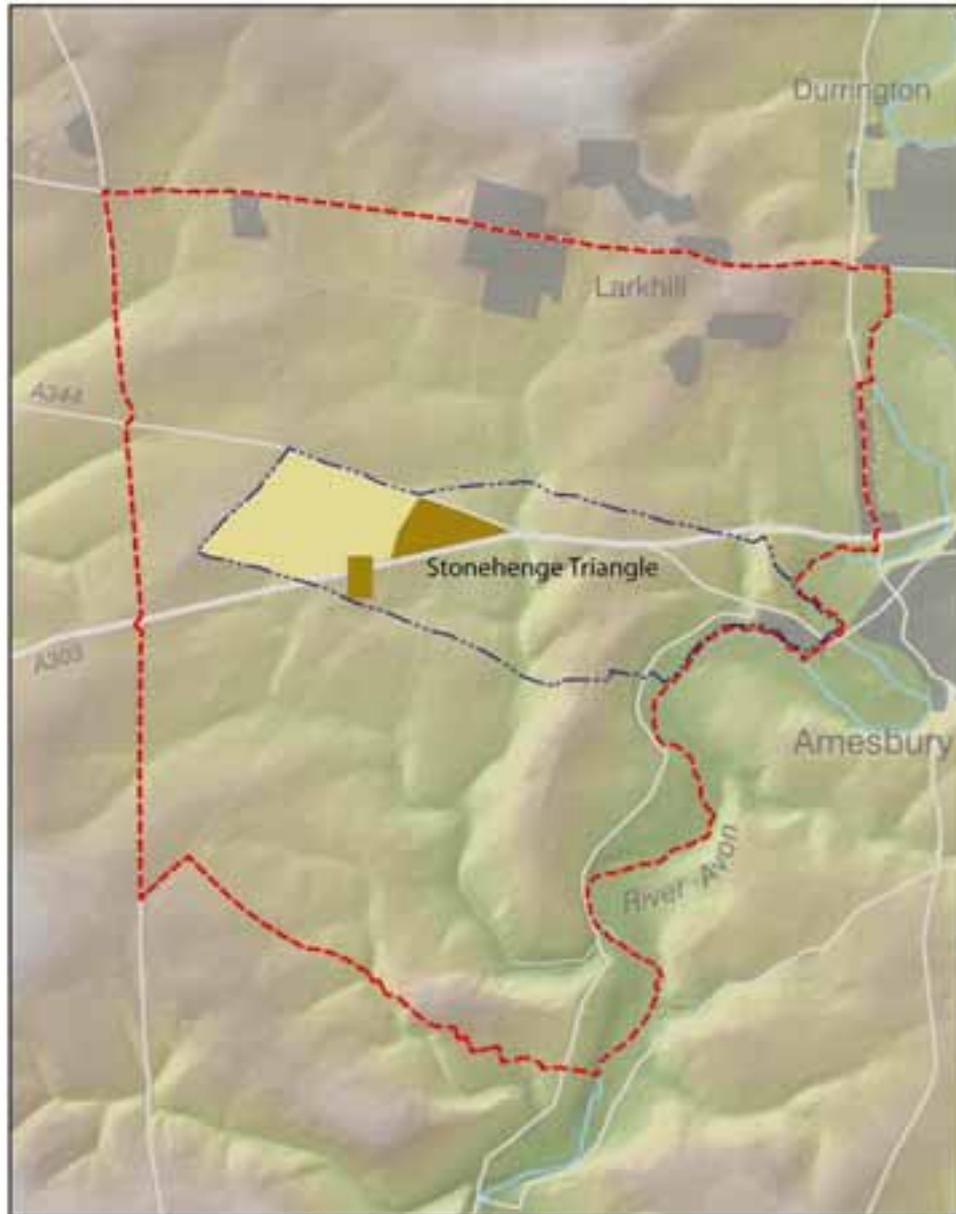


Fig 1. Map showing the location of Stonehenge Down (yellow) with the boundaries of West Amesbury (blue) and the World Heritage Site (red) outlined. The surveyed areas, the Stonehenge Triangle and the Amesbury barrows to the south-west of it, are depicted in brown.

The Down is almost 1 km wide, bounded by the A344 road in the north and the Normanton parish boundary that once ran parallel to the south of it obliquely crossing the line of the A303 (Fig 1). It is characterised by relatively shallow re-entrants in the north-east and south, both of which lead into the deeply incised and more dramatic Stonehenge Bottom to the east and leave a gently inclined central interfluvium on which Stonehenge itself is situated. The underlying geology (Geological Survey of Great Britain *Salisbury* sheet 1903 reprinted 1976) is uniformly deposited Cretaceous Upper Chalk, soft rock that is very easily weathered resulting locally in rounded hills and an undulating

landscape. This weathering can be quite severe; indeed Atkinson (1957) considered that up to 0.3m of the surface had been truncated at Stonehenge during 4000 years as a result of dissipation of the chalk sub-soil, although it is now considered that such decay has been accelerated by historic and particularly modern cultivation and chemical fertilisation (Groube & Bowden 1982, 17). Seams of hard flint occur throughout the deposit at intervals and can retard weathering and provide temporary water tables and spring lines. The chalk supports lcknield soils in the immediate vicinity of the site, but Andover 1 soils immediately north of the A344 road. These are light, well-drained and easily tilled but contain surface flint, although not in sufficient quantities to cause serious damage to ploughshares. The differences are slight, but it is noteworthy that Andover soils tend to occur over striped periglacial soil patterns.

Stonehenge itself lies at the eastern end of Stonehenge Down, within a triangular area now in English Heritage Guardianship (Fig 1). This is defined in the north by the A344 road, by the A303 to the south and by a public by-way in the west and is referred to here as the Triangle. To the north lie the extensive military ranges where the extant archaeology has been recorded and analysed by earlier investigative work (McOmish *et al* 2002), while to the south as far as Salisbury most of the land has been cultivated and many formerly upstanding archaeological remains levelled. The City of Salisbury itself is situated some 12km to the south, though Stonehenge is positioned in the parish of Amesbury at just over 3km from the manorial core and beyond the heavily cultivated arable fields of the historic manor.

In recent times Stonehenge Down, and the Triangle in particular, has been managed with the archaeology in mind as much as the visitor experience of Stonehenge; the Triangle is put down to pasture, cropped for hay and grazed by sheep and there is little interruption to this regime. Large numbers of people assemble for the summer and winter solstices but social gatherings of one form or another, whether for fairs, cricket matches or hunt meetings have taken place at the site for several centuries. Gatherings at the site in the 1970s and 80s were a focus for counter or alternative culture events (Worthington 2004) and it is conceivable that some of the small scale surface disturbance visible in some places may have resulted from this or the earlier activities, but such occasions are currently restricted to the midsummer and midwinter solstices.

Servicing the requirements of various interest groups is the ultimate purpose behind the present work and it provides basic data from which to construct hypotheses. The Stonehenge WHS Landscape Project aims to investigate and analytically survey the earthworks and landscape within the World Heritage Site in advance of anticipated requirements of the new Visitor Centre (Bowden & Field 2009). Many of the sites in the area have not been surveyed since the Ordnance Survey cartography in the earlier part of the 20th century and much archaeological knowledge of the area rested upon these earlier surveys which were executed for the purposes of land and topographic record rather than archaeological need. The Project also aims to complement and support the recent university field archaeology projects at and around Stonehenge (e.g. Parker

Pearson *et al*/2008; 2009; Darvill and Wainwright 2009) which will have considerable impact on the interpretation of the site and it should assist with their discussion and re-interpretation. Thus the earthworks at Stonehenge and its surroundings were surveyed in spring 2009 and analysis, documentary and historical research and other investigations during the months following with laser scanning carried out in spring 2011. A description of the earthworks immediately follows this introduction with relevant historical data relating to the site and landscape context reserved for later.

Stonehenge itself is registered in the National Monuments Record as number SU 14 SW 1 and is Scheduled Monument number 10390. Other relevant numbers can be found in the concordance provided in Table 1. The barrows were initially catalogued by Sir Richard Colt Hoare (1812, 126-8), subsequently incorporated in the list of Wiltshire barrows and given parish numbers by Goddard (1913) and this was updated and utilised by Leslie Grinsell (1957). This last is the reference number most widely used in archaeological literature and consequently that number is used in this report. Hoare (1812, 126) depicted several other barrows further west on Stonehenge Down that were already under the plough at that time (Grinsell numbers Amesbury 11 a-d) and another in the area of the later Fargo Cottages (No 11 e). Extant examples mentioned in the survey are depicted in Figure 2.



Fig 2. Location of surveyed barrows as numbered by Grinsell, set against lidar background at 1:10,000 scale. Lidar © Environment Agency (December 2001).

THE EARTHWORKS

Earthworks on Stonehenge Down and in the Triangle were surveyed as separate units (Figs 3 and 4) and are presented here as separate plots. The western unit comprises several numbered barrows with a remnant of the Stonehenge Military Light Railway between two of them (Fig 3). Some of the features identified correspond with known archaeological or historical features; in particular, many of the mounds were identified as barrows in the 18th century and the present survey confirms that identification. Those formerly allocated numbers by Grinsell are therefore discussed using those reference numbers, while other earthworks are referred to by letters on the respective plans (Figs 3 and 6). As noted above, Stonehenge itself has been covered by a separate report (Field & Pearson 2010).

The western barrow group

The western group of earthworks comprises four extant mounds (Fig 3), all undoubtedly barrows, along with one partial mound that, based on excavation history, is likely to be a barrow and a further almost levelled example (**b** on Fig 3) that may be related to the First World War aerodrome. The main part of this group is set on the shallow south-facing slopes at the upper limit of a re-entrant that leads down to Stonehenge Bottom.

Amesbury 1

This is a bowl barrow, 1.9 high with a 1.2m wide ditch, that is visible only in the east but which if complete would give an overall diameter of 5.1m. A break of slope and slight ledge on the side of the mound may indicate that there was a later addition. The ditch is obscured and all but obliterated for most of the circuit and cut into by military trenching in the south. The remaining visible portion, itself heavily ploughed and no more than 0.2m deep, suggests that it was a relatively broad feature.

Amesbury 2

This is a simple bowl barrow of 2.7m in maximum diameter and 1.5m in height. No ditch can be traced on the ground.

Amesbury 3

Only part of this small extremely shallow mound remains but it would appear to have been no more than c8m in diameter and reaches little more than 0.1m in height.

Amesbury 14

This is a long barrow oriented south-south-east, 33m in length and 18m in maximum width, with a 4m wide by 16m long spread bank or addition to the barrow along the summit of the mound. It reaches a maximum of 1.6m in height. The side ditches are 8m wide, the westernmost being slightly longer than its partner.

Amesbury 15

This is a very large bell barrow known by some as the Sun Barrow, as it lies on the same axis as Stonehenge. It reaches 4.3m in height, with a total diameter of 56m and a flat summit measuring 29m diameter. The 8m wide ditch is still 0.4m deep and separated from the mound by a berm that would have provided a platform 40m in diameter. There is some wear to the summit, but this appears to be the result of access and recent, perhaps wartime, activity rather than archaeological or antiquarian intervention.

Also visible on Fig 3 are: (a) brick and concrete footings probably associated with the First World War aerodrome buildings or the pig farm that succeeded them; traces of the Military Light Railway (see below); and (b) a very shallow, slightly oval mound measuring 24m by 22m and little more than 0.2m in height. Proximity to others makes it possible that it is a ploughed down barrow but the area was covered with buildings of the First World War aerodrome and it is more likely that it was associated with those.

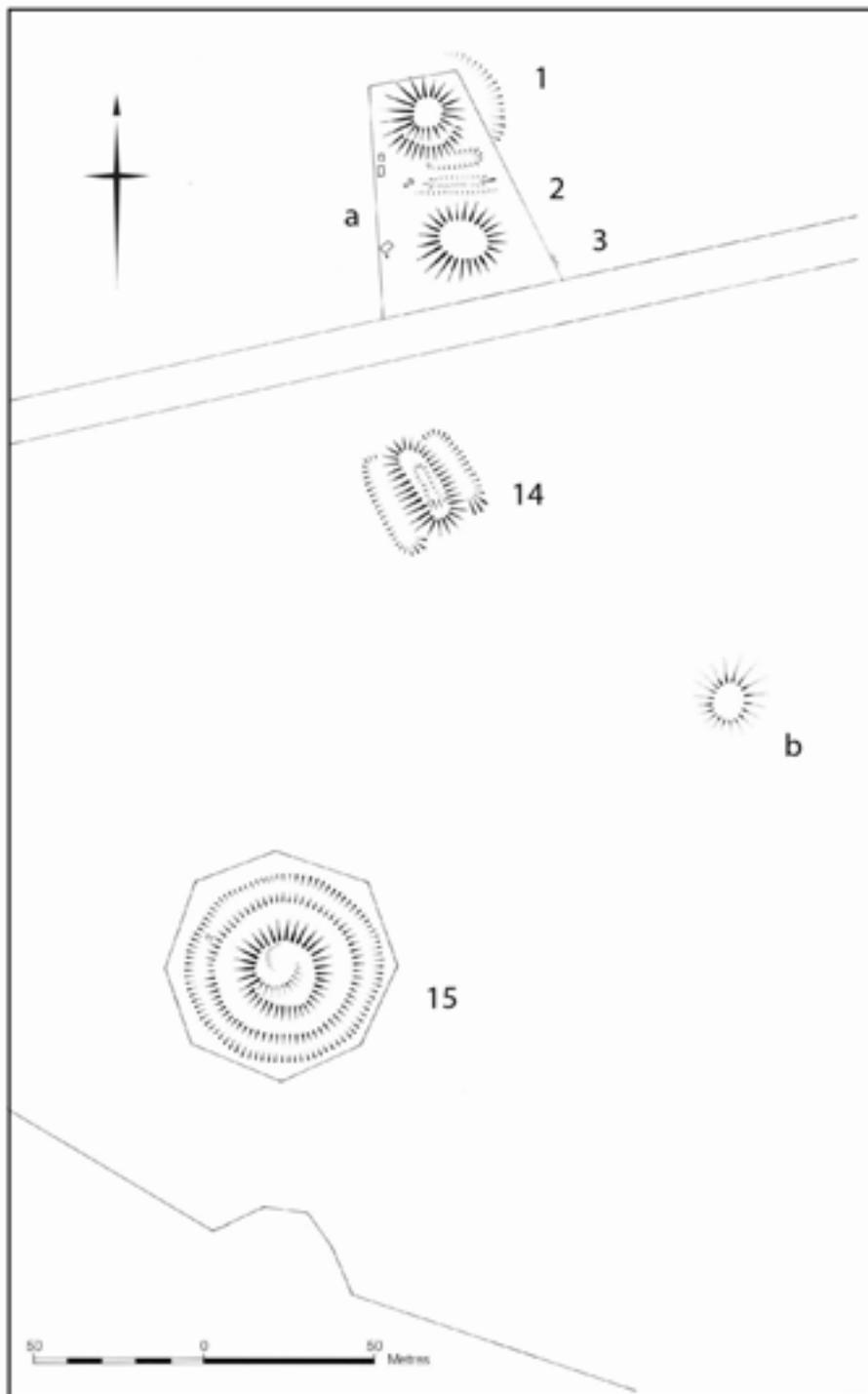


Fig 3. Hachured survey plot of barrows Amesbury 1-3, 14 and 15 reduced from original 1:1000 survey scale. Traces of the military railway are visible between Barrows 1 and 2 along with concrete rafts and brick pillars (a) while the mound (b) to the south of the A303 is likely to have been associated with the aerodrome buildings. The curve in the fence line to the south marks the position of a large, potentially natural depression, perhaps a swallow hole now partially filled in but still c.3m deep. Stukeley referred to it as 'a circular dish-like cavity dug in the chalk, 60 cubits in diameter, like a barrow revers'd' (1740, 45).

Barrows within the Triangle

Nine mounds within the Triangle are interpreted as round barrows (Fig 4; Fig 5 for Amesbury 4-10a: Frontispiece for Amesbury 11) which, in all but one case, concurs with previous identifications and in some cases with excavation evidence. All but two, Amesbury 11 situated to the east of Stonehenge and Amesbury 10 to the south, have been significantly reduced in height by cultivation and consequently any former detail has been appreciably obscured. Nevertheless, sufficient remains for general definition. The group has been placed more or less along the central axis of the shallow ridge, though the outliers Amesbury 10 and 10a are placed on the upper slopes on either side. All lie well below the summit of the down which is over 1km to the west and there is a shallow but steepening gradient into Stonehenge Bottom.

Amesbury 4

The westernmost barrow, a bowl, situated just metres from the north to south by-way, is a simple almost circular mound, 24m by 22m across by 0.5m in height. A small mound on the summit, just 4m across, is likely to represent later damage. There is no sign of a ditch. A further mound immediately south-west and adjacent to the by-way fence, measuring 15m by 10m and 0.4m high is, judging from its prominent profile, likely to be modern.

