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Rediscovering Australia: Surveying the 'Lost' Chalk Map

Sharon Soutar

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COMPTON CHAMBERLAYNE WILTSHIRE

Rediscovering Australia – Surveying the 'Lost' Chalk Map

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SUMMARY
This report describes the research undertaken by Historic England to help our understanding of the 'lost' chalk map of Australia at Compton Chamberlayne, Wiltshire, which was added to the Heritage at Risk Register in 2017. The map was carved on the scarp by members of the volunteer First Australian Imperial Force (1st AIF), who were camped at Hurdcott in the Vale of Wardour between 1916 and 1919. The Rediscovering Australia project combined archaeological earthwork survey with aerial investigation and mapping and small-scale trial excavations to provide essential understanding of the map, its history and landscape context. The research informed the conservation of the site in 2018 by local volunteers led by Helen Roberts of the Map of Australia Trust (MoAT), and will contribute positively to its future management, enabling the map to be removed from the 2019 Heritage at Risk Register.

CONTRIBUTORS
Survey, investigation and research were undertaken by the author, with the kind assistance of Mark Bowden (analytical earthwork survey), Fiona Small (aerial photographs and lidar mapping), Jon Bedford (small unmanned aircraft (SUA) survey data processing), and Helen Roberts (lead volunteer MoAT, documentary research and local knowledge). The excavation note was written by Nick Croxson. This report incorporates feedback from Mark Bowden, Martyn Barber and Fiona Small (all Historic England) and Helen Roberts (MoAT). The text was copy edited by Hannah Kennedy (Historic England).

ACKNOWLEDGEMENTS
This project would not have been possible without the enthusiasm and commitment of Helen Roberts, the lead volunteer in the conservation of the 'lost' map of Australia. Local volunteers, organised by Helen, cleared much of the scrub on the hillside and undergrowth in the woodland covering the First World War practice trench to aid our ground survey.

Thanks also go to Harry Ames, the Naishes Farm manager, for facilitating access; the land agent, Will Baillie, and owner of the Compton Chamberlayne estate, Anthony Newman, for permission, and to Nick Croxson, Heritage at Risk Project Officer at Historic England, for bringing everyone together. Nick and his colleague Dan Bashford carried out the trial excavations. The SUA survey was undertaken by HexCam and Kingfisher APS and commissioned by David Andrews of Historic England's Geospatial Team, Imaging. It was geo-located by Survey Solutions Ltd.

ARCHIVE LOCATION

The report and archive are held at the Historic England Archive, Swindon, and available on request from the Historic England Archive Services archive@HistoricEngland.org.uk 01793 414600. The National Record of the Historic Environment (NRHE) monument records are also available via Pastscape www.pastscape.org.uk.

DATE OF SURVEY

The analytical earthwork survey was conducted in November 2017 and the aerial surveys in January 2018. The data was then processed and analysed in February to March 2018 and combined with mapping from the aerial photograph and lidar data interpretation. The trial excavations were dug in March 2018 and the map reinstated over the summer of 2018. The report was written over the winter of 2018–19.

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INTRODUCTION

Members of the volunteer First Australian Imperial Force (1st AIF) carved a map of Australia into the north facing chalk scarp at Compton Chamberlayne, about 11km west of Salisbury in the Vale of Wardour, southern Wiltshire (Fig 1). They were billeted at the Hurdcott camps between 1916 and 1919. Around 20 military emblems and badges were carved by the various British and Commonwealth regiments camped in the area into the chalk escarpment at that time, the largest group of these hill figures at nearby Fovant (Figs 6 and 19). Others, including the recently restored Bulford Kiwi (Hilts 2018), were carved elsewhere in and around the Salisbury Plain military training area. The chalk map of Australia has been restored several times (Sedgwick 2012) and was Scheduled in 2001 [List Entry Number: 1020133] but has not been maintained since 2005 and was barely visible on the ground in 2017, when it was added to the Heritage at Risk Register.

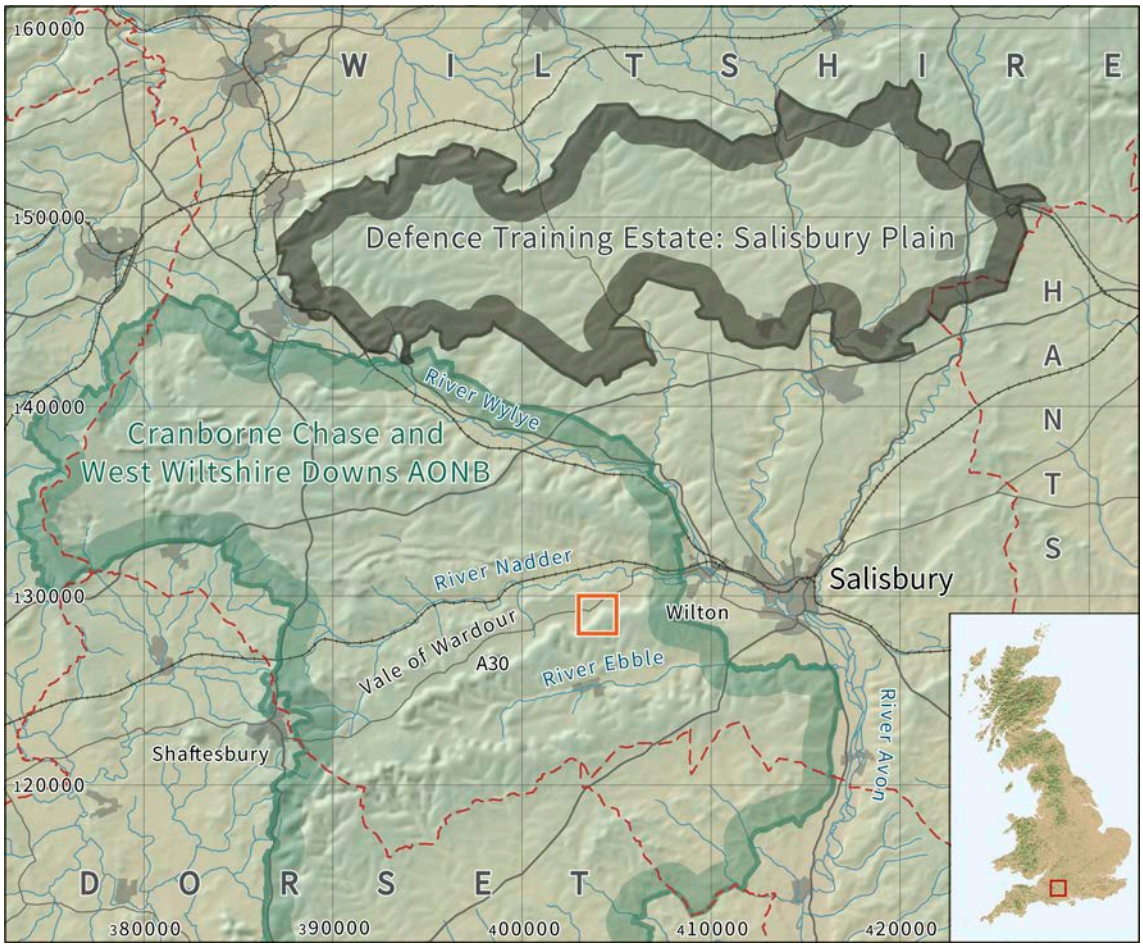


Figure 1: The contextual project area is marked in orange. The base map comprises: 90m SRTM Topography data courtesy of the CGIAR, http://srtm.csi.cgiar.org; and Ordnance Survey data © Crown copyright and database right 2019. Ordnance Survey Licence number: 100019088.

To facilitate the reinstatement of the chalk map, Historic England surveyed the very slight surviving earthworks on the ground and from the air, using a small unmanned aircraft (SUA) to photograph the hillside. The survey data and images were combined to create a photogrammetric 3D model which could be used for accurate measurements and visualisations. Three trial trenches were excavated across the coastal outline of the chalk map to investigate the width and depth of the original and any subsequent cuts.

To complement research on the site itself, archaeological features in the surrounding landscape were mapped from historic aerial photographs and lidar data to Historic England standards (Winton 2018). This 4km^2 area, roughly centred on the chalk map (Fig 12), was chosen to include at least some of the camps occupied by the soldiers who had cut the chalk map. Also to examine the immediate surroundings of those camps for evidence of associated training grounds, such as practice trenches. A synthesis of the results is provided in the Contextual Landscape section below.

A team of local volunteers, led by Helen Roberts (Map of Australia Trust (MoAT)), worked over the summer of 2018 to restore the chalk map of Australia so that it is once again visible from the A30 to the north. The restoration was completed by the centenary of the First World War Armistice as an act of local commemoration (Fig 2). The BBC followed the reinstatement project for their regional 'Inside Out' magazine programme; the initial story aired on 12th March 2018, with a follow up piece on the 5th November 2018.

Figure 2: The restored chalk map, taken 17/01/2019.

THE MAP OF AUSTRALIA

History

Although known to have been cut into the hillside by members of the volunteer 1st AIF, it appears that the chalk map of Australia was originally created as a punishment exercise. The earliest mention comes from a personal memoir for February 1917, which describes how 'unfortunates in the "clink" were marched up daily to cut away more portions' (Rose 1916–18). Coastlines of mainland Australia and Tasmania were cut into the chalk and the word 'Australia' cut across the middle in capitals (Fig 3). Chalk from one of the numerous open chalk pits along the scarp may have been added to augment the shallow cut trenches. The hillside was subsequently known as 'Australia Hill' and 30 men of the old 31st Battalion erected a flagpole above the central letter 'R' (Sedgwick 2017). In 1917 Australian soldiers also cut the 'Rising Sun' (Figs 4 and 6; Rose 1916–18), the General Service badge adopted by the Australian Commonwealth Military Forces from 1911 onwards, and a large Kangaroo on the scarp overlooking their camps at Fovant.

Figure 3: The clearest of the early photographs shows the broad coastline, with dumps of turf spoil alongside, and much narrower letters. The three fine parallel vertical lines are probably scratches on the negative although, confusingly, the long central line is in the assumed location of the flagpole. Photograph taken 1914-18 and donated to the Australian War Memorial by H I Taylor. [Accession Number: H16007; Public Domain]

Unfortunately, not all contemporary accounts can be accepted at face value: one says that the map was cast in cement and took 17 weeks to complete (AWM J02903) but the only concrete elements found are two narrow blocks that act as stops to the chalk legs of the middle 'A'. Over the next few years the map was

maintained by the Australian soldiers, sometimes volunteers enticed by the offer of 'a trip to Australia' (Sedgwick 2017).

Figure 4: The 'Rising Sun' chalk badges. Left: at Fovant (extract from NMR 24637/18 SU 0128/078 6th June 2007). Right: the more stylised example on Lamb Down, Codford, in the Wylye valley (extract from NMR 26552/48 ST 9839/011 30th January 2010).

Maintaining another, much simpler, 'Rising Sun' badge at Lamb Down, Codford, became the focus of punishment parades and it was known as "Misery Hill" by Australian troops (FFFAIF 2008). Despite this apparently common practice to use defaulters, the official War Diaries of the No 3 and No 4 Australian Command Depots make no reference to the map of Australia, even as a punishment detail. Along with the bad weather the chalk map was a common talking point for letters home and several personal accounts, often later published in Australian newspapers, make reference to the hill figures as 'striking' or even 'a work of art for all time' (Sedgwick 2017).