Amesbury 5

Part of a focussed central group, this mound, evidently a bowl or flat barrow (in Hoare's terms a 'broad barrow'), is of large diameter, 32 by 30m, and reaches just 0.5m in height. A secondary mound, 17m by 11m by 0.2m in height, is situated on the summit but this has been disturbed. There is a possibility that the barrow has been spread to some degree by cultivation but the encircling ditch is still visible, indicating that this diameter is original. The ditch is 7m across by 0.1m deep, providing a total diameter of between 40 and 45m for the monument, but it is not traceable in the east where ploughsoil has covered it. Heavy cultivation on this side may also be responsible for the squared off nature of the mound.

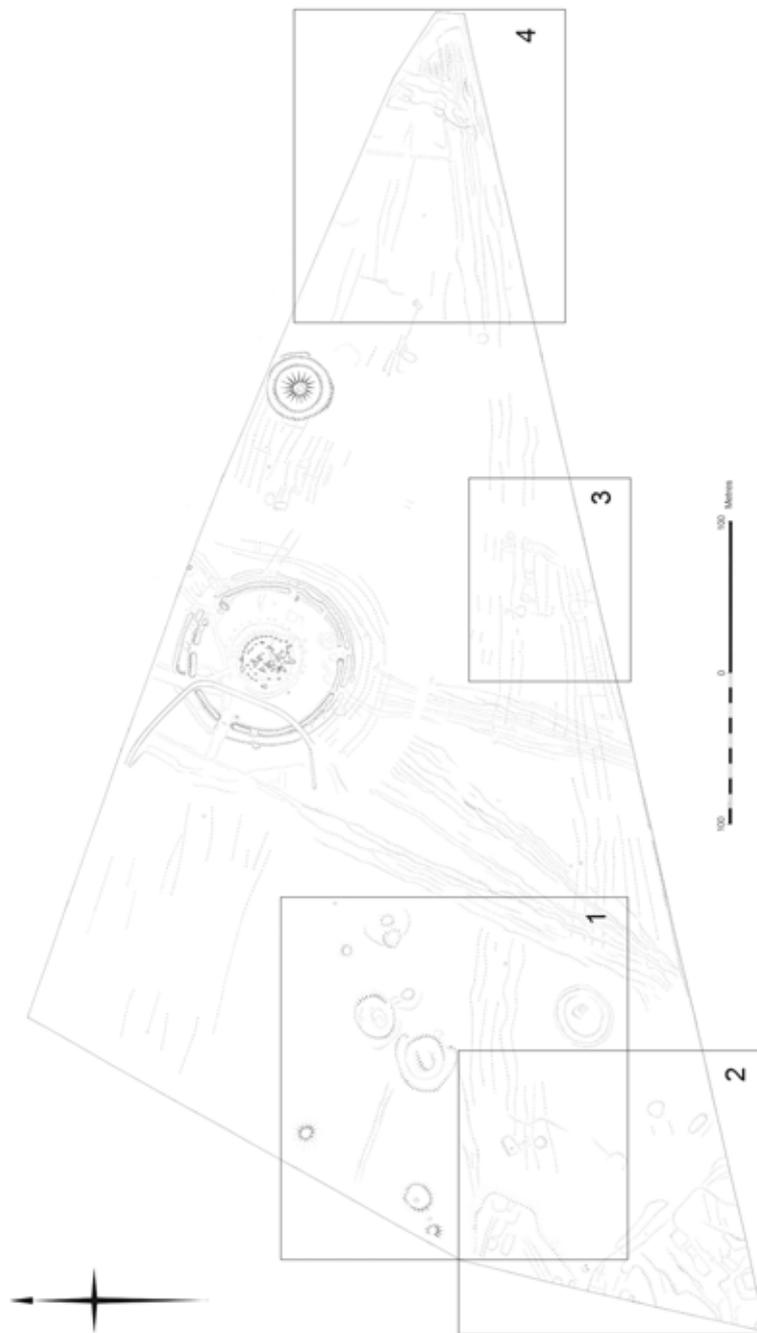


Fig 4. Hachured plan of the earthworks in the Stonehenge Triangle, reduced to 1:5000 from original 1:1000 survey scale; north to left.

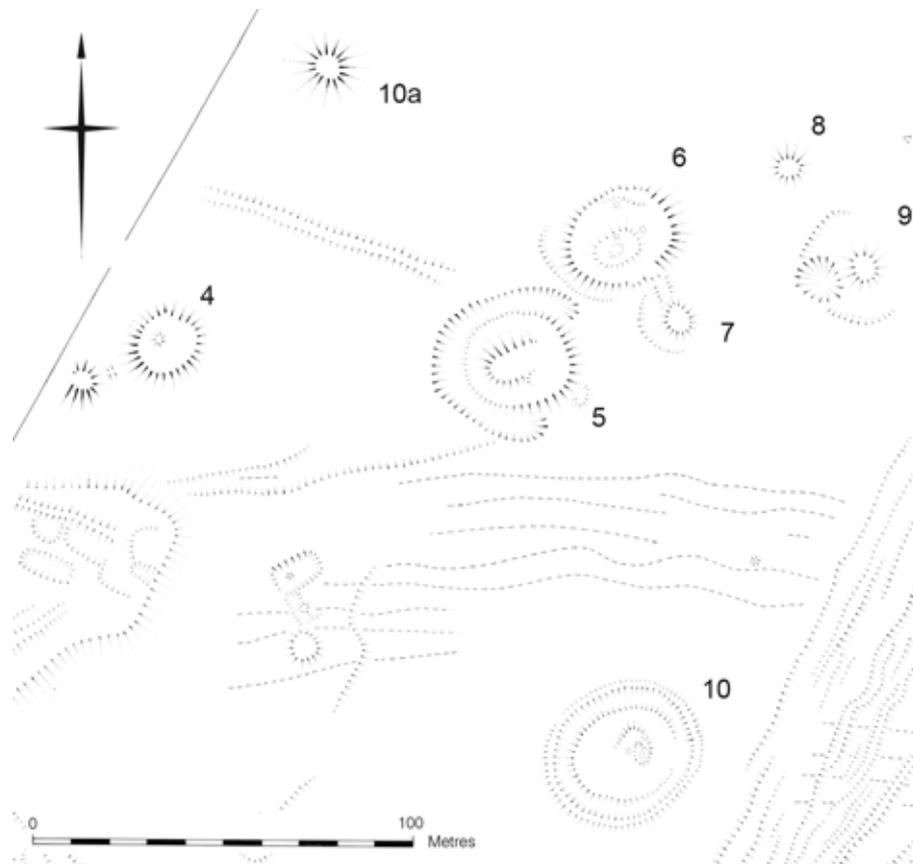


Fig 5 Inset 1. Amesbury Barrow Group 4-10a situated to the west of Stonehenge reduced to 1:2000 from original survey scale of 1:1000.

Amesbury 6

Just 2m north-east of Amesbury 5 is a circular mound of greater prominence, evidently a bell barrow. It reaches 0.4m in height and is the most conspicuous of the group to the west of Stonehenge. It measures 36m across a north-east to south-west long axis by 27m transversely; visible in the south-west is a ditch 5m across and 0.3m deep. This is not traceable on the east side but assuming its presence it would provide an overall diameter of 45m to the barrow. There appear to be several phases visible in the earthworks. An upper mound 12m by 13m by 0.2m in height and a small tump 5m by 4m by 0.1m high surmount the basal mound. Considerable surface damage to the barrow makes further interpretation of architectural detail difficult.

Amesbury 7

Immediately south-east of the bell barrow is a severely denuded oval mound surrounded by a wide ditch. Amesbury 7 may never have comprised significant bulk but at 0.2m in height its shallow mound today is extremely fragile. The mound measures 13m by 10m in diameter and its 0.1m deep ditch can only be traced at the west side, but if complete would be some 18m north-south by 20m east-west. The circuit of the ditch impinges on that of Amesbury 6 but unfortunately the cultivation and other surface damage here make the precise relationship uncertain. In addition a shallow bank of soil, a modern placement, lies in the ditch at the crucial position.

Amesbury 8

Some 22m to the north-east of Amesbury 6 is a small shallow plain circular mound, a bowl barrow, no more than 0.2m in height and 12m by 13m in diameter. It has been severely reduced by cultivation.

Amesbury 9

South-east of Amesbury 8 are the remnants of Amesbury 9, a barrow now of indeterminate form. This was evidently once a round barrow of large diameter but the central mound is barely discernable now, just 15 by 14m in diameter and 0.2m in height. Part of the ditch is traceable on the west side, which indicates that the overall diameter was in the order of 30m. An oval depression 12m across by 0.3m deep lies within and subsumes the ditch but its nature is unclear. It is probably too large and deep for a stock feed earthwork; conceivably it is a small chalk quarry, but if so it has been considerably rounded off by cultivation.

Amesbury 10

This is a disc barrow that, surprisingly, has survived the cultivation. The complex of hollowed trackways to north, east and south may have discouraged all but the most rigorous of plough ventures. It is slightly oval set on a north-east axis, with a bank outside the ditch and with a small oval mound at the centre. The bank measures 4m wide and is 0.2m high while the ditch measures 4m wide and 0.2m deep. It defines a platform 28m by 23m within which the mound measures 10m by 10m by 0.1m in height.

Amesbury 10a

A small simple, slightly oval, mound matches the location recorded as that of a long barrow by Hoare (1812, 128). It lies close to the present north to south by-way and some 90m north-west of the main group. It measures 24m by 20m and reaches no more than 0.2m in height. No surrounding ditch is visible. It is conceivable that it represents a long barrow reduced by cultivation but there is no indication that the mound has been truncated and it is therefore recorded here as a round barrow.

Amesbury 11

This is the grandest of the Stonehenge group of round barrows. It is a fine example of a bell barrow of good and conspicuous proportions. The mound is 1.6m in height and 22m in diameter leaving a berm of 7m, effectively a platform 29m in diameter defined by an encompassing ditch. The latter is 8m across and still 0.4m deep. An external bank, 4m across by 0.2m high and providing a total diameter for the monument of 51m, still remains in places, notably in the north-east where it has escaped cultivation. On the summit of the mound are indications of excavation, presumably that of Richard Colt Hoare (see below).

Stonehenge Aerodrome

Shallow and amorphous undulations, plough-levelled remnants of the First World War Royal Flying Corps aerodrome, are present across a large part of Stonehenge Down and are best depicted from the air (see below). Those in the Triangle retain a little more form than those further to the west and are shown in Fig 6. In the south-west corner of the surveyed area are a series of prominent platforms arranged on a north-west to south-east alignment and at right angles to it. These are quite prominent and reach up to 0.4m in height. Their right angles and rectangular nature indicate that they represent the location of former buildings and access ways around them.

Further east several isolated earthworks occur. A rectangular platform or stance (Fig 6, **a**) measuring 23m by 8m on a north-east alignment may be the site of a shed or barn. It appears to interrupt the ridge and furrow and is likely to be a relatively late feature. A building occurs in this position on an RAF vertical aerial photograph taken in 1922 (see below). Some 12m to the south of it is a shallow, almost circular mound (Fig 6, **b**) measuring 10m by 9m. Both features are likely to be associated with the aerodrome.



Fig 6 Inset 2. The south-western corner of the Triangle showing the Stonehenge Aerodrome earthworks and other nearby features (a-e) reduced to 1:2000 from original survey scale of 1:1000.

Further south is a crescentic platform measuring 13m by 10m on a north-east axis (Fig 6, c). This is also probably associated with the aerodrome as it lies on the same axis. South-east of this are two mounds. One (Fig 6, d), circular with flattened sides, measures 13m by 0.2m. Adjacent to the A303 is a south-east oriented long mound 19m by 18m and 0.2m high (Fig 6, e), with traces of a ditch on the west side. Orientation and form introduce the possibility that this is a small long barrow although proximity to the aerodrome suggests that it is more likely to be a modern feature.

Trackways

A number of hollowed trackways occur, mostly in groups where, formerly unrestrained by fences, travellers and vehicles have taken lines of least resistance to avoid mud and other obstacles and tracks have consequently migrated across the down (see Fig 4). Two groups can be traced in a west to east direction. The northernmost is situated between barrows Amesbury 5 and Amesbury 10 but appear to underlie the earthworks associated with the

Stonehenge Aerodrome. It is likely that these led to the former Fargo Cottages that lay 300m to the west. A second group lie approximately parallel to the A303 and presumably form part of its precursor. In the east, these two groups focus on Stonehenge Bottom and converge, passing to the south of the Stonehenge Cottage earthworks (see below).

Two groups of trackways are aligned north to south. Both can be traced from the A303 leading northwards and it is presumed that they derive from a location to the south of that road. They appear to cross the west to east trackways, or at least are considerably more prominent, and converge on Stonehenge, crossing the perimeter enclosure in two places. Parts of the westward group diverge from this course and pass to the west of the Stonehenge enclosure. This represents the by-way and its precursor that was depicted as formalised by fences on the Ordnance Survey 3rd edition 25inch map (1924) and which was noted by Hawley (1921,19) as having been moved away from the monument when he started work there in 1919. Initially it was moved immediately west, just beyond the enclosure ditch, but was relocated further west to its present position in the 1960s.

Miscellaneous features

A number of miscellaneous features were identified during the survey. Small isolated mounds and linear gulleys that comprise a series of interruptions to the ridge and furrow occur to the south-south-east of the stones (Fig 7). The rough ground here is depicted on a 1922 RAF aerial photograph (see Fig 11) and while it is conceivable that it relates to wartime activity, huts related to Colonel Hawley's excavation campaign were placed in the vicinity and it is likely to be associated with them. A small standing feature is visible on the RAF 1922 vertical, set to the south-west of the position of Hawley's huts. It appears as a shed-like structure on an aerial photograph taken by the RAF in 1928 (see Fig 12) and may have been a latrine hut perhaps retained later for use of the custodian as it was still there in 1943 when it was depicted on a USAAF photograph (see Fig 13). A single concrete post support was noted amongst these features.

'Hawley's Graves'

Several small sarsen boulders were noted along the bank defining the trackway approaching Stonehenge from the south (Fig 8). These are likely to represent a series of pits where Hawley deposited many of the finds from his excavations and which have become referred to as 'Hawley's Graves' (Cleal *et al* 1995, 15, 18-19).



Fig 7 Inset 3. Miscellaneous features to the south-south-west of the stones, probably associated with Colonel Hawley's huts, reduced to 1:1250 from original survey scale of 1:1000.



Fig 8. A number of sarsen boulders lie on a shallow bank to the south of Stonehenge. They appear to mark the position of 'Hawley's Graves' i.e. the locations where he buried finds from his excavations.

Stonehenge Cottages

In the slope down to Stonehenge Bottom in the far east of the site and situated in the apex of the triangle formed by the fork of the A303 and A344 roads lie further platforms (Fig 9). These are cut into the slope and represent the position of buildings and associated gardens. They correspond to the location of houses known as Stonehenge Cottages that are depicted on the OS 25inch 3rd edition map of 1924, enclosed by a fenced area presumably marking the limit of a garden (see below). In general, the platforms cut into the west to east trackways. A north to south linear bank provides the western extent of the property.

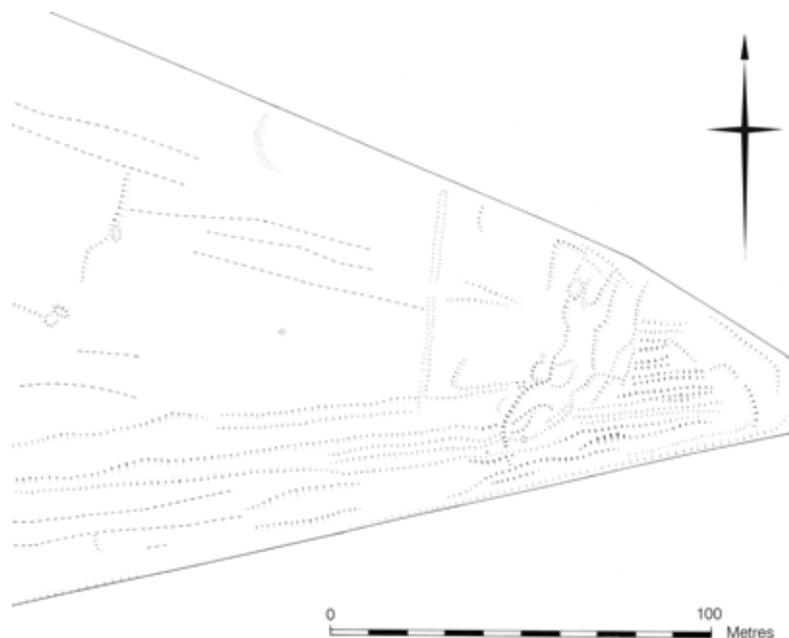


Fig 9 Inset 4. Earthworks of Stonehenge Cottages, built for the site custodians, reduced to 1:2000 from original survey scale of 1:1000.

LASER SCAN

The ground surface of the Triangle was scanned by laser in order to provide a digital terrain model (DTM) that would provide a further analytical component as well as for general illustrative purposes in the new Visitor Centre. The work was tendered and carried out by the Greenhatch Group Ltd at a time when vegetation was extremely low and provided optimum survey conditions.

The scan works well as a DTM and the resolution is much better than the currently available lidar. The recorded detail is good and while the barrows and undulations of earthworks easily recognised by other methods were logged in the data, the resolution also allowed recognition of shallow indistinct subtleties that when observed in the field are too amorphous to be easily recorded and interpreted on the ground by traditional survey techniques. Certainly the sinuous interconnecting nature of subtle elements can be readily appreciated on the digital model.

It will be apparent at a glance (Fig 10a and b) that aside from the barrows and the Royal Flying Corps aerodrome, the palimpsest of linear features is an item with great visual impact. The north to south trackways leading to the stones can be seen to be more widespread than depicted in the earthwork survey, with a myriad of sub-routes alongside the main one.

A preliminary analysis of the results was carried out by Caroline Hardie of Archaeo-Environment Ltd. Aside from the features noted above as earthworks, she identified several other features:

1. A series of elongated hollows are interpreted as the line of the Palisade Ditch, a feature formerly observed from the air (RCHM 1979, 25; Cleal *et al* 1995, 154). It is overlain by east-west oriented ridge and furrow, and furrows of a second plough regime on an alignment parallel with the A303, which explains the interruptions.
2. A small circular feature, too small for a barrow, is located south of the disc barrow Amesbury 10 and c10m from the A303 boundary.
3. A palimpsest of plough marks is visible. A block of the west-east oriented ridge and furrow, broader than that shown on the earthwork plan, was recorded by the scan, aligned on the A303 and extending right across the western third of the Triangle. While the earthwork plan depicts it as more extensive in the east to the point where the land dips into Stonehenge Bottom, the angle lighting of this particular plot does not highlight the declining land so well. South-east oriented ridge and furrow in the north-west corner aligned on the fence alongside the A344 appears to overlie the east-west oriented marks. North-east oriented ploughing in the western third was oriented on the old by-way.
4. A rectangular feature in the far eastern apex of the triangle possibly associated with Stonehenge Cottages.

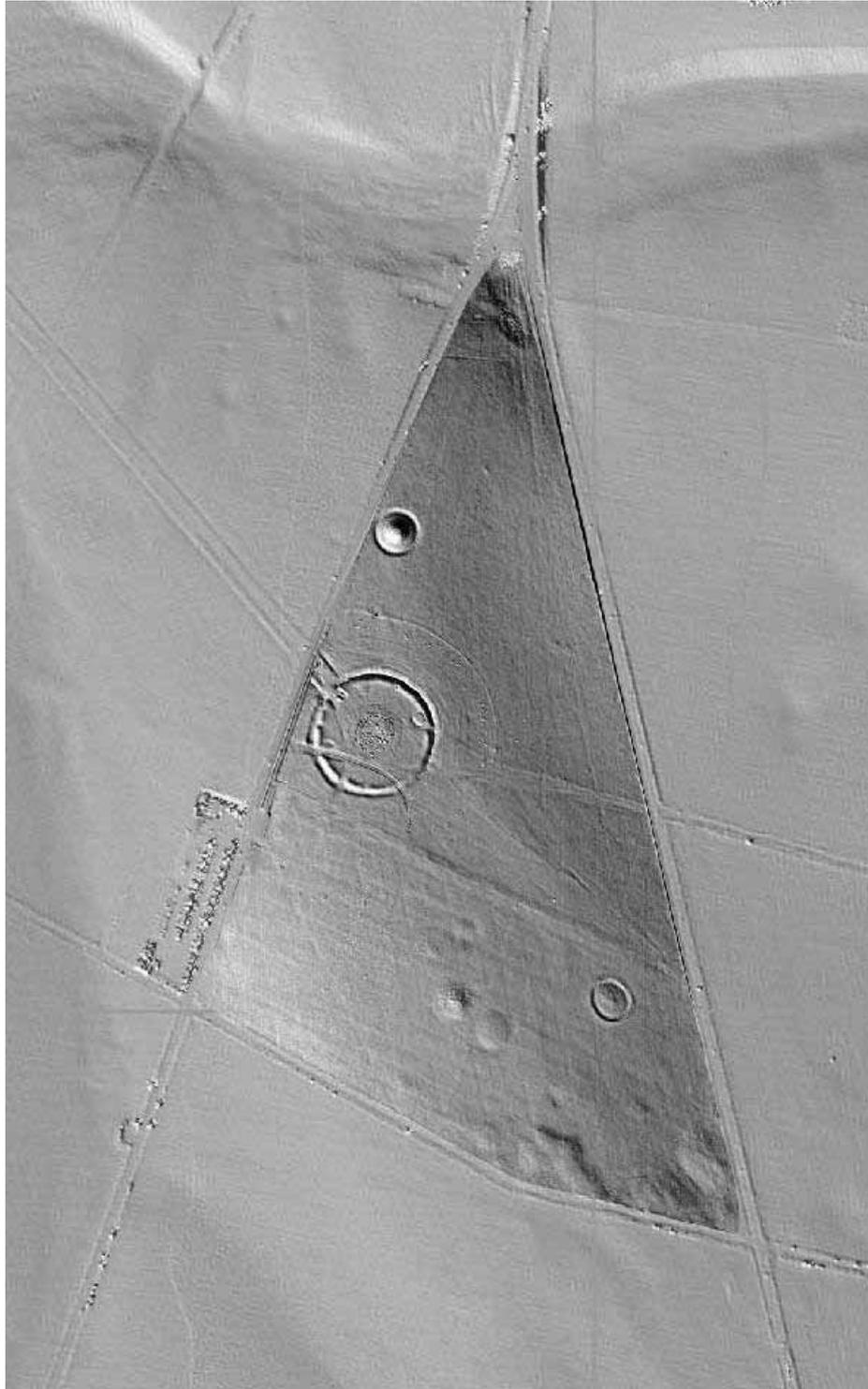


Fig 10a Laser scan of the ground surface of the Triangle with lidar background of surrounding area, lit from the north-west (north to left). Earthworks in the east, the barrows and RFC aerodrome (bottom) stand out well. Note the linear hollows alongside the A303 (right) that ascend from Stonehenge Bottom at the apex of the Triangle. The sharply depicted curving line beyond the Stonehenge enclosure is an artefact of the scan, i.e. the vegetation to one side of the English Heritage walkway. Lidar ©Environment Agency (December 2001).

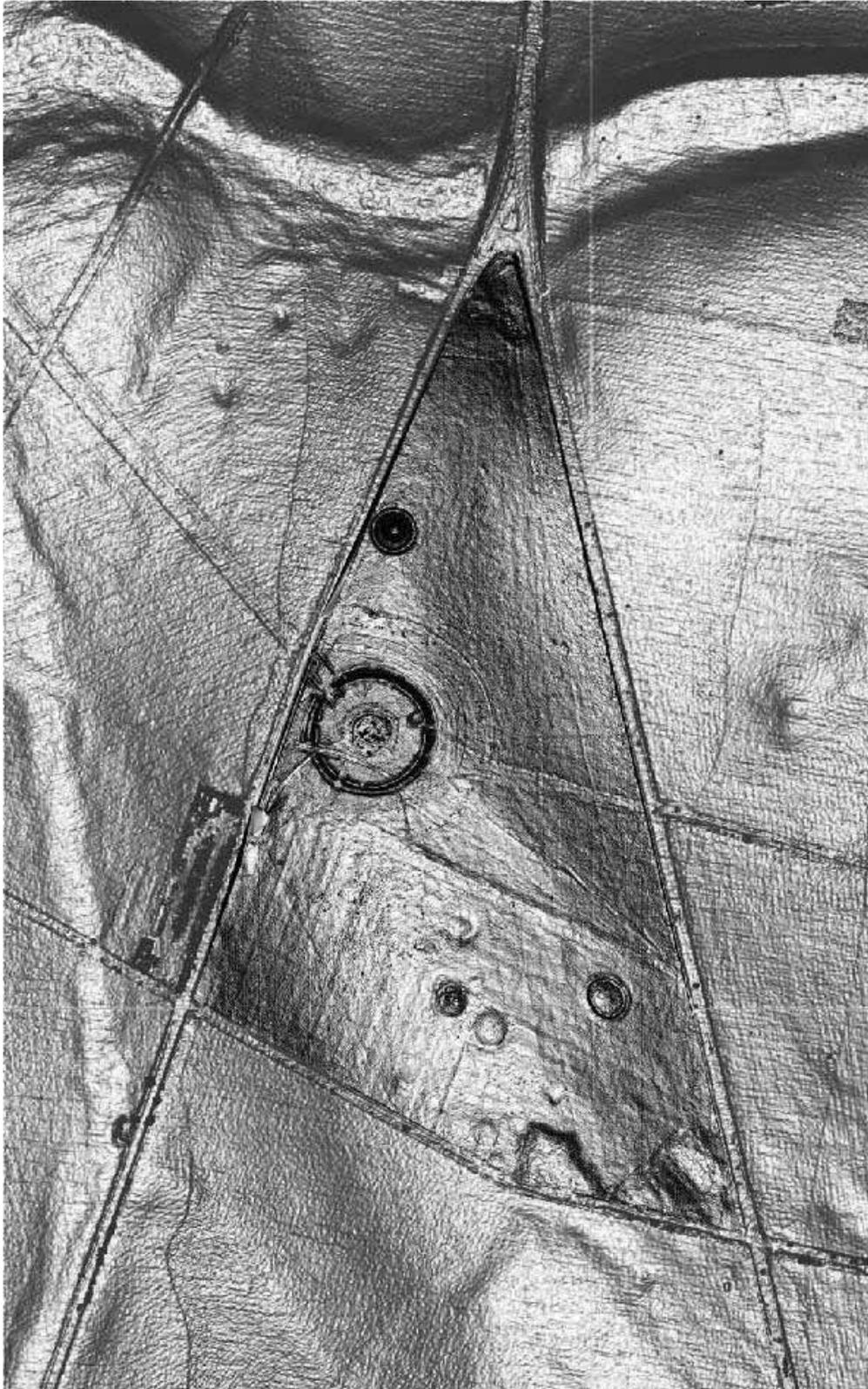


Fig 10b Terrain model using the laser scan of the Triangle set within a lidar plot of the wider area with north to the left. The Triangle is literally covered with earthworks. The palimpsest of cultivation episodes (bottom) stands out particularly well and linear trackways are highlighted both north to south and east to west. The earthworks of the RFC aerodrome can be traced into the field to the west (bottom) where, despite being almost levelled they are picked out by the lidar. Lidar ©Environment Agency (December 2001).

5. An area of disturbance in the far eastern apex of the Triangle, perhaps rabbit burrowing or a soakaway for the custodians' cottages.

6. A linear feature between barrows Amesbury **5** and **10** and beyond towards the road. This is on a different alignment, north-north-west, to all other features. It is not visible in the view depicted in Figs 10 a and b, even when the scale is enlarged. Hardie (2011, 16) suggests that it may be an old fence line.

HISTORIC AIR PHOTOGRAPHS AND THE NATIONAL MAPPING PROGRAMME PLOT

A number of early aerial photographs shed light on the earthworks of Stonehenge Down and depict, in particular, the Stonehenge Aerodrome as well as shedding some light on aspects of Hawley's excavations. The aeronautical aspects of the Stonehenge Landscape will be the subject of a separate report (Barber forthcoming).

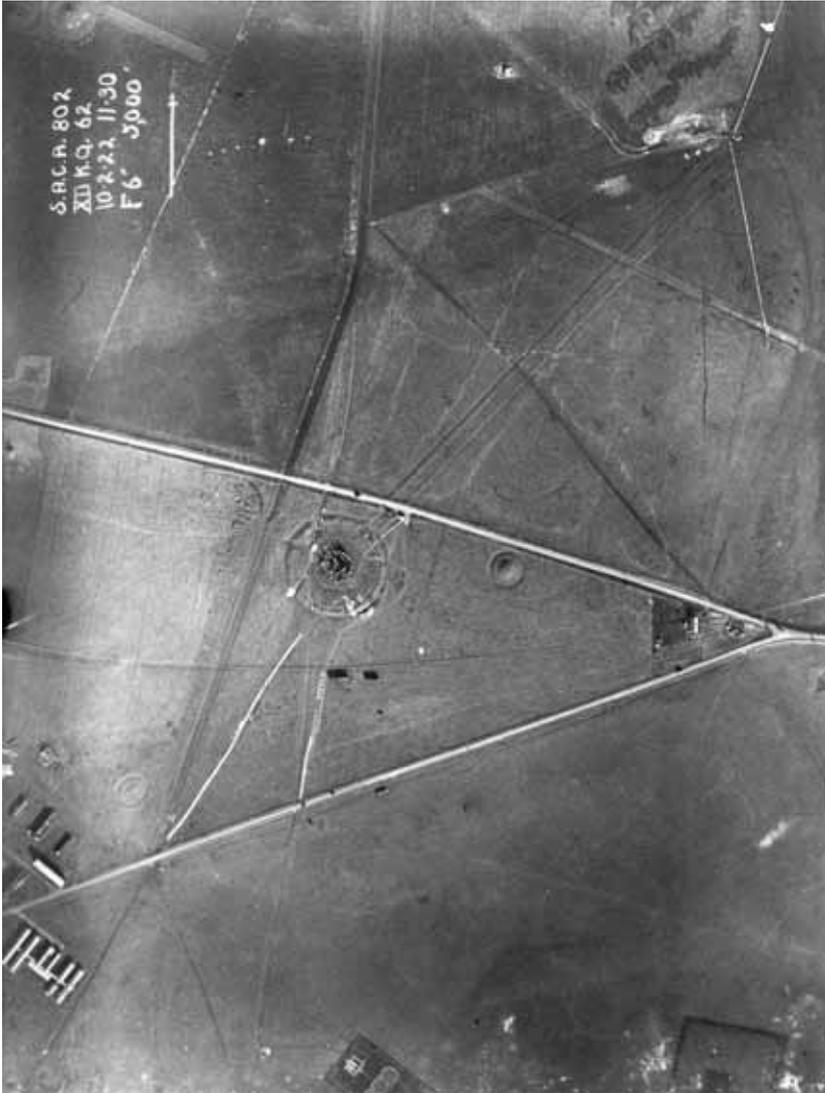
An RAF vertical photograph taken on 10th February 1922 (NMR CCC 8561/173) depicts some of the buildings belonging to Stonehenge Aerodrome, which had actually been disused since the previous year, but which demonstrates just how close wartime military activity came to Stonehenge (Fig 11). The aerodrome buildings are in process of removal. The aerodrome shares the same orientation as Stonehenge and its Avenue in order that the buildings would not interfere with solar alignments at the solstices, hence the rather awkward fit between RAF buildings and the line of the A303. Ridge and furrow cultivation can be seen on a north-south orientation to the west of Stonehenge.

The photograph was taken just a few years into Hawley's excavation campaign and features associated with this are visible, including: the huts to the south of Stonehenge provided by the Ministry of Works with what appears to be a latrine hut to the south of them; a number of trackways or vehicle tracks connecting Hawley's huts; the excavation sites; the surrounding roads and trackways; a series of white markings on the photograph close to the more westerly of the huts represent some of the pits, known as 'Hawley's Graves', in which quantities of artefacts from the excavations were re-buried; and excavation trenches can be seen within the monument itself. The custodians' cottages are present in the apex of the Triangle (right).

A possible linear earthwork approaches Stonehenge from the south. It appears to join with or be associated with one of the former paths cutting across the monument. To the south it merges with one of Hawley's tracks at the A303 and continues south beyond the A303 as a slighter feature.

Immediately west of Stonehenge and south of the A344 are what look like irregular mounds, possibly of soil. These may be related to the works undertaken to shift the boundary and trackway to the west, from its former position running across the monument, but it is worth recalling the early illustration of 1575 (Gough 1806: Bakker 1979) in which barrow diggers are depicted in this location.

An RAF oblique photograph taken on 12th July 1928 (NMR CCC 11796/4519) from the north-east, towards the end of Hawley's lengthy excavation campaign, shows the huts still in position and tracks created by the activities of Hawley and his workmen that appear more prominent than many of the longer-established tracks that had fallen out of use in the early years of the century (Fig 12).



*Fig 11 RAF vertical:
NMR CCC 8561/173
10th February 1922.
The gently curving
line that bisects the
Triangle from left to
right is a crack in the
glass plate.*

There is a disturbed area of ground to the south of Stonehenge and west of Hawley's Ministry of Works huts. It is not clear what this represents – perhaps turf removal.

A run of overlapping verticals was taken by the United States Army Air Force over the Stonehenge landscape on Christmas Eve 1943, in what seem to have been near-ideal lighting conditions for picking out low earthworks via shadow (NMR US/7PH/GP/LOC122/1022 24th Dec 1943). Most obvious, perhaps, are the earthwork traces of the now completely dismantled First World War aerodrome (Fig 13). Hawley's latrine hut seems to have been retained, perhaps for use by the custodians. The custodians' cottages have been removed.



Fig 12. An RAF oblique view taken on 12th July 1928 – NMR CCC 11796/4519.