After the First World War the chalk badges were maintained by local civilian workers from Fovant and the surrounding villages, supported by some of the Regimental Associations. With the outbreak of the Second World War in 1939 maintenance of the chalk hill figures was suspended. As easily spotted landmarks and therefore useful navigation aids they were allowed to become overgrown; some were even deliberately camouflaged. Strangely, there is also a story from 1942 of 'Diggers' carving 4 more Australias, one at each corner of the existing map (Sedgwick 2017).

Between 1949 and 1951 members of the Fovant Home Guard Old Comrades Association restored some of the Fovant badges and, to commemorate their own more recent service, cut new badges for the Wiltshire Regiment, where the Kangaroo had been, and one for the Royal Wiltshire Yeomanry. The Rising Sun badge and the map of Australia had become overgrown with weeds by 1950 (Sedgwick 2017) when the decision was made to restore them. A fund for their restoration was raised locally as a gesture of appreciation to the Australian people for their kindness in sending food parcels during and after the Second World War (Combes 1953, 12).

The map of Australia was recut in 1950 (see Fig 5) and a service to dedicate a new flag, which was donated by the Australian Government, was held at St Michael's Church, Compton Chamberlayne, on Australia Day [26th January] 1951. A procession then led up to the map, where the flag was hoisted by an Australian

serving officer (*The Times* 27th January 1951; Combes 1953, 12). The flag was to be flown every year on the King's birthday, Australia Day, Anzac Day, Empire Day and Armistice Day (Sedgwick 2017).

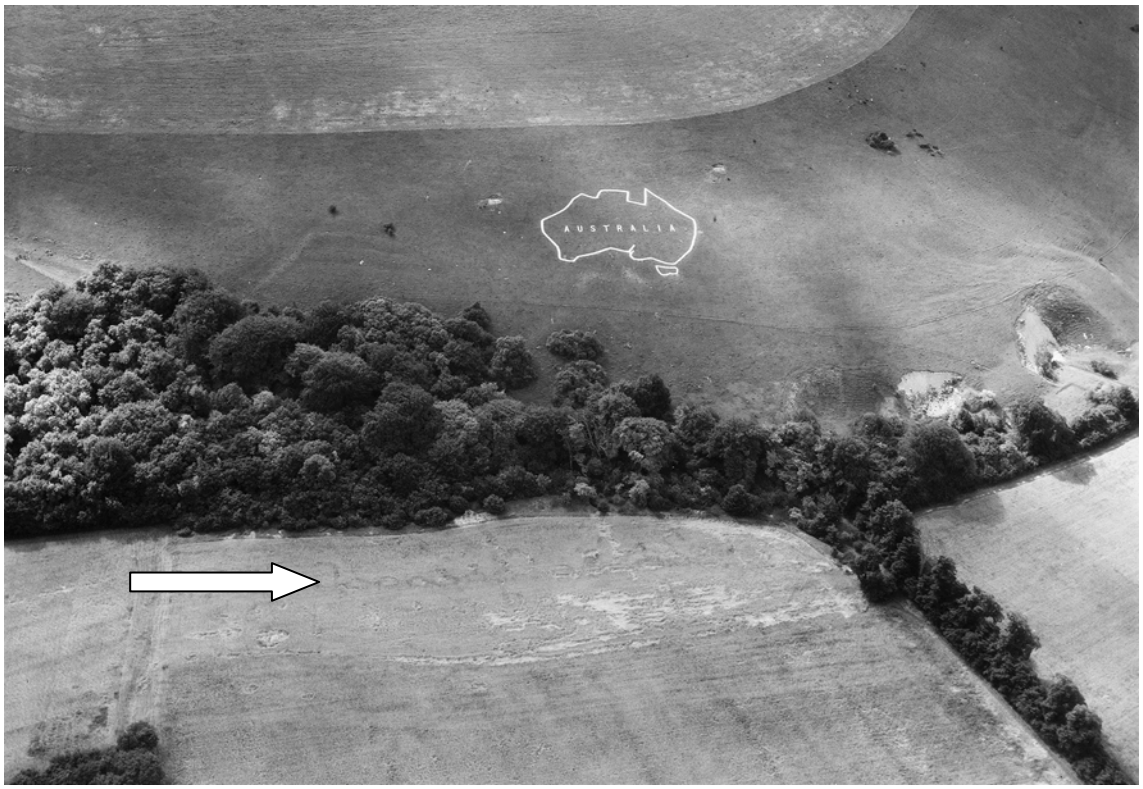


Figure 5: The freshly restored chalk hill figure in 1950. The arrow points to cropmarks of part of the First World War practice trench system, visible as a chain pattern. Aerofilms Collection. EAW031931 17 AUG 1950.

A booklet on the histories of the hill figures was written (Combes 1953) in an attempt to raise some of the money necessary for their annual maintenance and various subsequent pleas for funding made (Sedgwick 2017). Maintenance of the chalk map and Fovant Rising Sun were supported by regular grants from the Australian High Commission. In 1961, the Old Comrades Association reformed as 'The Fovant Badges Society'. Although understandably focussing their limited resources on the main group at Fovant, they continued to oversee upkeep of the chalk map, if sometimes on an ad hoc basis by local youth groups.

The map of Australia was scheduled on 1st June 2001 [List Entry Number: 1020133] but was allowed to grass over in 2005, becoming less visible each year (Sedgwick 2012). It was added to the Heritage at Risk Register in 2017, although local volunteers were already planning work to restore the map. Over the summer of 2018 volunteers recut the map of Australia in an act of local commemoration for the centenary of the First World War. A special memorial service to mark the centenary of the Armistice took place at the map on the 11th November 2018.

National significance

The map of Australia is scheduled as a hill figure [List Entry Number: 1020133]. Hill figures are giant figures of a man, animal or symbol carved into a hillside and constructed either by stripping off the turf to reveal the underlying geology, usually chalk, or by cutting bedding trenches which are then packed with chalk rubble. They are an extremely rare phenomenon nationally, with only about 50 identified, and most are found on the chalk downs of southern England. They include such popular but diverse examples as the late Bronze Age Uffington White Horse, Oxfordshire, and the later Cerne Abbas Giant, Dorset. Wiltshire contains a high proportion of the known chalk hill figures, including several examples of 18th- and 19th-century chalk white horses (Bergamar 1997).

Perhaps surprisingly, 26 of the hill figures scheduled nationally date from the 20th century. Nearly all were cut for commemorative purposes, with a significant proportion dating to the First World War and recording the presence of military units in specific localities. The chalk scarp along the southern edge of the Vale of Wardour made a perfect canvas; together with those at Fovant [List Entry Number: 1020132] and Sutton Mandeville [List Entry Number: 1020134], the map of Australia makes up by far the largest and most complete group of such hill figures in England. The group comprises 19 regimental badges and motifs, either visible as surface features or surviving as buried deposits, on Fovant, Compton and Sutton Downs (Figs 6 and 19). The first was cut in 1916 by the London Rifle Brigade but it was soon followed by a number of other motifs, as the units vied with each other to make bigger and better badges (Combes 1953, 11).

Figure 6: The main Fovant group of badges on the scarp below Chiselbury Iron Age hillfort. Note the 'Rising Sun' badge [third from left]. NMR 29526_026 22-APR-2015

These chalk hill figures are obviously very prominent features in the landscape. Their significance is further enhanced by their association with a number of regiments or units which were either subsequently disbanded, or whose members left the Fovant area to fight in some of the most bloody battles of the First World War.

Together with recent research on the numerous military camps that were built along the Vale (eg Firth 2018), they demonstrate the importance of the area during the First World War. This is particularly significant as the Vale of Wardour is not thought of as a military training area in the same way as nearby Salisbury Plain (Fig 1) and yet, during the First World War at least, the quiet agricultural Vale was transformed by the presence of thousands of soldiers; many from the other side of the world.

International significance

The chalk map and Rising Sun hill figures also have international significance. They were carved by Australian soldiers who had volunteered for service in the 1st AIF, which came into being on the 15th August 1914. Initially the Australian government had pledged to supply 20,000 men for service wherever the British desired. They chose the word 'imperial' to reflect the duty of Australians to both nation and empire. After the war, the importance of maintaining these hill figures to serve as visual reminders of the close link between the Wiltshire downs and the "brave sons of Australia" was soon recognized (Sedgwick 2017).

Other tangible evidence of the area's international significance can be found in several of the nearby churchyards, which contain a number of Commonwealth War Grave Commission headstones: 28 of the 34 Commonwealth War Grave Commission (CWGC) graves at Compton Chamberlayne are for Australian soldiers (Fig 7), many of whom died of the influenza epidemic during their transit through the local camps. Other graveyards in the neighbouring parishes have similar numbers of Australian burials and a special service still takes place every year at St Edith's, Baverstock, on the Sunday after ANZAC Day [25th April].

Figure 7: The map of Australia features centrally on the plaque in the extension to Compton Chamberlayne cemetery. Lifting the handle reveals a folder containing personal details of the soldiers interred. March 2018.

Survey

A range of investigative techniques were applied to identify the outline and original extent of the lost chalk map.

Analytical earthwork survey

A detailed analytical earthwork survey was carried out on the 28–29th November 2017 to Level 3 (Historic England 2017b, 33). Two observed control points were established using a Trimble R8/5800 survey grade Global Navigation Satellite System (GNSS) receiver. The coordinates were corrected to the British National Grid using the OSTN15 transformation via the Trimble 'VRS Now' delivery service, which uses the Ordnance Survey's GNSS correction network (OSNet) and gives a stated accuracy of 1–2cms per point (OS 2018). Station 1 was then occupied with a Trimble S7 Total Station Theodolite (TST), with a reference object/traverse target on Station 2, and the detail surveyed by taking readings along the archaeological features, radiating from the TST to a MultiTrack target. The survey data was downloaded into Trimble's Trimble Business Center software to process the library codes used in the field and combine with other survey data (Figs 9 and 11). The resulting survey lines exported into other software to create a hachured plan (Fig 8).