Fig 13. One of an overlapping run of vertical photographs taken by the USAAF in 1943 – NMR US/7PH /GP/LOC122/1022 24 Dec 1943.

The National Mapping Programme plot

The aerial plots incorporate material originally prepared for the National Mapping Programme (Barber *et al* 2003, 148). In this, round barrows Amesbury 1, 2 and 3 are depicted as mounds without ditches, while Amesbury 15 is shown with a second ditch, concentric to that visible on the surface. Round barrow Amesbury 4 is recorded simply as concentric ring ditches, as is Amesbury 5 (Fig 14). Interestingly, Amesbury 7 shows as an elongated, long barrow-like, ring ditch with causeway or entrance at the south-west corner. The form suggests that it may have been a 'short' long barrow (see below). Amesbury 9 is recorded as concentric ring ditches with slightly flattened sides on the north-east and south-west.

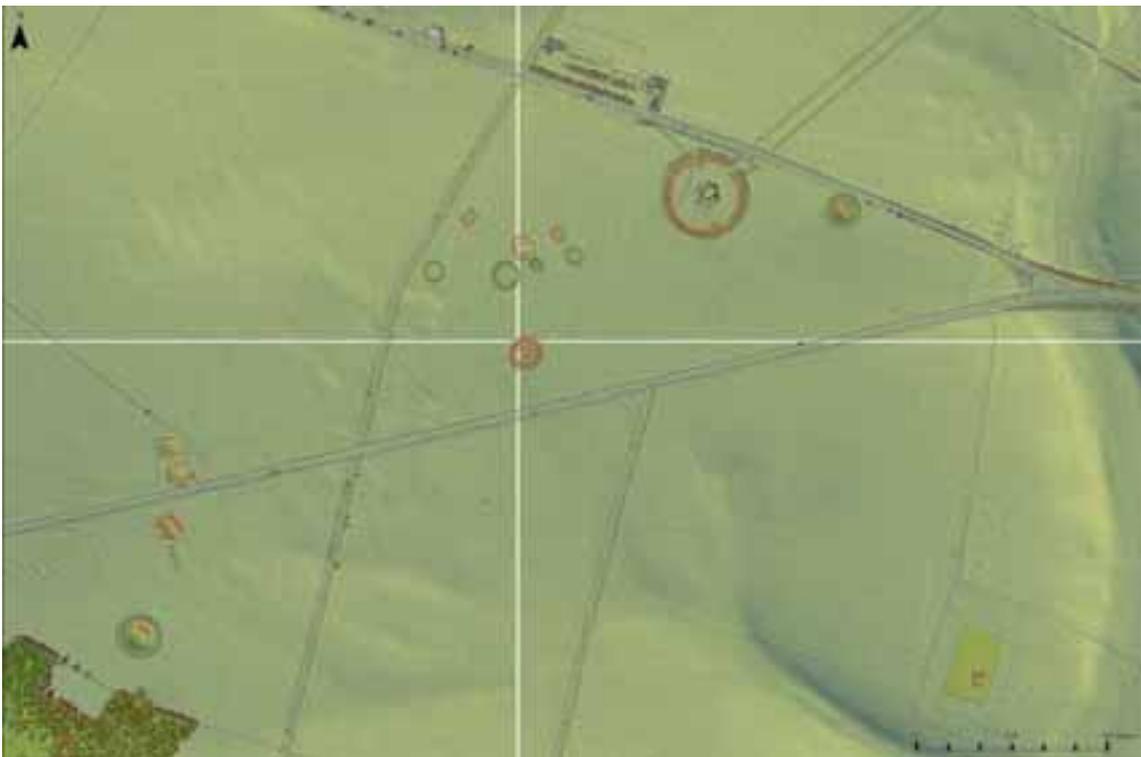


Fig 14. National Mapping Programme plot of ring ditches set against lidar background at 1:10,000 scale. Lidar © Environment Agency (December 2001).

To the west of Stonehenge lies a complex of 'Celtic' fields (Fig 15). They do not appear to be wholly co-axial and may have aggregated and accumulated through several stages of activity, and by incorporating what appears to be a trackway the configuration suggests an

intensity of use such that settlement may be present among the complex. At least three 'Celtic' field units, perhaps more, appear to be present but certain elements connect across each and it may be that originally separate land units were later amalgamated. The westernmost component comprises fields set on a generally north-eastern though slightly curving orientation. At least seven axial strips can be identified, a number of which have sub-divisions. This unit is bounded in the east by a sinuous but generally north to south oriented bank and ditch, east of which the fields have a more irregular layout, possibly the result of assarting in stages. Closer to Stonehenge, the fields adopt an entirely different character. They are much smaller in size with long thin strips and a northerly or north-north-westerly orientation. Where cross-divisions occur they demarcate very small units.

The boundary ditch that separates west and central units may be a later linear ditch. Towards its southern end it bows to the east to avoid or incorporate an area within the fields. A later curvilinear enclosure is set in this location, partly overlying the boundary. It may represent the site of a group of barrows depicted by Hoare (his number 12). Hoare reported them, three bowls and a saucer barrow, as being under the plough (1812, 126) and it is conceivable that materials were spread over the linear ditch.



Fig 15 National Mapping Programme plot of features on Stonehenge Down; red features are those identified as banks and green as ditches.

A trackway comprising parallel banks and oriented from west-north-west to east-south-east at least in part appears to follow the line of an earlier dominant field boundary and links the western and central groups of fields. It extends for a considerable distance across the Down and may have its origins as a linear ditch. Attached to the northern side of it is a kite shaped enclosure demarcated on north and east sides by double banks – perhaps with a ditch between them.

A second linear, the Palisade Ditch that cuts north-eastwards across the Triangle into Avenue Field, emerges from and respects the right angled corners of the 'Celtic' fields and can be traced across some of the 'Celtic' fields as a bank. A secondary bank and ditch emanate from it a little to the west of the Triangle and curve north-westwards. Excavations here indicated that it is of Later Bronze Age date (Parker Pearson *et al*/2008). A third linear appears to terminate in this general area on the summit of Stonehenge Down. It approaches from the south-west and passes close to Amesbury 15 in a north-easterly direction and changes course a little to the west of long barrow Amesbury 14, just to the south of the A303 before leading north-west to disappear amongst the field system. This is a northern extension of the linear denoted by the RCHM as 'g' (1979, fig 14, 28-9).

The outline of aerodrome buildings is plotted as extending across the A303 road (Barber forthcoming). The line of the military railway is also depicted following the contours, curving to the north before returning and threading its way between Amesbury barrows 1 and 2.

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Landscape history

The villages on the chalk downland in this part of Wiltshire tend to be spaced along the rivers and streams, while the accompanying parish boundaries incorporate strip-like estates that in each case extend away from the valley onto the higher downland (Bonney 1979). Thus a string of settlements, Maddington, Shrewton, Rolleston, Winterbourne Stoke, Berwick St James and Stapleford, occur along the River Till to the west, while Figheledean, Durrington, Bulford, Amesbury, Wilsford and Lake occupy similar positions along the River Avon in the east. In most cases the higher downland on the interfluvies, set at a distance from the settlement centres, has been used as sheep walks throughout the historic period and has often escaped cultivation (McOmish *et al*/2002). This, rather than any curiosity factor, is likely to be one of the chief reasons why Stonehenge and many of the monuments around it has survived.

There is no mention of Stonehenge in the Domesday Book, unsurprisingly. Two entries for the settlement at Amesbury were made, the major one of which indicated that before the Conquest it was a Royal holding and therefore not assessed for taxation. It was evidently a large centre, larger than Old Sarum (Salisbury), with some 85 villagers and 56 smallholders and where the king had 55 slaves – evidently a place of considerable importance. There was arable land for 40 ploughs and an extensive expanse of woodland nearby (presumably mostly in the ancient Bentley Wood to the north-east of the parish, rather than around Stonehenge), with a slightly smaller expanse of pasture measured at 4 leagues long by 3 leagues wide (Thorn & Thorn 1979, 1-3, 24-6). The latter might be expected to be open downland which could have included the area of Stonehenge Down. A second entry indicates that a small estate at Amesbury amounting to 3 virgates, on which there were 2 cottages and three slaves, was let to an individual by the name of Osmund. It may be that this settlement became West Amesbury, which lay to the west of the town and was situated alongside the bank of the River Avon below the western slopes of the hillfort known as Vespasian's Camp. Whether or not this is so, it is the West Amesbury settlement that during the medieval period encompassed the south-east, river, end of the Stonehenge Avenue and incorporated Stonehenge Down within its manor.

Despite being an obvious boundary marker, the site was evidently avoided and, while mentioning several barrows, a perambulation of 1639 (amongst the Seymour Papers) does not mention the stones. Curiously, Stonehenge lay within Salisbury Hundred rather than Amesbury; the Hundred boundary took an intriguing northern loop to specifically incorporate the site. This is an unusual procedure for the open downland where boundaries are often vague and at some unrecorded point during the past it would seem that there was specific claim over the site. Why this should be is intriguing and an aspect of the site's history worthy of further research.

Early records for Stonehenge Down are few and, set at the limits of the parish in an area unlikely to be under cultivation, there was little need for manorial dispute or documentation. A croft and toft 'under the hill of Richard Panysfote on the west side....beyond the way leading to Stonehenge' was mentioned in a claim for access rights in 1379 (Pugh 1947, 12). It also allowed for 31 sheep to feed on the 'common pasture' and it seems likely that this referred to the downland beyond the open fields, i.e. the area later known as Stonehenge Down. Documents indicate that in 1515 there were some 1800 sheep pastured in the manor, notably on the hill 'knoen as Earles Down and South Down' [potentially Coneybury and King Barrow Ridge] and Farm Down which 'lyeth next the Great Stones callyd Bound' (Institute of Historical Research: Seymour Papers 12, folio 252) and it is this sheep-grazed downland that King James I and Inigo Jones will have encountered in their visit to the site in 1620 (Jones 1655). By 1621, the manor of West Amesbury held with it the right to pasture 150 sheep in 'the common fields and upon Stonehenge Down' (*ibid* 110).

A map schedule thought to date to 1726 (Wiltshire History Centre 944/ 2MS), which describes the lands belonging to the Duke of Queensbury, refers to the area as Stonehenge Sheep Down, but questions whether the land 'belongs entirely to Mr Haywood, or if his Grace has any other Right than being Lord of the manor'. The same schedule indicates that two farms, the Westward Farm and Homeward Farm, had interest in the area. A part of Stonehenge Down was to be ploughed, although the part referred to specifically as Stonehenge Sheep Down would not be. Both were tenanted by Mr Philip Fleetwood, but it is not clear whether he carried out the proposal to cultivate. A Field Book referring to a *Plan of the Manors of Ambresbury Earls and Ambresbury Priory* surveyed in 1774 by James Crow (Wiltshire History Centre 944/3) mentions Stonehenge Down as amongst land farmed from West Amesbury Farm but unfortunately the map to which it refers to cannot be traced.

Further information can be obtained from the schedule accompanying a map of *Amesbury Estate* of c1824 (Wiltshire History Centre 283/2190) which describes the area as far west as the parish boundary incorporating the ground immediately north of the Shrewton Road (A344) as Stonehenge Down. South of the London Road (A303) lay Abbey Down and Sheep Down. An area alongside the Shrewton Road reaching to within c100m of Stonehenge was separately enclosed (or at least marked on the map as such). At this time Stonehenge formed part of West Amesbury Farm and was let to Mr Robert Pinkney on a year to year basis. The area was still farmed by him over 20 years later when the Tithe Map for Amesbury was prepared in 1846 (Wiltshire History Centre TA Amesbury). In contrast, the land alongside the Shrewton Road (the A344) immediately west of Stonehenge that had been marked out on the earlier map and called *Burnbake* had been converted to arable. This map depicts Stonehenge itself as being situated on what was now called West Amesbury Down and still in pasture.

Certainly pressure on the Downs increased throughout the 19th century, such that in 1876 William Long commented that 'Cultivation of the down adjoining Stonehenge is

gradually closing in on it and on the west side has already resulted in the obliteration of the group of barrows' (1876, 186). He went on to record that the smaller barrows in the Stonehenge Group had been 'nearly obliterated by a farmer who had ploughed up part of the down nearly to the stone circles...All traces of the group adjoining Stonehenge have disappeared...' (ibid, 198 footnote) and again, 'It is to be hoped that our grand-children will not have to look for Stonehenge in a field of turnips' (ibid, 236). The RAF vertical photograph of 1922 (see Fig 11) depicts the traces of cultivation to the west of Stonehenge, with north to south oriented furrows, and this land-use appears to have continued until the by-way was moved to its present position during the 1960s. There may also have been episodes of cultivation during the 20th century specifically to erase the evidence of the RAF and wartime paraphernalia, for the aerodrome earthworks appear to be rounded off. Cultivation was evidently carried out in an orbital fashion immediately around the monument some time after the trackway to the west of the enclosure was moved in the 1960s, perhaps in an attempt to clean up the site of extraneous earthworks. The earthwork survey recorded such ploughing (Field & Pearson 2010) and it can be seen on the laser scan reported above (though caution is required as part of the image reflects taller grass growth alongside the fenced tourist route). An aerial photograph (NMR SU 1242/43) taken in 1965-7 depicts marks perhaps representative of these features, though it is not clear whether they are of cultivation or the result of hay making.

Beyond use as a sheep down, there is little evidence of other land-use activity during the historic period. Cultivation, if and when it occurred, is likely to have been of short duration and specifically in response to economic catalysts. The historic picture can be contrasted with archaeological evidence of the presence of field systems nearby in antiquity. These are generally taken to be of Bronze Age or Romano-British date but could have remained in use into the Saxon period and longer, perhaps until local landowners introduced sheep in a major way in the 13th century. Such a scenario would fit with the recent evidence obtained at Stonehenge itself of nearby cultivation in the Saxon period (Darvill and Wainwright 2009).

Antiquarians

While several travellers and antiquarians, Camden (Gough 1806), Aubrey (Fowles 1980, 698-9), Defoe (1724-, 200-201) and others, appear to have commented on the number of barrows of the area, it was left to William Stukeley to report on them in any detail. He wrote that westward of Stonehenge is 'a group of barrows whence *Stonehenge* bears east-north-east. Here is a large barrow ditch'd about, but of an ancient make. On that side next *Stonehenge* are ten lesser, small, and as it were crouded together' (1740, 46). If Stukeley was right about the number it would appear that some have since been completely levelled and remain to be rediscovered. However, the extent of the area to the west of Stonehenge to which he referred is rather unclear. It could be that he was

including those further west (Amesbury 1-3, 15, and 107-111) adjacent to the A303. 'It would seem, that a man and his wife were bury'd in the two larger, and that the rest were of their children or dependants. One of the small ones, 20 cubits in diameter, I cut thro', with a pit nine foot [2.75m] in diameter, to the surface of the natural chalk, in the centre of the barrow; where was a little hole cut. A child's body (as it seems) had been burnt here, and cover'd up in that hole: but thro' the length of time consum'd. From three foot [0.9m] deep, we found much wood ashes soft and black as ink, some little bits of an urn, and black and red earth very rotten. Some small lumps of earth red as vermilion: some flints burnt thro'. Toward the bottom a great quantity of ashes and burnt bones' (ibid). The size of this mound (20 cubits = c 9m) suggests that it may have been one of the smaller ones beside the A303 (Amesbury 107-111).

However, Stukeley investigated others and noted that 'in a great and very flat old fashion'd barrow, west from *Stonehenge*, among such matters, I found bits of red and blue marble, chippings of the stones of the temple. So that probably the interr'd was one of the builders' (1740, 45). This is likely to be Amesbury 5 since it fits the description neatly. There are further details in Burl and Mortimer's transcript of this event that indicates that a large number of fragments of animal bones were discovered just beneath the topsoil along with some pieces of bluestone. Beneath this was a thick deposit of ashes again with broken and scattered pieces of bone and fragments of burnt pot. At over a metre deep he still encountered scattered bone fragments, including part of a human leg bone (Burl & Mortimer 2005, 104-5).

Over 75 years later, William Cunnington excavated a number of barrows in the area. In the summer of 1802 'with Mr Coxe we opened several of Stukeley's druid barrows [i.e. disc barrows] and others. The first druid barrow we opened was exactly a furlong [201m] south-west of Stonehenge. In the area was a small oblong tump or barrow in which we found a cist containing burnt bones but without arms or beads. This barrow had had a prior open, but whoever was at that trouble did not find the above, yet I believe they must have found a skeleton as we found a few human bones in our researches' (Devizes Museum Cunnington MSS Book 2). The numbered map provided by Hoare (1812, 127) confirms that this is Amesbury 10 and the 'oblong tump' fits the description neatly. Hoare went on to list discoveries in the other barrows. 'No 16 [Amesbury 4] is a mutilated flat barrow, 76 feet [23m] in diameter and only 3 feet [0.9m] in elevation. This appears to have been one of these opened by Dr Stukeley' (1812, 127). The diameter closely matches Amesbury 4; however, the latter is hardly 'great and very flat' and if indeed opened by Stukeley it may not be that mentioned in the account above. Hoare continued that 'During our researches in this *tumulus*, we perceived that a long section had been made, and found the bones of two skeletons which had been interred on the floor, also several pieces of stag's horns, animal bones, &c as well as some fragments of sarsen stones, similar to these which form the great trilithons of STONEHENGE. On clearing out the earth from this section, we observed a small heap of whiter soil, which having removed, we came to the primary interment of burned bones within a fine circular cist and found a spearhead of brass in fine preservation, and a pin of the same metal. It is

somewhat singular that these burned bones (a more than usual quantity) should have laid unmolested in a barrow where there were a hundred rabbit holes. On removing the earth from over the cist, we found a large piece of one of the bluestones of STONEHENGE, which Sowerby the naturalist calls a horn stone, which, with the sarsen stone, is a very singular occurrence and decidedly proves that the adjoining temple was erected previous to the *tumulus*. . . . the stones found in the barrow [including the sarsen] are pieces chipped off, (I am sorry to say) like those now daily knocked off from the great fallen trilithon' (ibid). It seems unlikely that Stukeley would not have commented on the skeletons or noticed the bronze. This being so it would appear that barrows Amesbury 4 and 5 may both contain stone fragments from the Stonehenge settings. Hoare also remarked that he had found 'one or two pieces of the chippings of these stones' in Amesbury 11 (1812, 127).

Hoare went on that 'No 17 [Amesbury 10a] is a long barrow in which we made no discovery. No 18 [Amesbury 5] is injured by rabbits. No 19 [Amesbury 6] seems to have been one of those opened either by Lord Pembroke or Dr Stukeley who had been successful in finding the interment in a long cist. No 20 [Amesbury 8] This barrow had been opened before and contained the interment of a skeleton. No 21 [Amesbury 7] and 22 [Amesbury 9] were unproductive. No 23 [Amesbury 11] Mr Cunnington attempted to explore this fine bell-shaped barrow some years ago but was unsuccessful. On a second trench, I found that in his former operations he had left off within a few inches of a large rude sepulchral urn inserted over a pile of buried bones, amongst which was an elegant pair of ivory tweezers' (1812, 128).

Most of these mounds appear to have been at least partly levelled during the 19th century. The Royal Commission on the Historical Monuments of England considered that they 'appear to have been deliberately reduced in height to facilitate ploughing in about 1848' (RCHM 1979, xviii) and the small group to the south-west, Amesbury 1-3 and 107-111, had by 1876 been 'nearly obliterated by a farmer, who had ploughed up this part of the down nearly to the stone circles' (Long 1876, 236, 198n).

Fairs

Stonehenge proved a fine and prominent gathering place for a number of functions and purposes. A fair was held there in late September with effect from 1680 and references to fairs held on Countess Down to the north may represent the same event (Crowley 1995, 46). Cricket matches were also played (ibid, 19), suggesting that an area c 20m by 3m may have been levelled, although no such feature has been identified.

Fargo Farm

A farmstead, described on maps as Fargo Cottages, was built on the summit of Stonehenge Down some 550m to the west of Stonehenge (RCHM 1979, xviii) and was

depicted on the Tithe Map of 1846 as well as the OS 25inch 1st edition map of 1877 (Figs 16 and 17). Its commanding position ensured that stock could be observed over a wide area of the down though it was open to the elements. It appears to have been little more than a field barn for West Amesbury Farm, though the cottages imply permanent presence at least during the latter part of its existence and it was presumably responsible for the continued cultivation of the area referred to as 'burnbake' fields enclosed by 1824 that lay to the west of Stonehenge and subsequently for the cultivation of the Stonehenge Triangle recorded by William Long (1876, 186, 236). The cottages and farm buildings appear to have been demolished around 1917 (Crowley 1995, 44) probably to make way for the Royal Flying Corps aerodrome.

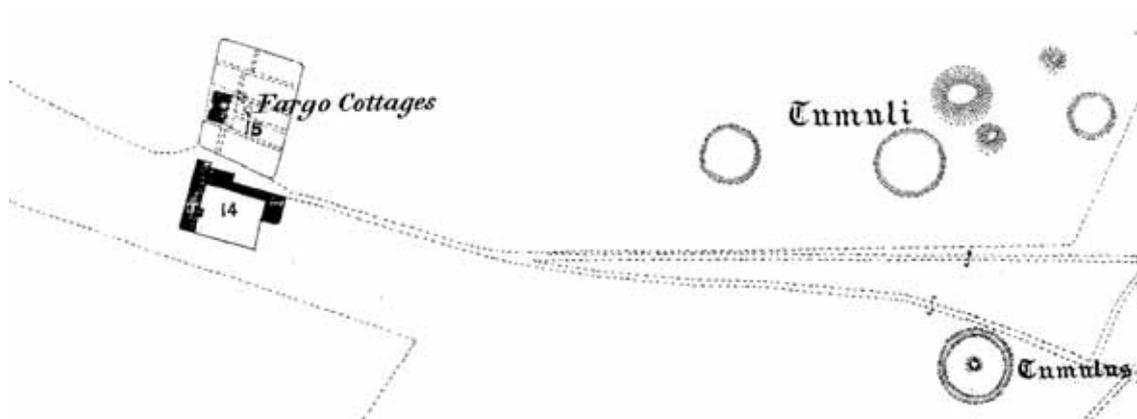


Fig 16. Detail of Fargo Cottages in 1877 with the field barn adjacent, in relation to the Stonehenge Down barrow Group; from the OS 1st edition 25inch map. Note the fence lines and trackways between the barrows.



Fig 17. Fargo Cottages and the farm buildings alongside, photographed from Stonehenge by R Langton Cole in 1881. NMR AL0913/006/02 © English Heritage: NMR.

Early military activity

The first large scale military manoeuvres on Salisbury Plain appear to have been held in 1872 and 1892, followed six years later by an exercise that involved over 50,000 troops (James 1987, 11-12). For the latter, a Military Manoeuvres Act allowed the roads to be closed and the event was brought to a conclusion with a 'Battle of Stonehenge', though this was probably wide ranging, as much of it appears to have taken place around Yambury Castle hillfort to the west (Crawford 1999, 10). Given the ubiquity of military trenching on Salisbury Plain, it is perhaps surprising that there is little evidence of this around Stonehenge. A prisoner of war camp, however, staffed by Australians, seems to have existed at the southern end of the Fargo plantation (Priddle 2003, 298) while the area also played a prominent role in the development of aerial warfare. A fatal flying accident had occurred before the war close to Airman's Corner, to the west of Stonehenge Down, when Captain Loraine and his observer Staff Sergeant Wilson were killed (James 1987; for the site Field 2009) and another, in which Major Hewetson died, soon after (James 1987; for the site Komar & Bishop 2010).

The use of aeroplanes in warfare became increasingly important as the First World War progressed and the area played a critical role in this development. The Royal Flying Corps initially comprised elements of both army and navy with a Central Flying School based at Upavon, some 13km to the north of Stonehenge, but in 1914 the Navy transferred its wing to the Royal Naval Air Service. Initially, the planes were used for airborne observation, in particular for the identification of artillery positions, but subsequently engagement with German aeroplanes became important, along with the strategic need to attack ground forces and airfields. Later in the war, the bombing of both military and civilian targets became frequent and over 40 German towns were bombed by British planes during 1918; as bombers were vulnerable to attack from fighter aircraft during daylight, night bombing became more frequent.

An aerodrome was established on Stonehenge Down to the west of the monument in 1917 for the training of bomber pilots (Clarke 2008, 58; Crowley 1995, 18; Crawford 1999, 61; James 1987, 170). This was one of five opened on Salisbury Plain that year (James 1987, 170; Clarke 2008, 58), initially with the aim of training pilots in co-operative methods of support for ground forces. The location of other military establishments nearby made Stonehenge Down an ideal location for this type of training. The site was essentially a finishing school for those who had reached a certain level of capability (Clarke 2008, 58), but it had a short and chequered life. From the beginning of December 1917, it was designated a Training Depot Station but this lasted little more than a month. The increased use of night bombing led to the need for a dedicated training centre and subsequently the School of Navigation and Bomb Dropping operated from the site from the beginning of 1918 until September 1919. Crawford (1999, 61) and Priddle (2003, 300) cite a probably anecdotal story that the Commanding Officer wanted Stonehenge demolished as it was hazardous to low flying aircraft, though it was some way off the landing strip. According to Delve (2005, 318-9) sixteen types of aircraft were used for

training, including Avro 504s and Handley Page O/400s. While the former had been in service since 1913 and used generally for training, the latter was then a state of the art twin engine biplane introduced in 1916 for long range bombing.

Covering an area of just over 100ha, the runway lay between the A303 and A349 and the main complex of buildings was constructed either side of the A303 early in 1917 (Ashworth 1990, 255; Crowley 1995, 18). The workshops and hangars lay to the north of the road and the domestic accommodation to the south (Priddle 2003, 298). In addition to numerous workshops, the buildings consisted of six paired General Service Sheds (Clarke 2008, 58 says eight), a repair shed, MT (Motor Transport) sheds and a number of timber and canvas Bessonneau hangars (Priddle 2003, 298; Delve 2005, 318-9). All of these were arranged on a formal north-east alignment bisected by the A303 road. South of the road, a triangular area incorporated domestic buildings, barracks and mess buildings as far south as Normanton Gorse. To the north the site extended as far as Fargo Plantation where accommodation was built for the night bomber crews. Four Handley Page sheds, along with several canvas Bessoneau hangars were provided along the south side of the A344 following the decision to use Handley Page bombers for training by the Royal Naval Air Service (James 1987, 181; Priddle 2003, 298; Clarke 2008, 58). A branch of the Larkhill Military Light Railway was constructed to serve the site, looping round from Fargo Plantation to run partly alongside and north of the A303 and between barrows Amesbury 1 and 2, but it was dismantled by 1923 (Crowley 1995, 16; see also Barber forthcoming).

The site subsequently provided accommodation for the Artillery Co-operation School, which the following year was transferred to the School of Army Co-Operation based at Old Sarum near Salisbury (Crawford 1999, 61).

Considerable pressure was placed on the military by the Society of Antiquaries, as the airfield buildings considerably distracted from the setting of Stonehenge, but its location close to the extensive military training area to the north and the bomb dropping zone at Yambury (Crawford 1924, 34) was valuable to the military (Crawford 1999, 95-6). Stonehenge Night Camp by Fargo Plantation was put up for sale in 1920, but the following year training was moved to Old Sarum Airfield and the rest of the buildings finally sold in 1922. The 1924 edition OS 25inch map (Fig 18) indicates that the area was being used as the 'Stonehenge Pedigree Stock Farm', evidently with living accommodation (James 1987, 171; Clarke 2008, 65; Crawford 1999, 95-6). In 1927 the buildings north of the A303 were purchased by a building company and finally demolished in 1929. The use of the area by the military is the subject of a more detailed report (Barber forthcoming).

Little is known of activity around Stonehenge during the Second World War, but Priddle (2003, 301) refers to the US Army 9th Air Force using a landing strip somewhere in the vicinity of the stones and it maybe that the First World War airstrip was still visible and was utilised.

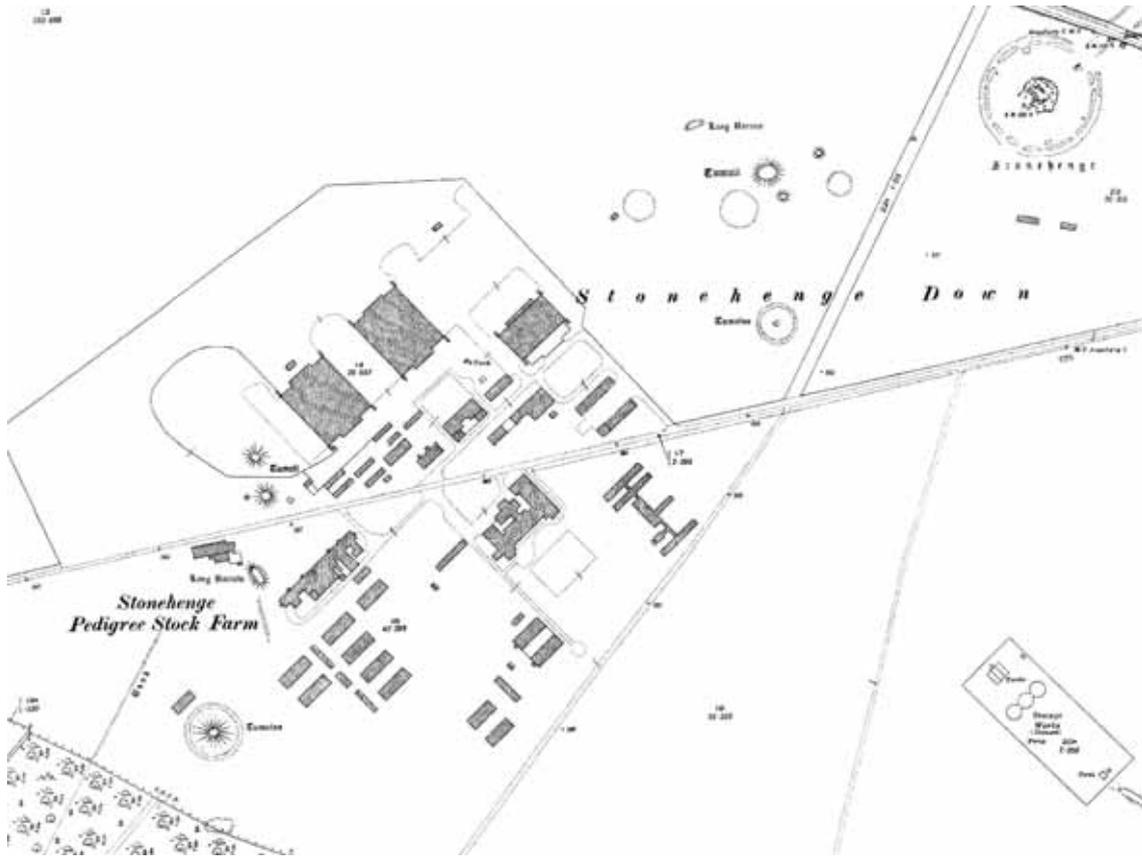


Fig 18. Detail of Stonehenge Down in 1924 taken from the 3rd edition OS 25inch map. No trace remains of Fargo Cottages although the long barrow (10a) originally noted by Hoare in 1812 is depicted for the first time. The aerodrome buildings are present but being used for agricultural purposes. Note the sewage works in the valley to the south of the A303 (bottom right).

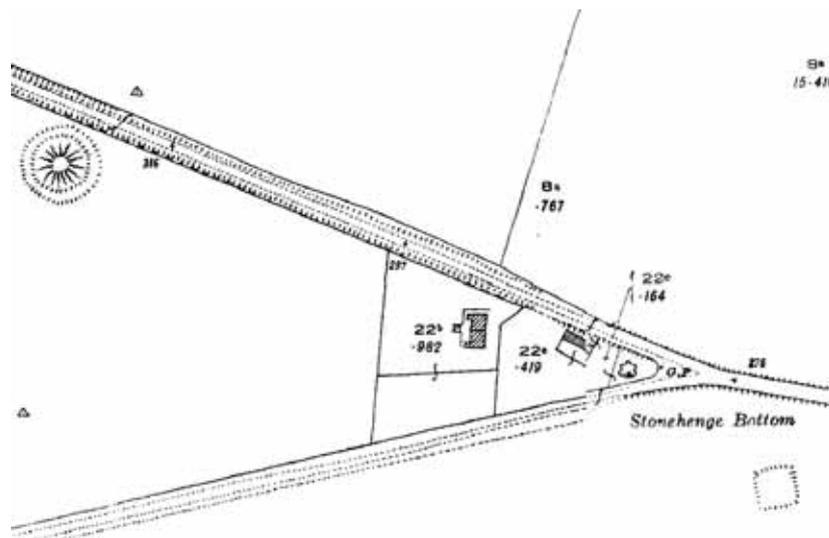


Fig 19. Detail of OS 25inch 3rd edition map of 1924 showing the Custodian's Cottages, or Stonehenge Cottages, in Stonehenge Bottom at the junction of the A303 and A344.

Cottages were built for the Stonehenge curators and site policeman in the 1920s (Fig 19). These lay close to the fork in the roads in Stonehenge Bottom and a café was also constructed to the north of them (Crowley 1995, 17). As a result there was some concern that the area might become one of housing development and led to an appeal for funds to purchase the land surrounding Stonehenge for the nation (Crawford 1999, 95-6). Following acquisition of the site by W E Chivers & Sons of Devizes in 1927, a Stonehenge Protection Committee was established to campaign and raise funds to purchase 1,444 acres of surrounding land for £35,000 which, it was agreed, when purchased the National Trust would administer. The high level appeal was signed by Stanley Baldwin and Ramsay MacDonald. The land was divided into three plots of which Plot A covered that part of Stonehenge Down to the north of the A303 and cost £8000. This was almost immediately purchased, which allowed demolition of the aerodrome buildings to take place. They were finally taken down in 1927, as were the cottages (James 1987, 171), though the last building was not cleared until 1930 (Clarke 2008, 65).