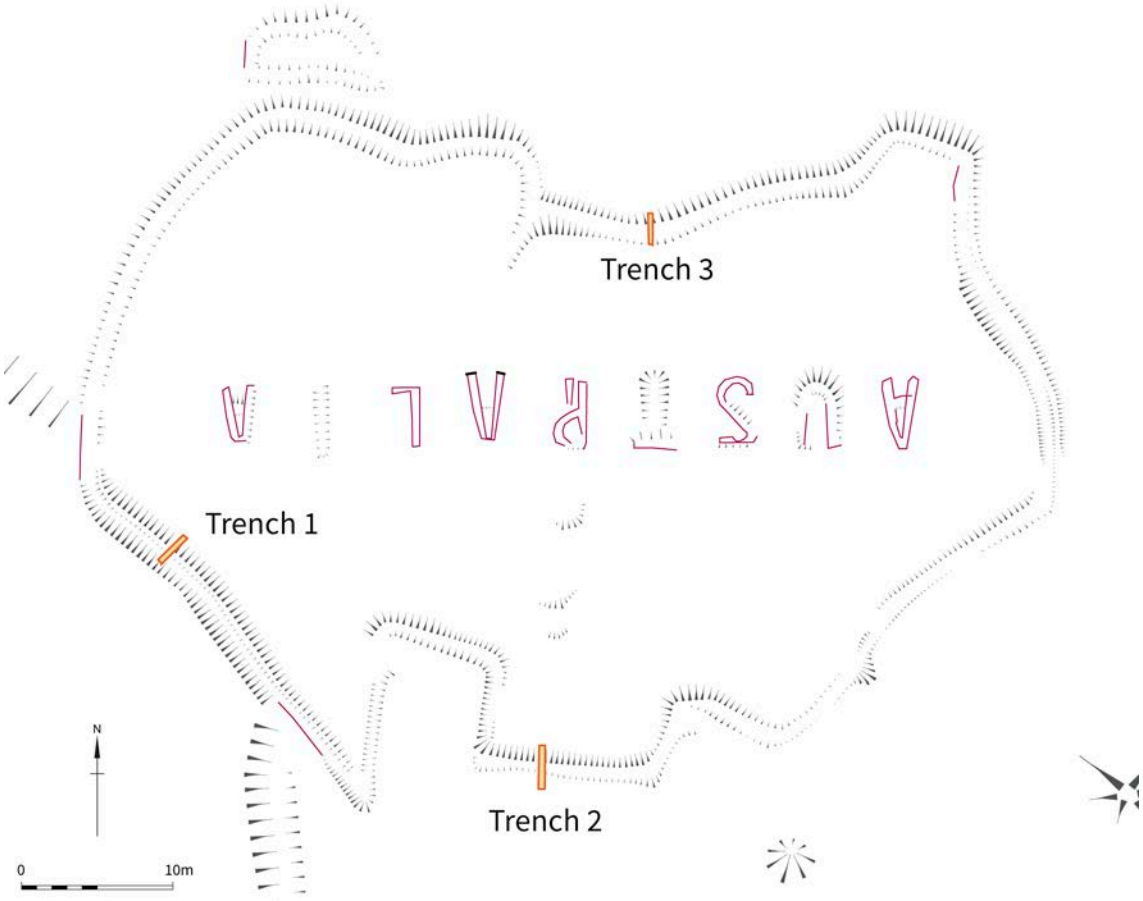


Figure 8: The earthworks of the lost chalk map, showing the location of the trial trenches and the course of the flattish chalk paths, which are barely discernable at first sight.

Small Unmanned Aircraft (SUA) survey

The SUA survey on 31st January 2018 provided creative video footage and 107 still photographs with an average ground resolution of 1.96cm/pix (Historic England 2018). It was commissioned by David Andrews from the Historic England Geospatial Imagery Team under the Geospatial framework agreement (Historic England 2017a). The flight paths and photography were controlled by HexCam with Kingfisher APS providing pilot services and support. A total of twelve temporary ground control markers were surveyed in by Survey Solutions Ltd, using GNSS to obtain a total error of just 1.2cm (Historic England 2018).

The photographs were combined and processed in Agisoft PhotoScan [now known as Metashape] photogrammetric software, producing an accurate 3D point cloud model geo-located by the ground control. The results of the analytical field survey were combined to aid interpretation (Fig 9).

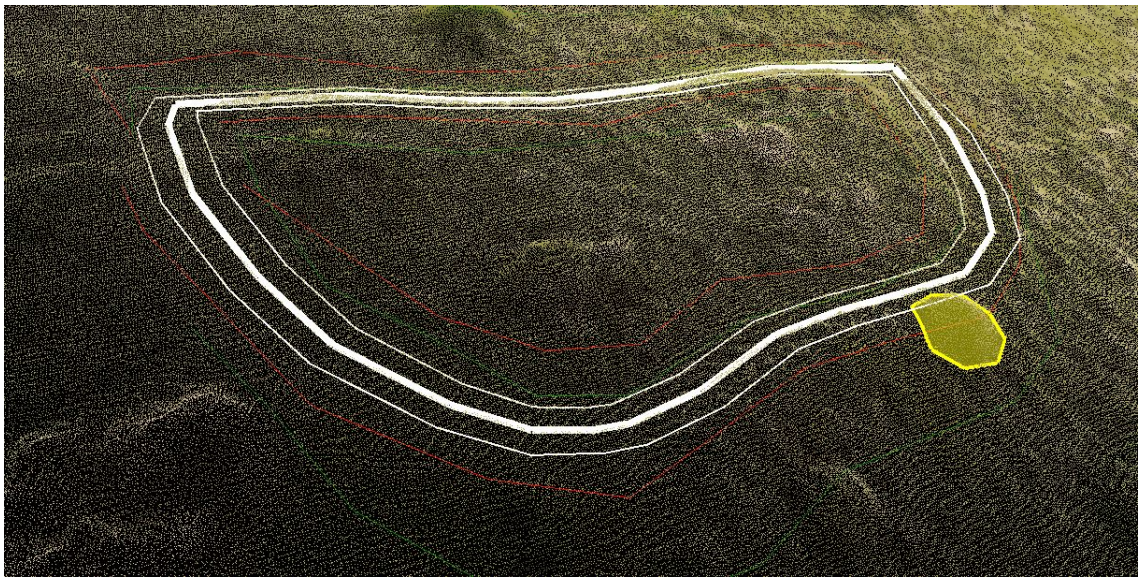


Figure 9: An extract from the point cloud showing Tasmania. The thick white line was digitised along the centre of the chalk path from the 3D model, with two thinner offsets. The yellow polygon is one of the anthills likely to be damaged through the re-cutting. The red (top of scarp) and green (bottom of scarp) lines from the analytical field survey are also shown to aid interpretation.

Trial excavations

by Nick Croxson

Three small trial trenches, randomly placed across the mainland coastline, were excavated by Nick Croxson and Daniel Bashford, both Heritage at Risk Project Officers for Historic England, in March 2018 (Fig 10).

Trench 1

The trench shows an original cut (100) filled by the original chalky deposit of the fill of the feature (101), this in turn is re-cut by [102]. The stratigraphic relationship of the turf bank (103) with the two cuts is not clear in section, but it seems likely that (103) is the original banking material of the original cut (100), constructed of the turves resulting from that cut, to act as a dam for the chalky fill (101). The whole is overlain by an accumulated topsoil deposit (105).

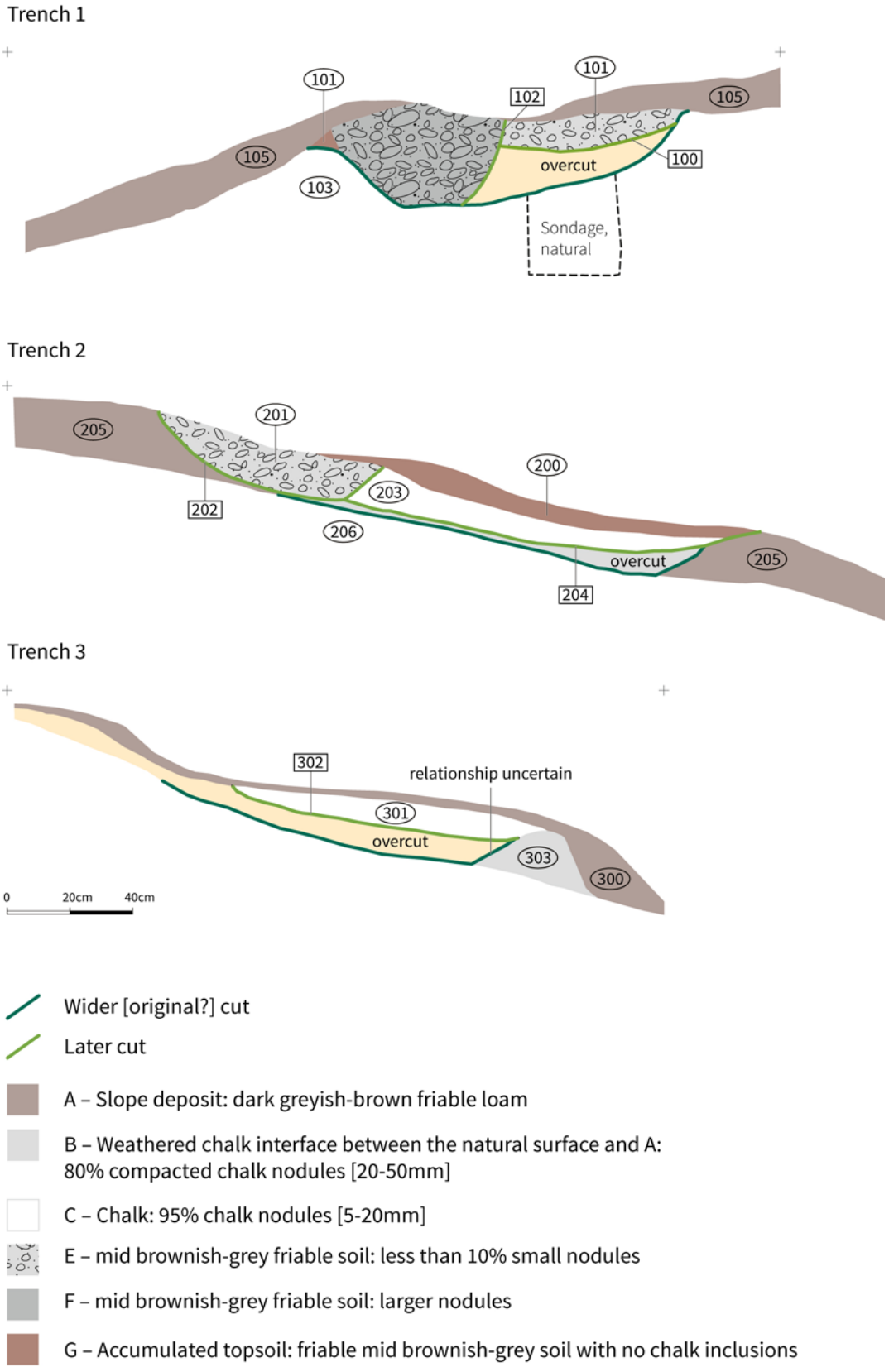


Figure 10: Sections from the trial trenches

The re-cut [102] appears to tally with a photograph from 1957 (MoAT) which shows the cut of the map as a narrow feature filled with large chalk nodules. No finds were recovered from the trench.

Trench 2

The trench was cut through an apparent double cut of bank and ditch which was confusing the surface evidence. It appears from the trench section that the original cut [204] is filled with the chalky fill of the map figure (203), with the suggestion of a turf bank on the downslope side, although this wasn't completely clear in section. The original fill (203) and cut [204] appear to then be cut by [202], however, given the lack of inclusion in its fill (201), it was not considered by the excavators to be a re-cut of the chalk figure, but rather an eroded livestock track, filled with puddled topsoil. This also appears to be clear in an aerial photograph from 2005 (by Tony Pinder, via MoAT). No finds were recovered during the excavation of the trench.

Trench 3

The trench was cut on the downslope at the base of the map chalk figure. The cut for the figure [302] is filled by the chalky deposit (301), which is held in place on the slope by the turf deposit (303) which was the up-cast from the original cut [302]. The only uncertainty in this trench was whether the original cut had gone slightly deeper and then built up again with the same material, although the excavators felt that it is more likely that they had slightly overcut the trench. No finds were recovered during the excavation of the trench.

Analysis

In 2D plan the map measures almost 66m across, east/west, and 53m north/south but when the gradient of the steep slope is taken into account (1:3.2 or 32%), on the 3D hillside the north/south distance increases to 55.75m. Although there is a slight curve to the hillside, east/west, it does not increase the distance across the map significantly.

The chalk map is made up of the coastlines of mainland Australia and Tasmania, the large island state off its southern coast, and a row of letters spelling out 'AUSTRALIA' across the centre of the mainland. When surveyed, the outlines and letters of the chalk map were each defined by a flattish central path, formerly the exposed chalk, which is partly enhanced by scarps or narrow banks to one or both sides. The earthworks were very slight in profile; many were barely 10cm high and the largest, at just 50cm high, were immediately downslope of parts of the northern and southern coasts. The path defining the mainland coast varied between 40cm and 90cm in width and the full circuit is 204m long, with a spur of 4.5m into South Australia. The path defining Tasmania was slightly narrower, at 50–80cm wide.