DISCUSSION

Routes and cultivation

Stonehenge has long been a tourist attraction and the hollowed tracks that converge on the site might be taken to represent evidence of this. Indeed it was reported as such in an earlier account (Field & Pearson 2010). Survey of the wider area, however, provides a different perspective, for most of these tracks actually pass by the monument and it may be that the stones were more of a way-marker on the otherwise featureless downs. Natural routes appear to have avoided the stones rather than lead to them and later traffic appears to have focussed on the accepted routes across the down; that is, the London to Barnstable and Amesbury to Warminster east to west highways and the Netheravon to Salisbury tracks that cross the area in a north to south direction. Ogilby's map, prepared sometime between 1669 and 1674 (Ogilby 1675, pl 32), depicts the highway from London as emerging between the King Barrows then crossing the down to Shrewton, passing a considerable way to the north of Stonehenge. The imparking of the area to the east of the King Barrows forced the highway to the south and was probably the catalyst for re-routing. An unfinished road cuts across the down to the north of Stonehenge, evidently emanating from south of the King Barrows and probably in an attempt to reconnect the traditional route, but construction was abandoned and instead the turnpike, when finally constructed c1761, took a course to the south of the stones. The new route to Warminster via Shrewton (the A344) was constructed sometime after 1773, ensuring that Stonehenge was bounded by roads to both north and south and the Amesbury turnpike advertised these as 'good for viewing Stonehenge' (Crowley 1995, 15-17). Certainly the conventions used on a map of the Amesbury Estate of 1824 (WRO 283/219) and on the Amesbury Tithe Apportionment of 1846 (WRO Amesbury T/A) suggest that the roads, with milestones placed alongside, were well-defined during the first half of the 19th century. Both roads were dis-turnpiked in 1871 (Crowley 1995 15-6) and with effect from 1878 responsibility for upkeep was handed to the County Council; nevertheless, once established, the road metalling will have focussed, encouraged and constrained traffic.

However, one group of tracks in the Triangle is set parallel to the A303 and appears to represent avoidance of the metalled highway; a second leads in the direction of the Fargo Cottages, passing between barrows Amesbury 5 and 10 *en route*. The OS 1st edition 25inch map of 1877 depicts a route doing just this (Fig 20). The Fargo Cottages are not depicted on the Tithe Apportionment and they can have been established no earlier than 1847. They must have been demolished prior to the aerodrome runway being established and the tracks therefore may have been in existence for little more than 50 years. The same may be true of the north to south routes. These are depicted on Andrews and Dury's Map of Wiltshire in 1773 as passing to the west of the stones. The map is small scale and it is likely that there are errors in the detail but it is clear that the tracks do not lead to Stonehenge, but past it. Some illustrations provide contrasting evidence. There is no indication of a track through the site on Wood's plan of 1747, though Gosslyn's

painting of 1784 does show one through the enclosure. Buckler in 1805 and Crocker in 1810, however, do not. A track certainly cut through the Stonehenge enclosure in 1820 as W H Hyett in 1820 depicted the vestiges of tracks on his plan, while Crocker's later illustration of 1826 also shows a track (see Field & Pearson 2010). As with so many of these routes on the open downland they were apt to shift position frequently across quite large expanses of ground. A direction post was positioned on Durrington Down to the north and it is probable that Stonehenge also served as a guide to traffic.

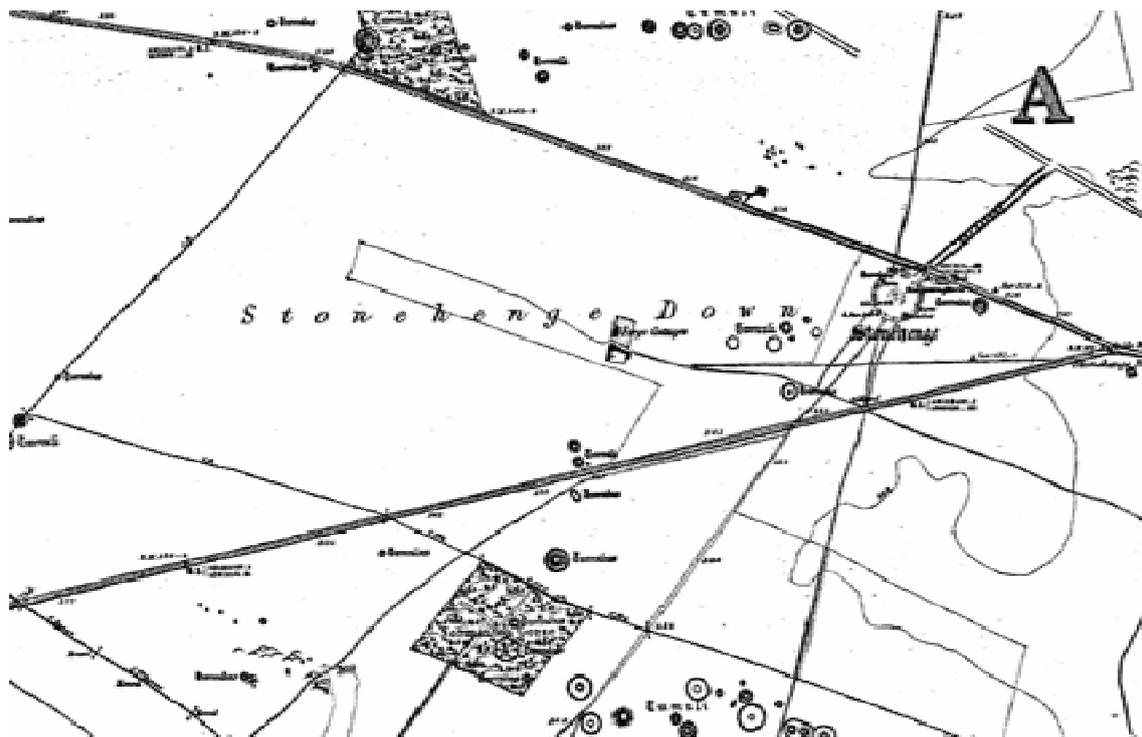


Fig 20. Detail of Stonehenge Down taken from the OS 1st edition 6inch map of 1887. Trackways from the south are focussed on Stonehenge at this time; the fence to the west of the site may have been instrumental in funnelling traffic in that direction. It probably also demarcated the eastern extent of the cultivation at that point in time. Note that the disc barrow that appears to have escaped cultivation lies to the south and east of the fence. Note also the position of a trig point to the south of barrow Amesbury 11.

It is noteworthy that enclosure and cultivation of part of Stonehenge Down at some time shortly before 1824 (WRO 283/219) provided restrictions on those tracks to the west of Stonehenge and were probably responsible for funnelling the route into a narrow corridor. It might therefore be considered that earlier traffic routes had less impact on Stonehenge than imagined, but in any case were entirely eradicated by the cultivation noted by Long (1876). This latter episode, in particular, may have potentially damaged much more than the barrows and it may be that the grassed chalk downland could have formerly supported all manner of archaeological subtleties prior to its enclosure. In addition, 20th-century cultivation up to 1943 will have damaged and obscured surface traces of earlier activity. Despite this, the present survey has demonstrated the presence

of a number of subtle earthworks that have some bearing on the interpretation of the site. What does survive is of great interest and supports and enhances the results of geophysical surveys carried out in 1994 (Payne 1995) and provides a fresh baseline for understanding the visible remains.

Long barrows

The earliest extant archaeological features on Stonehenge Down are the long barrows which, despite the cultivation, can be observed to considerable benefit. The results of fresh geophysical survey as part of the present Stonehenge WHS Landscape Project will be presented as a separate report (Linford forthcoming), but in the meantime, the results of the 1993-4 magnetometer survey (Payne 1995, fig no 258) provide some interesting detail to add to the discussion.

Little is known of the long barrow south of the A303 (Amesbury 14). Hoare (1812, 206) placed a trench at the southern, broadest end, expecting to find interments but found none. Subsequently, John Thurnam (1869, 180, 183, 184, 197) reported the presence of three primary skeletons 'closely intermingled', along with bones of *Bos longifrons*, *Cervus elephus* and a complete skeleton of a large bird that he thought might be a goose. One is put in mind of the bird bones encountered by Cunnington on the platforms beneath long barrows alongside the River Wylye, the potential heron in Knook long barrow, and a large unidentified bird in Sherrington long barrow (Eagles & Field 2004: Field 2006). Closer to Stonehenge, part of a white-tailed sea eagle was recovered from the ditch of Coneybury henge on the ridge to the east (Richards 1990, 150-154). In addition, Thurnam mentioned the presence of secondary interments found in a contracted position close to the surface. The nature of the burial rite suggests that the latter may be Beaker in date and the bank, or additional level, along the summit noted in the earthwork survey could be the covering for these.

The nature of a further long barrow identified by Hoare (Amesbury 10a) is in doubt. His trench resulted in 'no discovery' (Hoare 1812, 128), meaning that burials were not encountered. This would not be unusual for a long barrow but in this case its form cannot be confirmed and its status is therefore uncertain. It was not depicted alongside the other barrows in the group on the first or second editions of the OS 25inch map and Goddard (1913-14, 165) simply catalogued it as a 'small long barrow opened by Hoare' rather than recording any contemporary field observations. Soon after, in 1914, Maud Cunnington (1914, 408) noted that it was 'practically ploughed out'. It was, however, presumably at her intervention that it appeared for the first time on the 1924 edition of the OS 25inch map where it was marked as a simple long mound with slightly rounded ends and oriented east-north-east. Given that it had been 'practically ploughed out' a decade earlier this depiction is curious and one is left to conclude that the OS cartographers may have used Crocker's 1812 depiction. The orientation contrasts with that of the slight oval

visible today. An Ordnance Survey Field Investigator checking the depiction in 1971 recorded the mound as a denuded shallow oval 26m in length by 0.3m in height and those dimensions accord well with the present observation. No side ditches are visible, indeed no ditch at all, and none were recorded by geophysical survey in 1993-4 (Payne 1995, 498) or during the EH National Mapping Programme projects (Barber *et al*/2003, 148). Hoare's team were excellent field workers and well aware of the differences in barrow type and would undoubtedly have recognised a natural mound during excavation. Given that the area has suffered from cultivation it is quite possible that the mound has been shortened. However, there is no sign of this having occurred on the ground and no indication of, for example, a sharp cut in the side of the mound, or of removed material having been spread over the surrounding area.

In contrast, the earthwork plan (and aerial survey plot) depicts Amesbury 7 as a small, slightly oval mound with wide encompassing ditch. Crucially, the 1993-4 magnetometer plot indicates quite clearly that its buried form is that of an oval or 'short' long barrow. The ditches are depicted remarkably clearly as being continuous around the northern end but with two causeways at the southern. It is worth comparing the plans of Thickthorn Down (Drew and Piggott 1836) and Wor Barrow (Pitt Rivers 1898, 60-122) in Cranborne Chase, North Marden in Sussex (Drewett 1986) or the geophysical survey plan of Sheer Barrow on Figheldean Down (McOmish *et al*/2002, fig 2.13). Although very much larger than Amesbury 7, all display the characteristic causeways, albeit in slightly different configurations. Amesbury 7 is unusual in being aligned north to south and the orientation is curious, as it is atypical not simply in its cardinal axis, but in its relationship to the topography. Whereas almost all long barrows are placed sympathetically to the contours of the land, here the orientation is at right angles. Noteworthy and interesting is the small, shallow long barrow, situated among the Normanton Barrow Group (Wilsford 13) which is also most unusually aligned north to south. Unfortunately details of its ditch have been obscured by cultivation. A little further to the south-west, Woodford 2 (Harding & Gingell 1986), where the mound must have been in the region of 15m in length, is also aligned north-south and situated on a steep slope at the head of a narrow coombe, while a plough-levelled example, Amesbury 140, situated a little west of Vespasian's Camp and some 20m long by 12m between ditches and oriented north-north-west to south-south-east, is not dissimilar. Like the example at Stonehenge, a large levelled round barrow impinged on the latter and in both cases, as well as that on Normanton Down, the long barrow formed an integral part of a later cemetery. Hoare (1812, 128) found Amesbury 7 'unproductive', meaning that he did not find an interment.

Amesbury 7 is a mere 13m in length. This is small by any standards but nevertheless worth comparing with Alfriston, Sussex, where the mound was estimated to reach 14.5m and the excavator indicated that before excavation it appeared to be a round barrow (Drewett 1975) while the earlier mound at Wayland's Smithy was 16m by 8m (the ditches define an area of 20 by 11m) and which, like Amesbury 7 is oriented just east of north to south (Atkinson 1965, 127; Whittle 1991, 57). The 'short' long barrow on

Normanton Down, Wilsford 13, is rather longer, measuring 21m in length, while Sheerbarrow at Figheldean is 24m long.

Round barrows

Amesbury 1, 2 and 3 were formerly accompanied by five others, 107-111, as Hoare indicated that this was a group of eight barrows of different sizes situated next to the road. He stated that 'Two of these barrows are superior in size to the rest; the one nearest to the road [i.e. Amesbury 2] is large and bowl shaped; eighty feet [24.4m] in base diameter, and eight and a half [2.6m] in elevation, though it appears to be much higher. The men made a large section, supposing the interment would be found at a considerable depth, but they met with it at eight feet and a half, in a shallow oblong cist, where the burned bones had been interred in a box of wood. The adjoining large *tumulus* [Amesbury 1] produced an interment by cremation which had in former times been disturbed by rabbits. Some others of this group, though scarcely elevated above the ground, produced deposits of burned bones; in one of them, just under the turf, was found a brass spear head, and two of the others had been opened before' (Hoare 1812, 126). These latter were apparently of diminutive size but it can only be imagined that they were removed when the road way was widened in relatively recent times, although vestiges may still lie beneath the road verge. Hoare was able to observe them after the turnpike was constructed so they were intact, or at least, visible, then. One of this group, probably Amesbury 3, produced the Stonehenge urn, a Deverel Rimbury (bucket/barrel) of considerable proportions (see below).

Amesbury 1 and 2, a pair of round barrows of strikingly similar proportions, are situated exactly north and south of each other and just 12m apart. No ditch was recorded for Amesbury 2 though the damage here by the airfield and railway rules out any such observation based on the earthworks. Nothing was noted on aerial photographs but assuming the presence of a ditch it is unlikely that it would have intercut that of Amesbury 1. While the earthworks indicated that the latter was evidently a bell barrow, architectural detail is lacking in its southern counterpart.

The enormous flat topped bell barrow, Amesbury 15, stands a little apart, almost providing a spatial link with the Normanton Down barrow group, but it also provides a backstop to the solar axis of Stonehenge. Hoare (1812, 205-6) described it as the 'most beautiful bell-shaped barrow in the plains of Stonehenge'. When excavated, a skeleton within a shallow cist was discovered. It lay on a plank of wood with the head towards the north-east and accompanied by a bronze Snowhill type dagger in a wooden sheath along with a bronze spearhead (Annable & Simpson 1964, 56, No 363; Gerloff 1975, 101, No 160). At the feet was a Beaker, which unfortunately was broken, along with an unrecorded quantity of antler, with more antler placed by the head. Three diverging cavities set around the burial and traced through the mound matrix were thought to

represent decomposed timber which may have been some kind of scaffold or perhaps supported a roof or covering.

Beyond recording its presence and dimensions, little supplementary detail can be added regarding Amesbury 4. The National Mapping Programme plot (see Fig 15) introduced the possibility of concentric ditches, though there is no sign of this on the magnetometer plot. Payne (1995, fig 258) recorded the ditch and the plot showed a slight deviation or protuberance in the north-east with anomalies in the south-west and south-east. Cunnington's excavation revealed a primary cremation in a circular cist with bronze spearhead and pin with a bluestone fragment placed over. The 'spearhead' appears to have been a grooved knife dagger with three rivet holes for attaching the handle (Annable & Simpson 1964, No363; Gerloff 1975, 170 No322). Two secondary inhumations were found in a long trench along with antlers and sarsen.

Amesbury 5 is the barrow of greatest diameter in this group although it is relatively plain and flat topped. The ditch is certainly continuous, for the magnetometer plot (Payne 1995, fig 258) depicts it as such in the area where the earthwork is no longer present. The 1993-4 geophysical survey did, however, record some disturbance in the north-west and an anomaly in the south-east. Whether this is Stukeley's 'great & very old flat barrow' is unclear but as noted above it fits the description better than other mounds in the vicinity. If so, the presence of hard stone 'like the altar of Stonehenge' found in the mound matrix could hardly be surprising given its proximity to the stones. The description of a variety of animal bone set among ashes and burnt chalk is intriguing and invokes ideas of feasting, although the account may equally be of midden material. Unfortunately, Hoare's investigations came to nought, the barrow being infested with rabbits.

Today Amesbury 6 is the most striking of the group to the west of Stonehenge. It displays a considerable amount of surface damage but, despite this, there is sufficient clarity for the earthwork survey to reveal that there is likely to be more than one phase of activity, for an addition to the main mound can be ascertained. There is no indication of the respective age of this and records of antiquarian excavation do not assist. Hoare (1812, 128) found that this barrow had been previously excavated and thought it must be by Stukeley or Lord Pembroke who had found a burial in a cist dug into the chalk. Intriguingly the 1993-4 magnetometer survey provides detail of an earlier phase (Payne 1995, fig 258) and recorded the presence of a second, oval-shaped, ditch beneath the mound apparently formed of conjoined pits with causeways or entrances in the north-west and south-east. It is presumably the earlier of the two ditch arrangements since it would be difficult to dig the inner with the outer in place and if the causeways were meant for access this would be blocked. Given these gaps, the inner ditch can be considered as either the curved side-ditches of a 'short', perhaps oval, long barrow with mound if present that would have been a little over 20m long, or as a henge monument subsumed by a later round barrow. If a long barrow, the orientation, north-west to south-east would conform. If a henge, the space between the two ditches may mark the position of an external bank.

Comparison can also be made with the pit setting at Site I at Dorchester on Thames (Atkinson *et al* 1951, fig 4), although there an entrance gap was only present in the north-east. There, however, an encircling ditch also appears to have been constructed by linking a series of pits. In some respects comparison might be made with the excavated pits at Monkton-Up-Wimborne in Dorset where an oval circuit of more widely spaced pits c35m across had a wide entrance gap at either end (Green 2000, 77-78; French *et al* 2007, 115). Finds within the upper fillings at that site included a kite-shaped arrowhead and Peterborough ware potsherds thus suggesting a Middle Neolithic date. The pits forming the earlier surrounding ditch at Dorchester on Thames also contained Peterborough wares. Whether the Amesbury 6 arrangement originates in that period for the moment cannot be ascertained but like Amesbury 7 it may well pre-date or be contemporary with the Stonehenge enclosure earthwork.

Amesbury 8 is less well defined and it has suffered from a considerable degree of cultivation. While the earthwork survey depicts it as a simple mound, the 1993-4 magnetometer plot adds a further level of detail, specifically regarding the ditch. Rather than circular this is irregular and appears as a somewhat angular form, perhaps even pentagonal, in overall plan with a potential entrance gap in the south-east. Payne (1995, fig 259) depicted a second in the south. At the very least, the ditch is discontinuous and refinement of the geophysics might indicate that this feature, like that beneath Amesbury 6, comprises a series of pits. Indeed Payne (1995, 497) suggested that this, along with Amesbury 7 and 9, may represent henge-like structures. Whether or not this is so, similarities with sites IV and V at Dorchester are evident and Peterborough ware pottery present at the latter two sites may provide some potential indication of relative date here. Alternatively, they might be compared with the structures such as the segmented ring ditch at Barrow Hills, Radley (Barclay & Halpin 1999) where Beaker potsherds were recovered from the upper fill, or those excavated on Wyke Down, Dorset (Green 2000, 87-9) which was associated with Grooved ware indicating a date within the 3rd millennium (Garwood 1999, 152). At the latter a series of closely spaced, almost intersecting pits defined an angular enclosure, 20m across with entrance gap in the south. Nearby a second enclosure of less regular form and just 12m across, with entrance gaps to north and south, was similarly constructed of a series of almost conjoining pits. While the parallels provide a relatively wide range of chronological possibilities, it is evident that the monument is likely to originate no later than the stone settings and is very likely contemporary with them. The magnetometer plot of Amesbury 8 also depicts a considerable degree of anomalous activity around the site but particularly in the north-east. While this could represent more recent disturbance (and it is worth bearing in mind the potential ground disturbance associated with the Stonehenge Free Festival of the 1970s), the manner in which it focuses upon the site indicates that it may well represent a group of satellite cremations or other associated features. Hoare (1812, 128) found that the barrow had been previously excavated and contained an interment but said little about the composition of the mound. Given its position it would be of no surprise if it contained quantities of sarsen or bluestone fragments.

Amesbury 9 is the most damaged of all the barrows and only part of it can be traced on the surface. The mound is completely missing and given the better survival of other mounds in the cemetery it may be that an attempt was made to cart the material away in an attempt to level it. The locally enlarged nature of the ditch, visible as an earthwork, is difficult to account for. The National Mapping Programme plot recorded a broad ring ditch, not circular but flattened on the north-east and south-west. In contrast, the 1993-4 magnetometer plot depicts it as discontinuous (Payne 1995, fig 258); the continuous sector corresponds in large part to the portion that is visible as an earthwork. The ditch components are quite angular in plan, with a long slightly curving segment in the south-west with small segments to north-west and south-east, not dissimilar in plan to the smaller of the Wyke Down henges. The north-east component is all but missing, and very much slighter, almost a series of pits. Within is a circuit of at least 15 small pits or postholes that mirror the ditches on the north-east and south-east sides and indicate that it is unlikely that ditch spoil was placed within. They appear to be more regular along the sides and there are gaps or entrances in the north-west and south-east matching the causeways in the ditch in a similar fashion to that at Monkton-up-Wimborne (French *et al* 2007). An anomaly occurs off centre, though it is noteworthy that Hoare found this 'unproductive', meaning that he found no burial. As with Amesbury 6, 7 and 8, this may have Neolithic rather than Bronze Age origins and while its precise chronological position will only be established by excavation, its relationship to Stonehenge and the development of ceremonial activities on Stonehenge Down can be considered in a fresh light.

Given the proximity of a major highway, the encroaching paraphernalia of the former Stonehenge Aerodrome and the episodes of cultivation it is quite astonishing that the disc barrow, Amesbury 10, has survived at all, let alone in such reasonable condition. The earthwork survey depicts it as slightly oval, which is unusual, though not entirely unknown, for this class of monument. At a maximum of 36m across it is also rather small in circumference when compared to other disc barrows in the vicinity, which may typically reach 60m or more. The 1993-4 magnetometer plot (Payne 1995, fig 258) adds further detail and indicates that the circuit is more pit-like in the north. There is a small part-circular feature in the interior interrupted by anomalous disturbance. Surrounding the barrow is a circuit of what appear to be features that give positive readings, perhaps small boulders, although nothing is visible on the surface. A stone circle set out around a disc barrow would be quite unusual, but whether these are associated with a prehistoric phase of the monument is unclear, for it remains possible that the barrow was marked out or fenced off at some point to discourage cultivation over the easily damaged earthworks or to ensure that it was not inadvertently damaged by activities relating to the airfield. The extent to which other pit and fence like features are ancient is difficult to determine and will require excavation to provide certainty. Some are more likely than others to be original features, notably those that reflect gaps in ditches, etc. Cunnington excavated here in 1802 but indicated that others, i.e. presumably Stukeley, had dug there previously.

The superb bell barrow to the east of Stonehenge, Amesbury 11, is one of the most prominent on the whole of Stonehenge Down and survives well as an earthwork. The magnetometer plot (Payne 1995, fig 258) adds a good number of anomalies in the south that focus around the ditch and its external bank, as well as on the summit and, as might be expected, alongside the road. These indicate high ferrous disturbance and are likely to represent modern activity. There is also some angular disturbance in the west. The mound is depicted lying centrally on the platform surrounded by a number of pit-like features. Cunnington evidently found chippings from the Stonehenge stones during his excavation here (Cunnington MSS Devises Museum).

Cunnington indicated that some of these mounds had been opened at least once before. He was no doubt thinking primarily of Stukeley and Lord Pembroke, but there may have been others. The illustration of Stonehenge dated 1575 that was published in Camden's *Britannia* (Gough 1806, 135, 154-5) incorporates two men digging bones from what is apparently a barrow situated west of Stonehenge and the practice may have had a long tradition. The position of the latter is intriguing as it lies approximately where the former trackway was moved to by Hawley. The radial plough marks around the enclosure swerve sinusoidally at this point as if encountering greater resistance. It is noteworthy that aerial photograph NMR CCC 8561/173, taken in 1922 (see Fig 11), depicts irregular mounds in the area. A barrow (or barrows) here would close the gap between the main group and Stonehenge and, were it not for the stones, the latter would then simply appear to form part of the barrow cemetery.

That the surface earthworks differ so markedly from the evidence of the 1993-4 geophysical survey plot supports the suggestion that many, perhaps most, of these sites have undergone a number of phases of activity and without modern excavation it is rather difficult to determine the full chronology or indeed the nature of each site. This should be of no surprise as excavations in recent decades, for example, Amesbury 71 on Earls Farm Down (Christie 1967), Shrewton (Green & Rollo Smith 1984), and Ringlemere (Needham *et al* 2006), have adequately demonstrated the multi-phase development of many barrows (Last 2005) and that in many cases construction of a mound is only the final sealing event. In the south-west, Andy Jones (2005) prefers to think of these as ceremonial rather than burial monuments as human burial is by no means a primary function.

The long chronology of many round barrows is widely accepted and examination has shown that many had origins in the Neolithic. Kinnes (1979) provided a list of known examples and more recent work, including radiocarbon dating, has been carried out at a number of these (essays in Leary *et al* 2010). Kinnes emphasized that some of the earliest sites were simple ring ditches, many of which he interpreted as Enclosed Cemeteries and more recent excavations have added further numbers to the ring ditch catalogue if not the cremation interpretation. In particular one at Great Briggs, Nottinghamshire, with at least one causeway in the north and enclosing an area between c18m and 12m was re-cut on a minimum of five occasions (Guilbert 2009). Carinated bowl pottery (an early

Neolithic type) was recovered from pits in the centre and a radiocarbon date of 3770-3650cal BC at 2 sigma obtained. A further segmented ring ditch with constricted causeways in the west and north-east was excavated at Shepperton (Jones 2008), enclosing an area c17m across with Peterborough ware pottery found in association. Here radiocarbon dates of: 3620-3350calBC at 1 sigma and 3640-3100 at 2 sigma; 3640-3370 at 1 sigma or 3780-3350 at 2 sigma, also indicated an early date. Closer to Stonehenge, Christie's excavation at, Amesbury 71 on Earls Farm Down (Christie 1967) identified an early ring ditch assigned a Neolithic date on the grounds that a Bell Beaker inhumation succeeded it.

Setting aside complications regarding use of the term 'ring ditch', the idea of a circular enclosed area, defined by bank or bank and ditch was used as a characteristic component of the Enclosed Cemeteries class amongst which Kinnes (1979, 67-9) cited six of the Dorchester on Thames sites as examples. As noted above Peterborough ware was associated with sites I, II, VI and possibly V at Dorchester on Thames (Atkinson *et al* 1951, 108-118). No finds from the Stonehenge Down sites are available to us but twenty-one sherds of Peterborough ware, along with chisel and oblique arrowheads, were recovered from arable fields further west on Stonehenge Down as part of a fieldwalking programme during the 1980s (Richards 1990, 35, figs 26 and 158), while chisel and oblique arrowheads were also recovered from a recent intervention (Parker Pearson *et al* 2008, 109, 114). Such segmented ditch monuments appear to segue into sites described as henges. Indeed, Payne (1995, 498) pointed out that one or more of the Stonehenge Down barrows may mask henge monuments. The henge at Millfield North, Northumberland, for example, is open to the north but has two entrance gaps in the south (Harding 1981) and with a circuit of postholes within, compares favourably in both form and dimensions with Amesbury 9.

The Enclosed Cemeteries class invariably contain pit or post circuits among which Llandegai A, Cairmpapple and paired circuits at Maxey were identified as examples (Kinnes 1979, 67-9). The extent to which similar monuments held posts is uncertain but clearly some did, for example, at Sam-Y-Bryn, Welshpool (Gibson 1992), though in contrast other sites such as the pit enclosure at Monkton-Up-Wimbome, which was considered contemporary or later than the adjacent shaft and pit and associated with Mortlake ware (Clea 2007, 358-9), appear to have comprised open pits. Harding & Lee (1987) noted the potential for misinterpretation of some henges as causewayed barrows and vice versa; in particular they highlighted the difficulties of determining type from the ditch plan alone. Indeed as they pointed out, a number of the sites at Dorchester were initially classified as henges. Undoubtedly there are certainly similarities in the layout of these sites to henges but Harding & Lee (*ibid*, 23-4) considered that unless there was evidence of an external bank such sites were better considered as a type in their own right and termed 'sites of Dorchester type'. Small examples of traditional henges they termed 'mini-henges'.

Consideration of the formal segmented and penannular ring ditch/henge/enclosed cemetery forms can be extended further. In particular, to those oval or near oval Cranborne Chase style long barrows which, with one open end and opposing segmented end, in ploughed out form are strikingly reminiscent of some henges. The similarities between these and causewayed ditched round barrows was noted by Ashbee (1976, 36) in his analysis of the barrow Amesbury 51. While greater detail is required, there are indications that certainly Amesbury 7 and possibly Amesbury 9 may fall into this category. The degree to which other 'round' barrows in the vicinity might have been mis-categorized is of course unknown but it is worth drawing attention to Amesbury 50, one of the Cursus Group (Amadio & Bishop 2010, 22-3, fig 11) formerly listed as a round barrow but which survey revealed to comprise visible side ditches and which could easily fall into this category (a suggestion reinforced by the results of geophysical survey (Stonehenge Hidden Landscapes Project 2012, 15, fig 34)). It is possible that there are two elements at the plough-levelled long barrow Winterbourne Stoke 71 since evidence from the side ditches depicted by aerial photography indicates that there may have been an earlier phase with short curved ditches (RCHME 1992, 3); however, it should be noted that the existence of this long barrow has since been questioned (NMR: SU 14 SW 535).

Distinguishing between the curving side ditches of a 'short' long barrow and those of a small Class II henge is difficult but crucial if we are to establish satisfactory chronology here. As field monuments the difference lies simply in the presence of an internal mound in the case of long barrows or an outer bank in the case of henges, but when a later mound may have been constructed over the earlier features, separating them is no easy matter. Ground penetrating radar might assist. Curving side-ditches are not unusual at long barrows and occur, for example, at Thickthorn Down (Drew & Piggott 1936), Wayland's Smithy (Atkinson 1965: Whittle 1991), North Marden (Drewett 1986) and Alfriston (Drewett 1975). There is even the possibility that earlier 'short' long barrow features were adopted and remodelled as Class II henges. There certainly appears to be an overlap in plan form between 'short' long barrows and henges and the architectural relationship and functional purpose of these respective monument types may repay investigation.

The precise date of any of these particular monuments is of course unknown and until excavated under modern conditions will remain as speculative. The 'short' or 'oval' long barrow, if indeed that is what Amesbury 7 represents, implies a longer ceremonial use of the Down. Radiocarbon dates on 'short' long barrows vary quite considerably. That beneath Wayland's Smithy is clearly of early date, sometime before 3700-3390cal BC (Whittle 1991) but Alfriston has a wide date range from 3339-2626cal BC (HAR-940 4310+/-110bp) and there certainly appears to be a late 4th millennium phase of long barrow use that in some instances may extend into the early 3rd millennium. The primary ditch at Allington Avenue, Dorset, for example, is dated to 3351-2920 (HAR-8579 4450+/-80bp; Davies *et al*, 1985); the U-shaped phase 5 ditch at Barrow Hills, Abingdon, could date to 3330-3225 or 3185-3155 or 3145-2865 or 2810-2750 or 2725-2695 or

2675-2665 (Bradley 1992). More precision on this is of course required, but comparing these admittedly few dates with those from early henges is of interest.

It could be useful to relate these activities to the sequences at Stonehenge. The Stonehenge enclosure is closely dated to 3015-2935calBC (Bayliss *et al* 1997, 46-8) and given the chronological indicators mentioned above, the 'short' long barrow may well date to the same or an earlier period, as may some of the features beneath a number of other barrows. Pending excavated confirmation we should be cautious, for the phases evident in the foregoing allow for an earlier genesis and the presence of earlier monuments here certainly have implications for Stonehenge and its development. It is thus likely that the Stonehenge enclosure was not built in isolation but alongside and influenced by others as part of a range of related ceremonial monuments and activities within the immediate area. Indeed Kinnes defined the Stonehenge enclosure as an enclosed cemetery and assigned it to Stage F, the final stage of his ring ditch seriation (see also Cleal *et al* 1995, 154-5, 163-4). The role of the Stonehenge enclosure as a cremation cemetery has recently been highlighted by Parker Pearson *et al* (2009) and it is instructive to consider that its purpose may have been influenced by other monuments in the vicinity.

Whether these sites decayed or were in use as the stones were erected is unknown. It could be that stone materials were deliberately incorporated as contemporary activities associated with construction of the stone settings, although a preferred option may be to suggest that the mounds were raised early in the 2nd millennium BC, by which time the major construction phases of sarsen and bluestone use at Stonehenge had waned. Mention by Stukeley of the discovery of bluestone chippings in two of the barrows (probably Amesbury 4 and 5) is intriguing. Hoare also mentioned finding bluestone in the bell barrow to the east of Stonehenge (Amesbury 11). According to Long, the process of cultivation at Fargo 'levelled two barrow-like mounds which were in great measure formed of the chippings and fragments of the stones of Stonehenge' (1876, 65n, 236). He continued that when barrows 15 to 22 (i.e. Amesbury 4-10a) were levelled: 'This was done 28 years ago, and my informant stated that after it was done, when ploughing there, it was his aim, as well as that of the others, to see which could pick up the most chippings. Some of them were granite and the others sand stone. Of the granite no use whatever could be made when we took them home, but the sand stone they used for whetting or sharpening reaping hooks' (ibid, 65). This is interesting as it implies that use was being made of substantial quantities of material from the stone settings during prehistory. Whether this was a result of destruction of the stones, as described by Darvill and Wainwright (2009), or incorporation of waste flakes and other pieces from dressing sites is unknown.