At the time of survey the letters were difficult to recognise, as only the 'U', 'S', 'T' and 'I' had any significant earthwork element (Fig 11). The other letters were mostly identified as smooth paths on the hillside, each about 50cm wide and enhanced in places by very small scarps. Obviously, the 'I' is the narrowest letter, defined by a single 1m wide shallow linear trench, but the earthworks of the other letters vary between 2.5 and 3.2m wide. The legs of the middle 'A' are stopped with blocks of concrete. The 'U' is the shortest letter but has the largest earthwork component due to the relatively large downslope scarp, which makes it 5.8m long. Most of the other letters are about 4.9m long. The letters are about 2.5m apart; they are not in perfect

alignment on the hillside but appear sufficiently aligned to be read easily when viewed from the Vale below.

Figure 11: The hachured analytical earthwork survey shown against an orthophotograph generated from the SUA survey data, with the hillshade lit from the northwest and exaggerated [x2] to bring out the subtle detail. The numerous lumps are anthills.

The hollow arc above [to the south of] the central 'R' is probably the location of the original flagpole but the two further hollows up the slope [south] could be sheep scrapes. The map overlies two linear features to the south and west, one a hollow and one a scarp, which probably represent much earlier agricultural use of the down. A small probable chalk pit was found to the east of the map and a small mound to the map's southeast could be spoil from an adjacent similar pit, now full of vegetation and therefore not surveyed (Fig 11).

Results

Using the combined 3D survey data a required volume of 20m^3 of chalk was calculated for all features to be recut to a width of 50cm. Early photographs show that the mainland outline was significantly wider than the lettering (Fig 3) and the original broader width of the outline is borne out by the trial excavations. Following the trial trenching, research and discussion, it was therefore decided that the mainland coastal outline would be recut 90cm [3 feet or 1 yard] wide, Tasmania would be recut at 80cm wide to not overly damage the surviving earthworks, and each component of the chalk letters would be recut at 50cm wide.

THE CONTEXTUAL LANDSCAPE

To complement research on the chalk map itself archaeological features in the surrounding landscape were mapped from historic aerial photographs and lidar data to Historic England standards (Winton 2018). A contextual area of 4km^2, roughly centred on the chalk map (Figs 12 and 13), was chosen to include at least some of the camps occupied by the soldiers who had cut the chalk map. The area is located within the Cranborne Chase and West Wiltshire Downs Area of Outstanding Natural Beauty [AONB] (Fig 1).

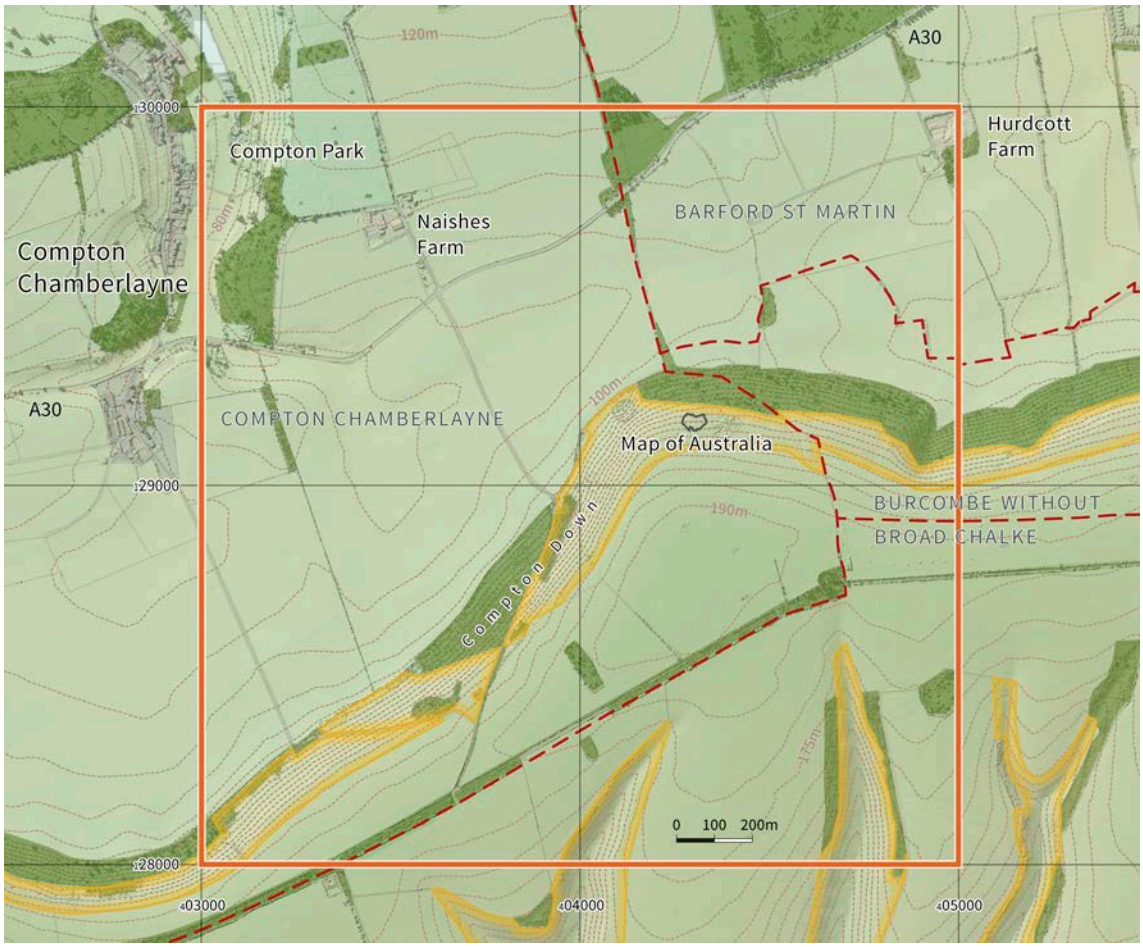


Figure 12: The landscape character of the contextual project area. Wooded areas are darker green and Open Access areas, which are privately owned but the public has the 'right to roam', are highlighted in light orange © Natural England. The base map comprises: Historic Landscape Characterisation data © Wiltshire Council; Digital Terrain Model (DTM) derived from 0.5m resolution lidar data © Environment Agency; Height Data © Bluesky International/Getmapping PLC, and Ordnance Survey MasterMap data © Crown copyright and database right 2019. Ordnance Survey Licence number: 100019088.

Long sinuous coombes cut south into the chalk of Cranborne Chase, towards the Ebble valley, and the eastern summit is topped by a layer of clay with flint. A few geometrically-shaped game covert plantations sit on top of the ridge and the dramatic chalk escarpment to their north drops steeply, from 190m above sea level

down to 100m, forming the southern side of the Vale of Wardour. The scarp is mostly unimproved chalk pasture, which is Open Access land. The lower edge of the scarp is dotted with the scars of chalk pits, and small wooded areas known locally as 'Ivers' (Fowler 1964, 47). To their north the modern A30 road between Wilton and Shaftesbury passes between large arable fields along a bench of chert and sandstone, which rises gently to 120m (Figs 12 and 13).

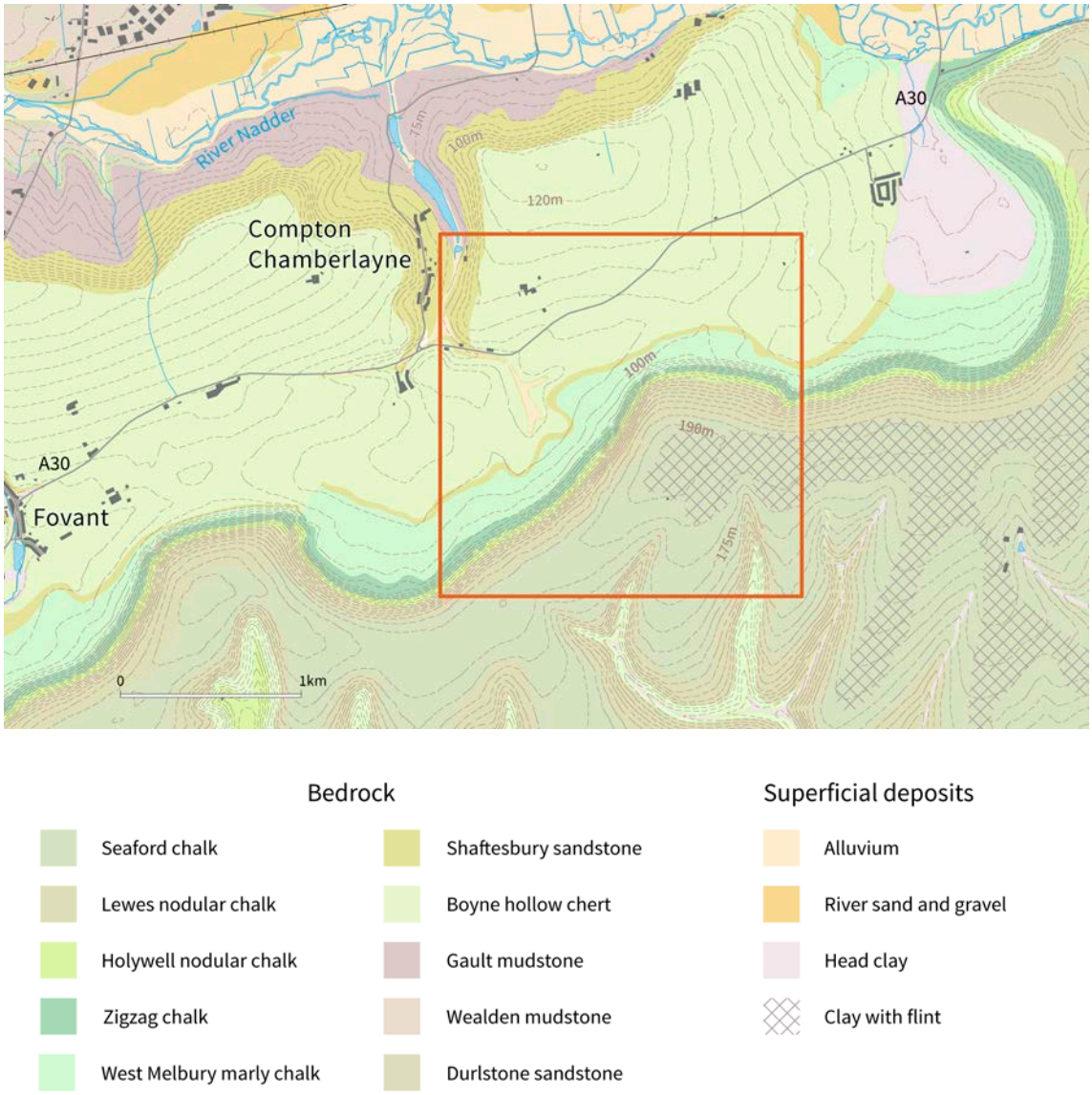


Figure 13: The geology of the contextual project area. The base map contains British Geological Survey materials © NERC 2019. Open Government Licence; Height Data © Bluesky International/Getmapping PLC.

Compton Park is located at the north-western corner of the project area and the small linear village of Compton Chamberlayne just outside, along the narrow valley south of Compton Park house. To the north of the project area, the sandstone ends in a wooded scarp above Upper Jurassic Portland and Purbeck beds of limestones, sands and marls (Fig 13; Land Use Consultants 2003). Post medieval water

meadows flow into the River Nadder, which also forms the northern boundary of Compton Chamberlayne parish. The river flows east, joining other tributaries including the River Wylye, before flowing into the Wiltshire Avon near Salisbury Cathedral (Fig 1).

Prehistory

Given the relatively small size of the contextual project area it is unsurprising that there is little evidence for activity in prehistory. A Mesolithic flint blade was found in Holly Head Copse, woodland east of Compton Chamberlayne village, and just north of the project area are a few findspots, ranging from Palaeolithic through to Bronze Age (Portable Antiquities Scheme). While this pattern is consistent with the sparse and largely riverine distribution of prehistoric artefact findspots for Wiltshire, which could indicate periodic forays along the waterways (Webster 2007, 31 and 57), the distribution is largely from sporadic finds rather than any systematic research and may not represent the real pattern of activity in prehistory. A fieldwalking survey of the Vale of Wardour found some 200 pieces, including polished tools probably of Neolithic date, 1Km west of Compton Chamberlayne (Gingell and Harding 1983). It demonstrates the potential of methodical research in the Vale and the findspot may benefit from further non-intrusive archaeological investigation.

It is difficult to know when the Vale, or at least parts of it, were first cleared permanently, although studies in the southwest tend to suggest the chalk was more heavily vegetated than the surrounding 'lowlands' (Webster 2007, 67). Whilst there may have been localised forest clearances in the Neolithic, permanent and large-scale clearance of the surrounding chalk probably didn't take place until the late Bronze Age (ibid, 66). The general absence of prehistoric and Roman settlement has prompted the suggestion of a different focus and significance for the prehistoric Vale, perhaps as a wooded hunting chase (Gingell and Harding 1983, 24), although a better understanding of the Vale in prehistory is clearly needed.

Round barrows

The earliest landscape features recorded within the project area are four round barrows, examples of the most prevalent type of prehistoric monument in south west England (Webster 2007, 99). From survey and excavation elsewhere, we know that each round barrow has its own complex and unique structural history reflecting periods of construction, burial and other use that may span the Neolithic and early Bronze Ages (ibid; Bowden *et al* 2015, 55).

Unfortunately, none of the four are barrows visible on aerial photographs and none have been excavated. Only Burcombe 5b was a distinct enough landscape feature to be used as a boundary marker in an early medieval charter defining the parish (Grundy 1918, 107: Grinsell 1991, 58) and is probably the single round barrow marked on the map of Station VIII accompanying Hoare's *Ancient Wiltshire* (1812).

Compton Chamberlayne 1 is marked on early Ordnance Survey maps but interpretation of the other two round barrows is open to question. Although one was found in 1937 they weren't recorded until the 1950s (Grinsell 1957, 169). Compton Chamberlayne 2 was only 1ft [30cm] high but the grid reference quoted (see Table 1) is in an area marked as rough pasture on early Ordnance Survey maps and covered with fairy rings on an aerial photograph from the 1930s, so some confusion is possible. The other possible round barrow was identified beneath a

post medieval tree enclosure ring but there earthworks could be the result of a build-up of soil material around tree roots while the surrounding land was ploughed after the ridge-top enclosure fields were expanded in the early 1940s.

Name	NGR	NRHE Monument Number	Note	Certainty
Burcombe 5b	SU 0488 2895	213999	Used as early medieval boundary marker	Probable
Compton Chamberlayne 1	SU 0437 2892	213972	Marked on early OS maps	Probable
Compton Chamberlayne 2	SU 0423 2886	213972	Found in 1937; 10 paces in diameter, 1ft high	Possible
Further bowl barrow?	SU 0427 2889	213972	Suggested in 1957; Under tree enclosure ring	Possible

Table 1: Details of the 4 recorded round barrows

The probable round barrows are located towards the edge of the flattish ridge summit, and were most likely intervisible. Their location on the shoulder of the ridge also means that while they may have had extensive views and been highly visible from the Vale, subject to vegetation, it was not possible to see into the coombes or the foot of the steep scarp below from the barrows.

The 50 round barrows distributed along the Ebble/Nadder ridge are mostly small, at just 7–15m in diameter (Tilley 2010, 112). They are situated in a broad range of topographic locations but are more numerous around the mouths of the coombes on the southern side of the ridge, which may have bestowed or indicated some additional importance (ibid, 119). There could be more round barrows awaiting discovery in the Vale itself, as aerial photography along other tributaries of the Wiltshire Avon has shown (Martyn Barber, pers comm).

Cross ridge dykes

Parts of two cross ridge dykes cross the Ebble/Nadder ridge within the project area (Fig 14). The westernmost [D74 in the literature] connected the northern end of a long coombe to its south-south-east with the steep scarp above Compton Ivers to the north-north-west. The easternmost [D73] likewise connected the steep scarp with the end of a long sinuous coombe to the south and was subsequently used as a parish boundary. Both cross ridge dykes were described as uninterrupted earthworks by Hoare (1812, 249–50) but they were evidently ploughed in the 19th century as a century later Sumner found only fragments, mostly on the scarps (1988, 63, Numbers 3 and 4 [1913]). Their central sections have particularly suffered from ploughing due to their location across the flattish top of the ridge, which was enclosed in the mid-19th century.

As a type of monument, cross ridge dykes are defined by their relationship with the local topography. These two bisect the ridge and are characteristic of the pattern seen along the Ebble/Nadder ridge, where their regularity is striking in comparison

with the neighbouring ridges (Fowler 1964, 47; Tilley 2010, 127). To the north, the Grovely Ridge is much more heavily wooded and although it appears to lack cross ridge dykes, it carries the Grovely Ditch, also known as 'Grim's Ditch', along much of its length. To the south, the Ox-Drove Ridge also carries a linear earthwork known as Grim's Ditch and has a number of small dykes, towards the narrower western end, but most do not appear to extend completely across the broader ridge top (Fig 14).

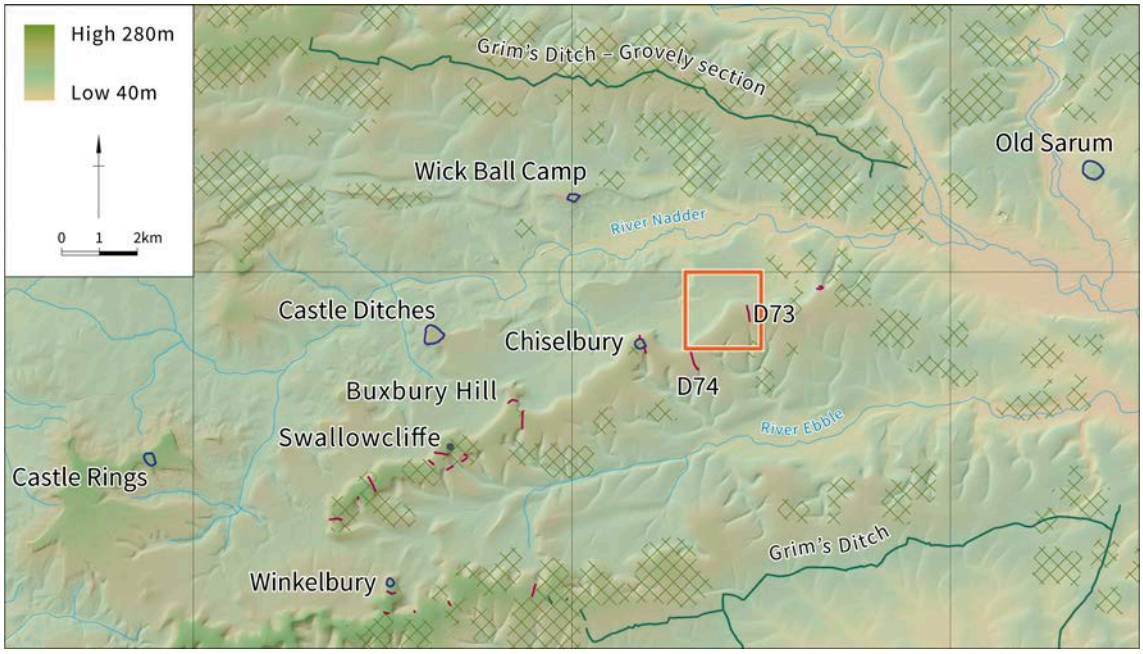


Figure 14: The later prehistoric cross dykes [red], linear ditches [green] and hillforts [blue]. The green hatching is an approximation of the 'Celtic' field systems, as mapped by the South Wiltshire project (RCHME 1999). The base map comprises: Height Data © Bluesky International/Getmapping PLC; contains OS data © Crown copyright and database right 2019.

Fowler suggests a mid-1st Millennium BC date for the cross ridge dykes, based on the apparent associations with an Iron Age settlement on Swallowcliffe Down (Fig 14) but admits, with such limited evidence, the other cross ridge dykes could be earlier or later (1964, 51). There are differences between the profile of the 'spur' dyke on Buxbury Hill, which cuts off the promontory, and others along the ridge, which reinforces the idea that the various dykes were probably created individually, rather than as part of a single plan (ibid; Fowler 1965, 49). They may have functioned as physical *and* symbolic boundaries and routes in the landscape, perhaps from the middle Bronze Age onwards (Tilley 2010; English Heritage 2011).

The presence of the few possible round barrows and cross ridge dykes is also remarkable given the lack of many other earthworks on the ridge top. Hoare noted that other earthworks towards the western end of the ridge had "been interrupted by tillage" – they had already been ploughed by the early 19th century (1812, 249). What we see today is a composite pattern of fragmentary survival, in which ploughing over the last century or so has made it very difficult to understand the relationship of the cross dykes with the later prehistoric 'Celtic' fields, although sub-

surface features may survive which could form cropmarks. The presence of such field systems suggests the area was permanently occupied in later prehistory but there are only a handful of hillforts and other settlements known; all located on the higher ground (Fig 14). Fragments of field system survive as earthworks on Compton Down but without further work, including targeted excavation for dating evidence, they are extremely difficult to date accurately and could be later prehistoric or medieval. Archaeological evidence for activity within the project area over the next two thousand years or so is slight. For the Roman period there is just a single find of pottery, a brooch and a coin from Hurdcott Home Farm.

Early medieval and medieval

The 'Compton' name translates from the Old English 'cumb' – coomb or valley – and 'tūn' – farmstead or village (Gover *et al* 1939, 399). This clearly suggests there was a village along the valley in the early medieval period (circa AD 500–1000), although the settlement could have earlier roots. The early medieval manor came under the jurisdiction of South Damerham Hundred, much of which was held by Glastonbury Abbey, but in 1086 the manor of Compton was held by the King and had a mill, some pastureland, meadows and two woods (Craven 2013, 8).

The personal name 'Chamberlayne' was added in the early 13th century when that family took possession but split the estate into two half-manors; the Chamberlain half-manor and the Haversham half-manor. By 1274 a deer park had been created but was subsequently dis-parked and the park shifted west to adjoin the house (Barker 2006, 36). Free warren was granted in 1300 but may have been confirmation of an existing practice. The Penruddock (or Penruddocke) family purchased both half-manors in the 16th century, reuniting the manor, and held it for the next 400 years (Craven 2013, 11; 19).

Improvement

The growth and development of landed estates was a characteristic phenomenon of the post medieval period, as the absolute property rights enabled by the suppression of the monasteries and emergence of a global economy afforded landowners power over the exploitation and physical appearance of extensive tracts of countryside (Everson and Williamson 1998, 145; Tarlow 2007). The changing perceptions of enlightenment and beauty, alongside the drive for agricultural 'improvement', and as interpreted by the Penruddock family, has left distinct features in the landscape.