We might expect considerable amendment to these ceremonial monuments both in terms of mound addition and of inserted burials or otherwise, as well as other paraphernalia such as post avenues, funeral/ceremonial pyres, satellite cremations and other features (see, for example, features at Ogden Down and Down Farm on Cranborne Chase, Dorset (Green 2000, fig 84, pl 20)). The degree to which the

anomalies noted in Payne's plan (1995, fig 258) reflect this kind of activity is uncertain but they deserve serious consideration and the potential for the presence of pits and flat graves is enormous, as is the presence of satellite cremations right through to the Middle Bronze Age. Similarly, in many cases the earthwork detail can provide an indication of such phasing (e.g. Barrett & Bowden 2010). Thus the earthwork and geophysical surveys of barrows can be seen to be complementary; whereas the former describe the final manifestation and hint at possible earlier phases, the geophysical plot picks out otherwise invisible interesting earlier components. In a similar way analysis of the aerial survey plot (Fig 21) may help identify the location of 'lost' barrows. Specifically, in this case, a curious enclosing bank with two rounded ends lies across a linear ditch at the southern end of a 'Celtic' field system further west on Stonehenge Down and may represent the levelling of the mounds recorded close to that spot by Hoare.

Some of the mounds may be of Middle Bronze Age date or at least include a Middle Bronze Age component. As noted above a large Deverel Rimbury urn was recovered, probably from Amesbury 3. William Cunnington excavated a number of barrows in the vicinity early in May 1802 (R H Cunnington 1975, 164) including that from which the 'Stonehenge Urn' was recovered. It is unclear from the description exactly which mound was being referred to and Hoare, who allocated numbers to the barrows and with whom Cunnington must have conferred, sheds little light. He simply indicated that a group of eight barrows of different sizes were situated next to the road (Hoare's 14) and added that the 'tumulus nearest that place produced the largest sepulchral urn we have ever yet found' (1812, 126). Since there were several barrows alongside the road this hardly helps. According to Hoare the urn 'measured fifteen inches [0.4m] diameter at the top and is 22½ inches [0.53m] high; it varies also most decidedly in shape and pattern from any others in our collection; on which account we have distinguished it by the name of the STONEHENGE URN. It contained an interment of burned bones and was not inverted; but the deposit was secured by a large triangular stone placed over the mouth of the urn' (ibid). Cunnington added that it was found at a depth of 10 inches (0.2m) and that the stone covering it was 'generally called pavours and comes from Chilmark' (Devizes Museum Cunnington MSS). It is noteworthy that some of the packing material for the sarsen uprights at Stonehenge, specifically Stones 1 and 30, probably Stone 6 and others came from Chilmark (Hawley 1921, 25-8; 1922, 38, 43-5; Cleal *et al* 1995, 190-194). The urn may derive from Amesbury 3, certainly Annable & Simpson (1964, 68) believed so although Grinsell (1957, 149) was a little more cautious. There is a problem in that the urn is over 0.5m in height yet according to Cunnington was found at a depth of only 0.2m. It may of course have been set in a cist cut in the chalk. The Urn is a large Deverel Rimbury barrel urn with finger impressed decoration on an applied cordon and finger impressions on the top of the rim. It is this that is illustrated in a drawing by Philip Crocker of Cunnington driving home to Heytesbury after the excavation with his daughter Elizabeth clutching the urn (RH Cunnington 1975, pl 22).

A concentration of Deverel Rimbury pottery along with a reasonable quantity of struck flint, much of which is likely to be contemporary, was recovered from Stonehenge Down

a little to the north of the barrow during a fieldwalking programme in the 1980s (Richards 1990, 23, 36, fig 19) and it is likely that the barrow lay at little distance from a local settlement set amongst its 'Celtic' field system.

The field system

Given the template for the layout and development of 'Celtic' fields on Salisbury Plain (McOmish *et al*/2002) there is every likelihood that the examples depicted on the summit of Stonehenge Down in the National Mapping Programme plot (Fig 21) originated in the Middle Bronze Age. The small co-axial field system with its typical axial strips (McOmish *et al*/2002, 51-56), in some of which cross-divisions remain, may have been adapted and added to in an aggregate manner changing orientation slightly in doing so and there is some chronological depth present. The implication is of a small attendant community nearby. There is no indication that land division extended into the shallow coombes on either side or towards the Winterbourne Stoke parish boundary, but other co-axial systems exist to the north, north-west and south-west and it is conceivable that the land between was retained as open common land. Recent excavations (Parker Pearson *et al*/2008) have revealed the presence of a curving ditch with terminal along with pits and postholes associated with Middle Bronze Age material. The ditch may have influenced the unusual configuration of the northern element of the 'Celtic' fields here.

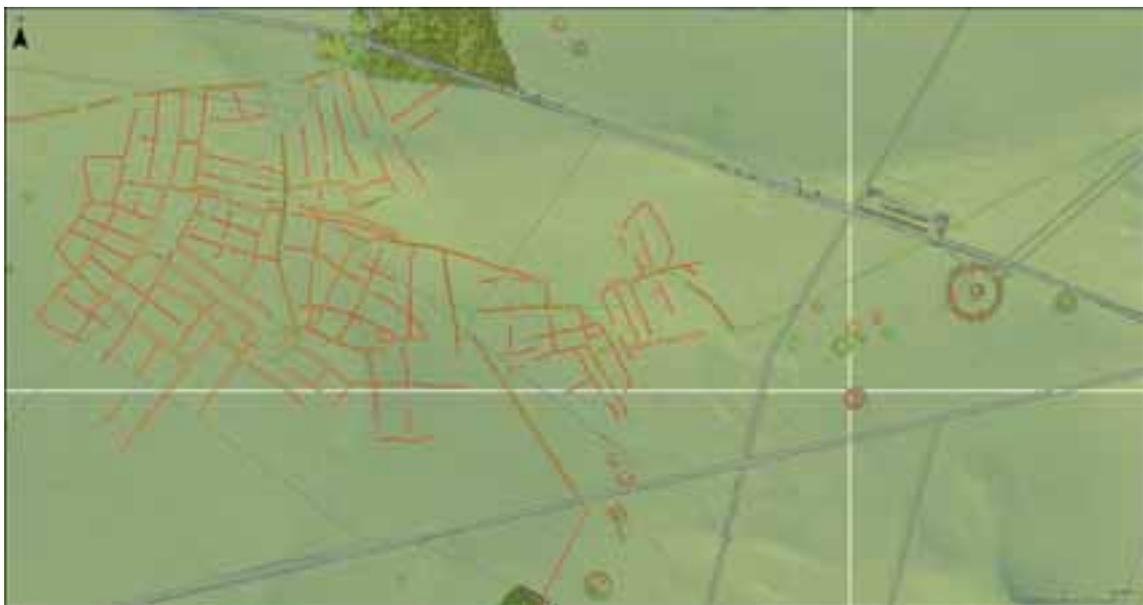


Fig 21. Plot of 'Celtic' fields and linear ditches on Stonehenge Down at 1:15,000 scale from aerial photographs set against lidar background. Red features are those identified as banks, green as ditches. Lidar © Environment Agency (December 2001).

The linear ditches

The same excavations indicated that the Palisade Ditch, known from aerial photographs (Fig 21) and the 1993-4 geophysical survey (Payne 1995, 497) to cross the north-eastern corner of the triangle, is now known to be of Later Bronze Age date (Parker Pearson *et al*/2008). The ditch can be seen to cut across the 'Celtic' fields in the west and, despite being interrupted by remains of two phases of cultivation, was recorded on the surface within the Triangle by the laser scan. Its curving nature is unusual for a Late Bronze Age linear ditch, although this might be explained by its utilization of the course of an earlier palisade (Parker Pearson *et al*/2008).

Several other linear ditches focus on the higher part of Stonehenge Down and may converge on some settlement feature. One cuts north to south through the main part of the co-axial system and finishes in a curvilinear flourish at its southern end where it may have avoided the four round barrows (Amesbury 1b-e, i.e. Hoare's no 12) once situated there. Certainly a concentration of Post Deverel Rimbury pottery was noted at this point during fieldwalking (Richards 1990, 36). Elsewhere on Salisbury Plain foci of such ditch systems often develop into prominent enclosure sites (Casterley, Battlesbury, Sidbury, Quarley Hill) or in one case at East Chisenbury, a monumental midden.

Roman and later activity

Re-use and additions to the 'Celtic' field system may have taken place in the Roman period at a time when fields elsewhere on Salisbury Plain were widely taken back into use (McOmish *et al*/2002, 100-04). The configuration of some of the fields, particularly the kite-shaped enclosure, is suggestive of a Roman date although no Roman pottery has been recorded from the surface here (Richards 1990, 27, fig 17). It should be noted that a considerable amount of Roman material has been recovered from Stonehenge itself (Field & Pearson 2010, 68). The fields here may also have continued in use into the early medieval period and it may be these that were responsible for the evidence of cultivation found in recent excavations at Stonehenge (Darvill & Wainwright 2006). As on much of the higher chalk downland, however, settlement and cultivation was difficult and the lack of water critical, and the area may have been more suitable for sheep farmers. The open downland allowed free ranging tracks to develop that utilised natural as well as prehistoric features as guideposts, but these were eventually confined to corridors by the construction of toll roads and enclosure fencing. The first sign of entrepreneurial cultivation occurred in the 18th century with the bumbaking of a strip of land alongside the A344 road. The open down alongside the Amesbury to Shrewton Road (A344) is shown as enclosed into fields and described as 'bumbake' on maps dating to 1824 and

1846 (WRO 283/219 and Amesbury TA), 'burnbake' being a process whereby the turf is stripped and burnt and the ash ploughed back as a fertiliser. Some cultivation was taking place at the limit of the parish in the early 19th century, as Hoare mentioned barrows located there being ploughed out. No buildings are depicted as present on the down at this time, but at a distance from the home farm by the river at West Amesbury it would have been cumbersome to take tools, machinery and materials out and return each day. Around the middle of the century the establishment of a field barn and cottages on the summit of the down may have encouraged more intensive cultivation in the area, including within the Triangle. The farm can have been established no earlier than 1847 for it was not present on the Tithe Apportionment. Writing in 1876, William Long reported the account of a local man, Mr Edwards, who told him that the farm buildings had been erected about 29 years previously (1876, 236).

The Ordnance Survey 1st edition 25inch map of 1877 depicts the buildings arranged around a rectangular yard with domestic buildings with gardens to the north. They can be seen in the background of a photograph of Stonehenge by R Langton Cole (English Heritage NMR S613) taken in 1881 (see Fig 17). There are sheds grouped around a yard with thatched barn on the east and beyond in the north-west of the complex, a pair of semi-detached cottages is visible. Little change had occurred by 1901 when the 2nd edition OS 25inch map was prepared.



Fig 22. Plot of 20th-century military features taken from aerial photographs set against lidar background at 1:10,000 scale. Lidar © Environment Agency (December 2001).

Like many farmsteads and field barns on Salisbury Plain (McOmish *et al*/2002, 117-19), the Fargo Cottages were short lived; here demolition was likely to have been a result of military acquisition rather than economic downturn. The barn and cottages were presumably established in order to exploit the arable potential of Stonehenge Down at a

time of high corn prices, but like many of the farmsteads on Salisbury Plain may have been difficult to maintain.

It is likely that the farm was swept away to make way for the military aerodrome during the First World War. The Stonehenge Aerodrome covered an extensive area across the western part of Stonehenge Down. The National Mapping Programme plot depicts the area of the major buildings as, in part, do the photographs (Fig 22; see also Figs 11, 12 and 13). The earthworks recorded in the south-west corner of the surveyed area undoubtedly represent part of the Stonehenge Aerodrome visible in those photographs. The blurred nature of these suggests that the site may have been bulldozed and ploughed over at some point in order to provide a more pleasing aspect to Stonehenge.

CONCLUSION

Survey and investigation of sites on Stonehenge Down has added considerable detail to the little known prehistoric sites and in so doing provided context for Stonehenge itself. The latter monument can now be seen as part of a complex of ceremonial monuments, the earliest of which may be a small, formerly unrecognised 'short' long barrow and some others of henge-like affinities which must have been contemporary with its early use.

The value of applying multi-disciplinary survey techniques is seen in the chronological depth and spatial relationship of features that can be ascertained across the landscape. While the earthworks can be analysed to considerable benefit, geophysics present a crucial further component, demonstrated here by the otherwise unexpected earlier structures beneath round barrows. Similarly, aerial photography has provided data, particularly of the extent of Middle and Later Bronze Age and perhaps Romano-British field systems in an area where the archaeology is all but levelled. Thus the area to the west of Stonehenge can be seen to be an area of intense archaeological richness of immense interest; the apparent lack of interest at Stonehenge itself in later periods may simply be the result of a shift of focus towards the summit of Stonehenge Down.

METHOD

The survey used a combination of Trimble R8-2 GNSS and Trimble 5800 GPS receivers linked to a single on-site base station (Fig 23) fixed on to the Ordnance Survey National Grid using the Trimble VRS network to access the Ordnance Survey system of active stations (OSNet). Recent tests of this system indicate that the methodology used to fix the base station is likely to achieve a rms accuracy of better than 10-20mm in plan and 15-30mm in height (Edwards *et al*/2008). The survey data was downloaded into Korec's Geosite software to process the field codes and the data transferred to AutoCad software for plotting out for graphical completion in the field.

In areas of complex or subtle earthworks, detail was supplied using standard graphical techniques of offset and radiation from a temporary network of plastic pegs previously located with the GPS receivers and plotted on to polyester drawing film at the elected scale of 1:1000 for use in the field.



Fig 23. Trimble GPS base station on Amesbury 6 to the south-west of Stonehenge.

Greenhatch Ltd was appointed under the English Heritage framework agreement to use laser scan technology to prepare a ground model of the stones and the surrounding landscape up to the boundary of the present survey area. Greenhatch Ltd used a Leica

C10 long range laser scanner to capture height data across the present survey area at a point-spacing (resolution) of at least 10cm on a 50m grid. Additional data was collected where there were pronounced archaeological features. The data was then processed to create a digital ground model with a resolution of 10cm enabling the subtlest of earthwork features to be modelled. The resulting model was assessed for earthwork features by Caroline Hardie of Archaeo-Environment Ltd, Barnard Castle, under contract to Greenhatch Ltd. She found that detail can only be detected from certain viewpoints and light sources (the equivalent of looking at earthworks on the ground in low winter sun) and involves lengthy analysis. Despite knowing that, for example, Barrow 4 – a feature easily visible in the field – was present, it could only be detected in the data ‘under very specific lighting conditions and was visible only after several days of shifting renders and lighting’. Similarly, Barrow 7 was ‘barely visible on the scans without side lighting’ (Hardie 2011, 9). Like all survey tools it can be chosen and used for its strengths. Additionally, any high density of features tends to confuse the modelling as, for example, at the Custodians’ Cottages.

The survey plan was completed at 1:1000 scale using pen and ink on plastic drawing film. Additional report illustrations were prepared using Adobe CS4 software. The survey data has been archived in compliance with English Heritage RADF guidelines and deposited at the NMR.

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Table 1: Concordance of monument numbers

Site	NMR	Wilts HER	Scheduled Monument No	Hoare	Grinsell
Stonehenge	SU 14 SW 4	SU14SW1, 10F, 107, 155, 157, 160, 168, 200, 207, 302, 307	WI 290, 10390	317	
The Avenue	SU 14 SW 275				
Oval/Long Barrow	SU 14 SW 56	SU14SW105	10369	17	10a
Round barrow cemetery	SU 14 SW 88	SU14SW728	WILTS 064B		
Round Barrow		SU14SW731			
		SU14SW732			
	SU 14 SW 396	SU14SW728	10389	16	4
	SU 14 SW 397	SU14SW727	10368	18	5
	SU 14 SW 398	SU14SW729	10368	19	6
	SU 14 SW 399	SU14SW730	10368	21	7
	SU 14 SW 400			20	8
Round Barrow				12	11a-d
Round Barrow				13	
Round Barrow				14	1
Round Barrow				15	10
Round Barrow				23	11
Long Barrow				165	14
Round Barrow	SU 14 SW 104			164	15
Round Barrow				22	9
Round Barrow	SU 14 SW 431			14	1
Round Barrow	SU 14 SW 432			14	2
Round Barrow	SU 14 SW 433			14	3
Round Barrow				14	107
Round Barrow				14	108
Round Barrow				14	109

Round Barrow				14	110
Round Barrow				14	111
Aerodrome	SU 14 SW 645				
Linear Ditch	127SW				
Mound	SU 14 SW 182				
Disc barrow	SU 14 SW 37				11a



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