The family seat, Compton Park House, is Grade I listed and was built in the late 16th century, northeast of the Grade II* listed parish church of St Michael, on the manorial site shared by the farmhouses of the two medieval half-manors and perhaps incorporating material from one of them (Craven 2013, 13). The house was refitted internally by Sir Edward Penruddocke in the late 17th century but was rebuilt by Charles Penruddocke in the late 18th century, with further additions in the 19th. The stable block is also from the late 18th century and listed Grade II.

The Penruddocks were at the centre of the Royalist Penruddock uprising in 1655, for which the Catholic Colonel John Penruddock (1619–1655) was tried and executed at Exeter (ibid, 1). Once restored to their estate they planted and named several trees in the park [for example the King's Elm and King Edward's Oak] to demonstrate the family's continued Royalist support; a tradition honoured in 2012

with the planting of a tree in the modern cemetery extension for Queen Elizabeth II's diamond jubilee. Throughout the 18th and 19th centuries members of the Penruddock family served as High Sheriffs for Wiltshire and Wilton and Ministers of Parliament for Wilton and Salisbury. In the early 19th century they also funded a day school in the village.

Figure 15: The earthworks of house platforms, crofts and a back lane in Compton Chamberlayne, looking south. SU 0229/5 NMR4101/14 17th May 1988.

Although the modern village has retained a number of older buildings from the 17th century, in plan it has compacted over time into the single street north from the A30 known in the late 16th century as West Brook Lane (ibid, 5). The medieval village straddled the valley, with two parallel main streets, one either side of a brook flowing north into the river Nadder, connected by lanes. East Brook Lane was still inhabited according to John Seagrove's estate plan of 1769 (WSRO 332/284), and Andrews and Dury's map of 1773 (WANHS 1952), but the lane must have been closed shortly after for the landscaping of Compton Park in the fashionable style of Lancelot 'Capability' Brown's vision of Arcadia (Craven 2013, 1; Mowl 2004, 79).

Only a few cottages remain at its southern end and the brook was dammed to create two large lakes from the earlier semi-formal series of ponds. Earthworks alongside West Brook Lane are also testament to the village's shifting and contraction (Fig 15). Beyond the park, the dramatic chalk scarp forming the southern horizon was further enhanced in the 19th century with the addition of geometric game coverts such as the Long Folly copse, which remain strong landscape features on the skyline (Land Use Consultants 2003).

Routes across the landscape

Perhaps the most ancient route through the project area is that along the top of the Ebble/Nadder ridge, known as the Ten Mile Course road, the London highway, the Salisbury Way, or the former Salisbury to Shaftesbury turnpike (Sumner 1988, 26; WSRO 332/252 f.23v; Timperley and Brill 1965, 137; Sawyer 2006, 175). It leaves Salisbury via Harnham Hill, is abutted by the race course and continues west along the ridge to Whitesheet Hill. The route was clearly well established by the early medieval period and is made use of in several charter bounds, where it is referred to as a *Hrycgweg* and *Herepath* but used in the modern sense of 'highway' or 'through-road' (Grundy 1918, 70). Contemporary roads are also recorded along the river valleys (ibid, 109).

The old Salisbury to Shaftesbury road was described as 'the best road from London to the west' in 1448 and in 1658 traffic included the post coach (Sawyer 2006, 175). Stukeley attributes numbered stones and 'the living index of a tree' at each mile of the Ten Mile Course to the Earl of Pembroke (Sumner 1988, 26) and the numbered 'M. Trees' are shown on a map of 1773 (WANHS 1952) but it is not clear if they were established before the route was turnpiked or as part of that process. The route was turnpiked in 1762, along with necessary improvements in maintenance and security (Cossons 1959, 270; Sawyer 2006, 176).

Petitions to renew the old turnpike were refused in 1784 and 1787, and preference given to a lower way from Barford St Martin to Whitesheet Hill along the greensand below. A petition in 1768 had already recommended the latter as 'more convenient… nearer than any other road… and having no hills to prevent expedition' (Sawyer 2006, 176). The Wilton and Shaftesbury Road was turnpiked in 1787–8; as the better road it has been the main route through the Vale ever since. Such improvements allowed the post coach to travel 10mph faster than previously. The turnpike Act expired on 1st November 1864, with responsibility passing to the County Council in 1889. A number of the turnpike trust's milestones survive along the modern A30, which follows this lower route.

The ridge top route survives as a byway formalised by enclosure [see below] which bends at the site of the former Compton Hut, at the south-eastern corner of the parish, and then follows the parish boundary west. In the early 20th century it was described as a broad drove way 'with only sheep, plovers, and hares to break the solitude' (Sumner 1988, 27). A century earlier, Hoare described the ridge as 'bleak and uninhabited' and commended the Fovant Hut, 5km further west along the ridge, to benighted travellers but only the Compton Hut is shown on the accompanying map (1812, 249).

The Compton Hut was probably one of several wayside inns along the route and appears to have had a long and interesting history. It was already an inn by 1750 (Craven 2013, 26) but significantly outlived the turnpike. It was still a public house

and garden in 1850, occupied by Mary Cash (WSRO TA Compton Chamberlayne, plot 346), but by 1865 was dilapidated. It later became a sanatorium for people suffering from respiratory problems. In 1907 it was described as containing 'apartments for down air' and by 1915 as the 'Dowager Lady Pembroke's Home for Consumptives' (Sawyer 2006, 189; Craven 2013, 27). It was demolished soon after, however, as it is marked 'now pulled down' on a map drawn in 1917 (AIFa 1917).

Agriculture

When the Penruddocks reunited the manor they commissioned a survey. A 'field book', or surveyor's field notebook (Hey 2010, 389), was produced in 1597 (WSRO 332/252, f.1). It gives a detailed outline of the parish and demonstrates that enclosure had already begun, with circa 400 acres 'recently' enclosed and the main settlement comprising over 500 acres of 'old inclosures' (Craven 2013, 16). Most of the parish's land was still farmed in common, but as the only significant landowners the Penruddocks could incorporate the smaller freeholds and customary tenancies privately over the following centuries. Enclosure of Compton Chamberlayne and the downs of Burcombe and Broad Chalke was complete by the end of the 18th century (Craven 2013, 17; EA38/4, 1792). By 1850, the agricultural land of Compton Chamberlayne was divided into three farms, all still owned by the Penruddocks and farmed by tenants (WSRO Compton Chamberlayne TA).

Naishes Farm takes its name either as the home of John atte Nasshe in 1348AD or from a lease held in 1698 by Richard Naish (Gover *et al* 1939, 399; Craven 2013, 18). The farmhouse of squared and dressed limestone is 19th-century and is set away from the regular plan courtyard of brick and stone out-buildings, several of which have been replaced by large modern sheds (Edwards 2014). Over the years the mixture of farming has changed, from sheep to dairy and corn and back to sheep and arable, reflecting broader agricultural trends.

Dewponds are a characteristic feature of chalk downlands, where the porous rock means a general absence of surface water. Sheep ponds were considered necessary by the late 18th century, but were expensive for the landlord to create and difficult to repair (Davis 1794, 98). Several are shown scattered across the downs on a map of 1773 (WANHS 1952) but the rectangular example halfway up the scarp of Compton Down can probably be dated to the mid-19th century from map evidence: it is not shown on the Tithe Award (1850, WSRO) but is included on the 1st edition Ordnance Survey map of 1888. It is one of several along the scarp that may have been constructed around this time in the rectangular shape common across Cranborne Chase (eg Bishop 2009, 28). They were usually made of rammed chalk or clay and straw (Smith 2005, 199; Hey 2010, 355).

Although not mapped for this project, the distinctive pattern of chalk pits on the ridge top is clearly visible on the vertical aerial photography (Fig 16) and a number of quarries and chalk pits are marked on early large-scale Ordnance Survey maps of the area, revealing a widespread pattern of small-scale extraction. Such extractive pits are often perceived as of little archaeological interest but, as recent research on the Blackdown Hills has shown, they can help us understand the evolution of the landscape's character (Hegarty *et al* 2017, 16). They also provide physical evidence of an often poorly documented but locally important activity.

Figure 16: The regimented composite pattern of filled-in extractive pits on the Ebble/Nadder ridge top, the result of improvement of the soil. Extract from: RAF Photograph CPE/UK/1811 Frame 1126 29th Oct 1946.

Use of the project area's minerals is long standing and integral to agricultural use of the landscape. Stone was quarried south of the village, north of the modern A30, but in the late 16th century the tenants' right to pasture their cattle in the quarry was dismissed; so was the right to take chalk from the chalk pits as the Penruddocks sought to make the manor more profitable (Craven 2013, 17). Chalk was used to improve the soil, especially where it had some acidity and needed to be 'sweetened' for arable use (Davis 1794, 63). On the ridge top numerous extractive pits were dug through the clay with flints into the chalk beneath and the soils mixed (Fig 16). Their evenly spaced pattern suggests systematic digging, even if not all were concurrent, and as many are marked as 'old chalk pit' on early Ordnance Survey maps they were probably dug in the mid-19th century, as part of the drive to break in new downland (Molland 1959, 76).

In the late 18th century chalk was often dug too near the surface and the use of larger pits was advocated (Davis 1794, 63). The larger chalk pits at the foot of the scarp are cut into the zigzag chalk, which is rich in marine skeletal material (Fig 13; BGS 2005). In the 19th century one contained a lime kiln that would have been used to burn the chalk and the resultant lime raked out to use on soils to reduce their acidity (Hey 2010, 471). These larger pits have not been filled in and survive as earthworks, mostly hidden in scrub and woodland.

The First World War

During the First World War the quiet agricultural Vale was completely transformed; first by gangs of surveyors and navvies and then by the arrival of thousands of soldiers. The Fovant and Dinton area, just west of Compton Chamberlayne, had been used for occasional summer manoeuvres since the 1870s (Crawford 2012, 202) but as the nearby Salisbury Plain Training Area (see Fig 1) filled up with regular and volunteer troops, other sites were urgently needed for military camps. The open countryside, proximity to the south coast ports and improved rail and road connections made southern Wiltshire ideal. By the middle of 1916 it was one vast training ground dotted with barracks, hutted and tented camps housing at least 120,000 men; roughly 10% of all troops based in the UK (ibid, 33; Cocroft and Stamper 2018, 10).

Figure 17: One of the best contemporary views of the First World War camps, taken from 'Australia Hill' looking north towards Camps 9 and 10. Photograph taken in 1918 and donated to the Australian War Memorial by Mr J Lee. [Accession Number J02904; Public Domain].

Towards the end of 1914 John Combes, of East Farm at Fovant, had part of his land requisitioned for a camp. That was just the start: subsequently land to the east and west of his farm was also commandeered and soon an area stretching from Compton Chamberlayne in the east to Sutton Mandeville in the west became one

vast military camp (OPC 2018, WWI). At Compton Chamberlayne the camps were known collectively as Hurdcott Camp because they straddled Naishes Farm and the Hurdcott estate. Initially they were administered from Fovant, along with the main hospital, and their numbering is part of the same sequence (Fig 19).

The earliest available aerial photographs, taken in the early 1930s (Figs 20 and 23), show useful detail of the earthworks and cropmarks relating to the camps and associated practice trenches. Unfortunately, they do not provide stereoscopic or complete cover of the area. Documentary evidence compiled online (AIFa; AIFb; OPC 2018) adds vital information to understand the history of the military camps and training facilities mapped by the aerial survey. Many references give simply Fovant or Hurdcott Camp(s) as the location, which makes pinning down the development of individual camps difficult, but they give some insight for the personal experiences of the soldiers who passed through them.

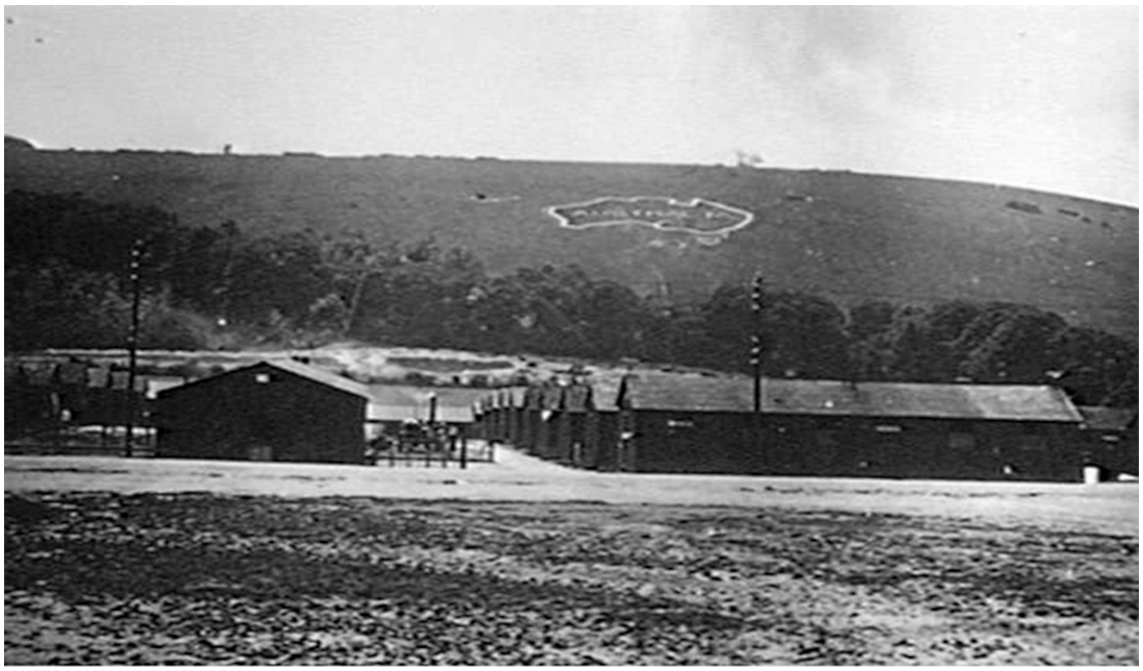


Figure 18: The Huts of No 9 Camp, 8th Training (Infantry) Battalion, 1st AIF, looking south. Note the white up-cast chalk lines of the practice trenches immediately below the trees behind the camp. Extract of photograph taken 1917 and donated to the Australian War Memorial by T McCann. [Accession Number: P0158.001; Public Domain]

Military Camps

Fovant Camps 1–4 (Fig 19), at East Farm, were constructed in the wet winter of 1914–15, which demonstrated the unsuitability of tented camps generally although the Vale was less likely to flood than contemporary camps in the Wylye valley to the north (Crawford 2012, 202). The Central No 29 hospital opened in 1915, next to the parish border, and hutted Camps 5 and 6, at Hurdcott, were occupied from September onwards. Initially they were used for training recruits but the focus changed with the increasing need to house men convalescing after being wounded at the front.

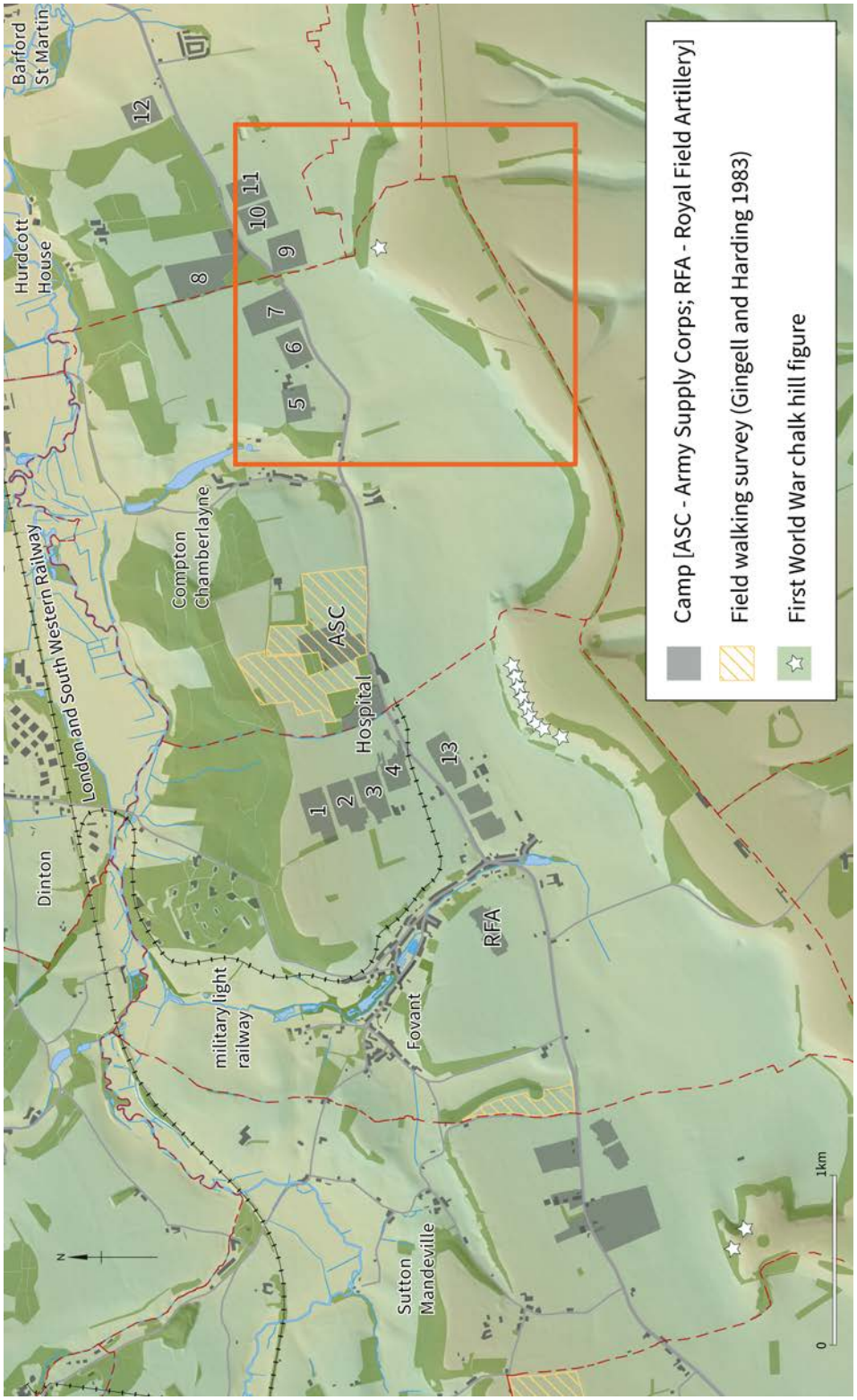


Figure 19: The numbered camps (compiled from: AIFa 1917; FHIG 2003; Firth 2018). The base map comprises: Height Data © Bluesky International/Getmapping PLC; contains OS data © Crown copyright and database right 2019.

The first signs and sounds of the Hurdcott camps were the heavy traction engines that ripped up the local roads and fields with their loads of timber and workmen (Sawyer 2006, 189). A fictionalised account describes the arrival of "cement, bricks, timber, window-panes, corrugated iron, drainpipes, electric light plants, surveyors, navvies, bricklayers, carpenters, beer, bad language…" (Street 1936, 149) and local feelings were mixed (FHIG 2005, 159). It was undoubtedly an opportunity for some: farm labourers could earn significantly higher wages working for the civilian builders hired to construct the camps (ibid, 148; Crawford 2012, 120).

The sites of the Hurdcott military camps are indicated on aerial photographs by the compacted ground of camp roads and concrete hut platforms (Fig 20). Others are suggested by the presence of the standard long narrow huts, sharing the same orientation, a few of which survived into the last decades of the 20th century. The camp numbers can be identified thanks to a sketch map accompanying the Official War Diary of the No 3 Australian Command Depot (AIFa 1917).

The site of the Royal Army Service Corps camp at Fovant was fieldwalked in the mid-1970s during an examination of the whole Vale (Fig 19). The most common element of all of the assemblages was prehistoric lithics (Gingell and Harding 1983, 17). A small amount of medieval pottery was noted from elsewhere but one wonders how much early 20th-century evidence was to be seen in the plough soil: typically this might include uniform buttons and cap badges, utensils stamped with the service numbers of their owners, or perhaps pieces of jars and bottles indicative of daily life within the camp (Appleby *et al* 2015, 12–15; Miles 2018).

Each camp comprised about 40 huts and facilities for a battalion of infantry, or about 1000 men (Crawford 2012, 47; Appleby *et al* 2015, 32, Fig 2.11). The standard plan was adapted to suit local conditions and topography but included several messes for the various ranks, dining halls, ablutions and latrines, horse lines, a recreation hut and a central cookhouse. The accommodation huts measured about 60ft [18m] long by 20ft [6m] wide, with a height of about 10ft [3m], and were designed to house 22–26 men and one NCO [non-commissioned officer] although many evidently housed 30 men (AIFa 1917), or on occasion about 50 (Crawford 2012, 210). Most huts were erected on brick piers with wooden frameworks and corrugated iron roofs, the planked walls lined with asbestos and heavy paper. Each hut had a door at both ends and at least one stove to heat it.

Wastage and supply of foodstuffs for so many men were clearly important issues. Troops were encouraged to help support themselves by growing produce and even livestock. Every available plot of land between the huts and spare parts of the parade grounds were cultivated and sown with vegetables. The 8th Australian Training Battalion won a silver cup for their display of garden produce at Hurdcott (ibid, 58). The 15th West Yorkshire Regiment had its own pig farm in agricultural buildings at Fovant in 1915 (Crawford 2012, 54).

Every major camp had its own military post office and post mark; there was even a camp newspaper from July 1917, the Hurdcott Herald (AIFa 1917). Fovant had a YMCA, a cinema and theatres where entertainment was provided by touring professionals and troupes drawn from the soldiers. The 'Kangaroos' from Hurdcott camp were billed as the 'Costume Comedy Concert Company' and played Salisbury's New Theatre in May 1918 (Crawford 2012, 139). Other troupes

Figure 20: The camp roads and huts of Camps 5 and 6. Extract from: CCC 11752/1747 1930s. Crawford Collection.

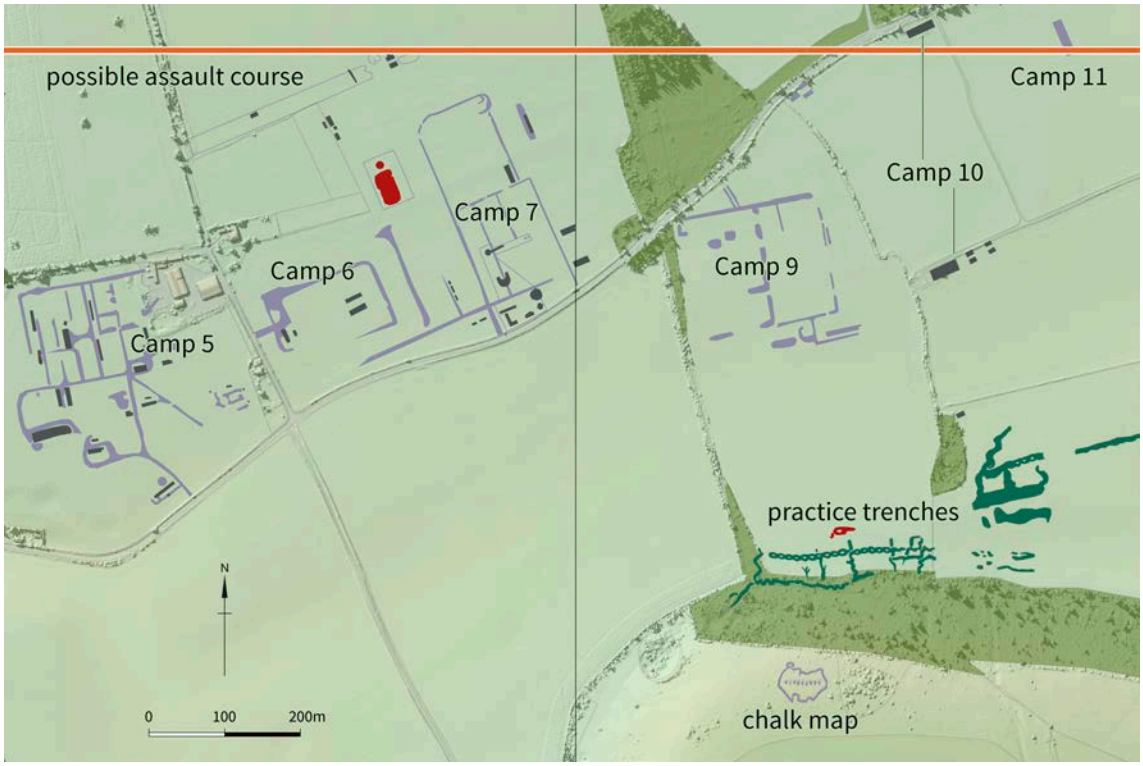


Figure 21: First World War features mapped by the project. Ditches are dark green, banks dark red, huts and hut platforms are dark grey and the compressed ground of camp roads and other hard-standing are shown in purple. The base map comprises: DTM derived from 0.5m lidar data © Environment Agency; OS data © Crown copyright and database right 2019. Ordnance Survey licence number 100019088.

included the 'Boomerangs' and the 'Cooees'. The military light railway was added after much of the initial construction at Fovant was completed. It opened on the 15th October 1915 and connected the hospital to the main London and South Western Railway line at Dinton (Fig 19; Crawford 2012, 50).

Figure 22: The rows of suspended sacks that made up the bayonet training course of the 12th Training Battalion. Photograph taken 18th December 1918 and donated to the Australian War Memorial. [Accession Number: D00215; Public Domain]

Training Camps

At first the camps were used for training raw volunteer recruits in preparation for service on the front line, a process taking just a few months. From September 1915 onwards Camps 5 and 6 at Hurdcott housed various Regiments from the north of England, including the 'Accrington Pals' (Crawford 2012, 208; MOAT 2018). In January 1916 the 4th London Regiment arrived and found Hurdcott camp to be arranged on suitably designed principles, with well-ventilated sleeping huts and roomy messing and recreation rooms. The sports and training grounds extended over 5 acres (Crawford 2012, 208). Every officer and man had to train with the bayonet (Fig 22) and the 4th constructed a bayonet fighting assault course close to a bombing ground. It would have been one of several near the camps. Unfortunately, firing ranges and bayonet assault courses usually leave no archaeological trace (Cocroft and Stamper 2018, 21) although one possible assault course, immediately north of Naishes Farm, was mapped from aerial photographs (Fig 21).

By the spring of 1915 the Army had become resigned to the importance of trenches in the modern theatre of war. This was reflected in training programmes and most camps had sets of trenches dug nearby (Crawford 2012, 27; Appleby *et al* 2015, 39). From late 1916 gas rooms and chambers were also established at camps including Fovant so that soldiers could practice putting on and wearing gas masks under simulated attack (Crawford 2012, 34). Parade grounds filled the larger gaps within the camps but other training activity left no physical trace on the landscape. The location of the camps had been chosen with the surrounding countryside in mind as a training resource. The Vale and Downs were used for route marches, presumably over a variety of routes that made the most of the surrounding terrain, and shorter, less strenuous walks for those convalescing.

Practice trenches

A complex of practice trenches was identified as earthworks and cropmarks at the foot of the scarp. Practice trenches were dug for a variety of reasons:

- to provide soldiers with realistic training in creating and maintaining trenches and other field defences
- to familiarise soldiers with trench life; what it felt like to spend time occupying the real trench systems
- the physical exercise improved the soldiers' strength and fitness, encouraged team work and camaraderie
- to keep the men occupied

Training could range from just spending a few nights out under the stars to extending the trench network, digging small trenches perpendicularly out from existing lines then used to extend the line forwards [saps] and throwing bombs. Procedures for swapping over without alerting the enemy could be practiced, with emphasis on units relieving each other at night, and rations would be brought up from the rear (Crawford 2012, 38; Cocroft and Stamper 2018, 16). Photographs taken in 1915 show Lewis machine guns, trench mortars and catapults being used for training in the area. There are also several diary accounts of soldiers doing overnight stints that included the blowing up of a mine (Rose 1916–18) or home-made bombs and catapults (Crawford 2012, 208). The latter notes how "the bombs and explosives used are terrifying in their intensity". Late in 1915 the 2nd Hull Service Battalion, encamped at Hurdcott, was taught how to make bombs from jam-jars and condensed milk tins, with several fatalities (Crawford 2012, 35). Instructors were particularly vulnerable, especially when it came to retrieving 'duds'.

A simple narrow, featureless trench was dug at Fovant in the autumn of 1915 to give men practice at jumping in and out with rifles (Crawford 2012, 38). The examples mapped at Hurdcott (Figs 21 and 23) are far more sophisticated and represent at least three groups or systems that were probably created and developed at different times. Entries in the personal diaries of men stationed at Hurdcott record that the 4th London Regiment improved on the practice trenches started by their predecessors in January 1916 (ibid, 208) and September 1917 saw new trenches dug behind the officers' quarters (Rose 1916–18).

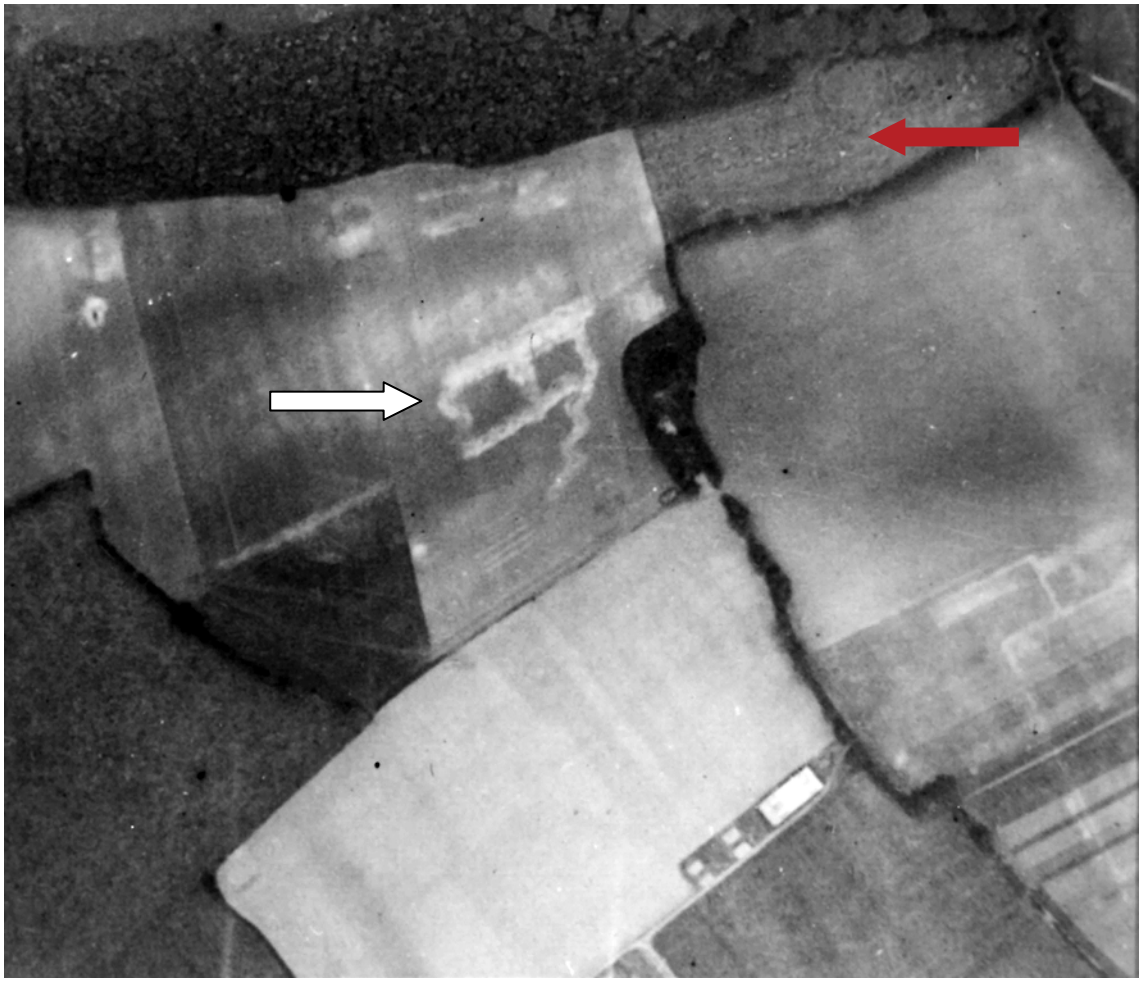


Figure 23: A 1930s vertical aerial photograph shows the practice trenches. Some have already been filled in and the chalk spread by ploughing [white arrow] but the westernmost [red arrow] survived as earthworks until at least 1946. The surviving earthwork trench is hidden in the trees at the top of the image. Note also the remnant hut, hut platforms and camp roads in the bottom right quarter of the image. Extract from: CCC 11758/M146 1930s. Crawford Collection.

The surviving practice trench at Hurdcott was clearly dug full size and is still relatively deep at around 1.5–2m (Fig 24). It was kindly brought to the survey team's attention by the local volunteers. The characteristic 'crenelated' pattern can be identified in the lidar data but, unfortunately, the ground resolution is only 0.5m which is not sufficient to map the features in any great detail. A field visit in late November 2017 confirmed that one trench line is extremely well preserved and far more complex than the pattern visible in the lidar data would suggest. Parts are obscured by fallen trees lying across the trenches and patches of evergreen foliage which reflect the last pulse beam, hiding the archaeological features below.

In plan the surviving trench is crenellated to minimise casualties from enfilading fire [along the trench] (Figs 24 and 26), with several island traverses to further reduce the effects of shellfire. There are several individual and grouped slight depressions on the front edge of the trench that may have formed a 'rest' or bay for a rifle, with a 'fire step' (Fig 25; Appleby *et al* 2015, 40). Spoil excavated from the trench was used in front as a parapet and behind as a parados, providing further

protection. Full analytical earthwork survey would clarify the actual layout and may reveal signs of material used to revet the trenches.

Figure 24: The distinctive crenellated plan of the surviving practice trench at Hurdcott, preserved in the woodland below the chalk map. November 2017.

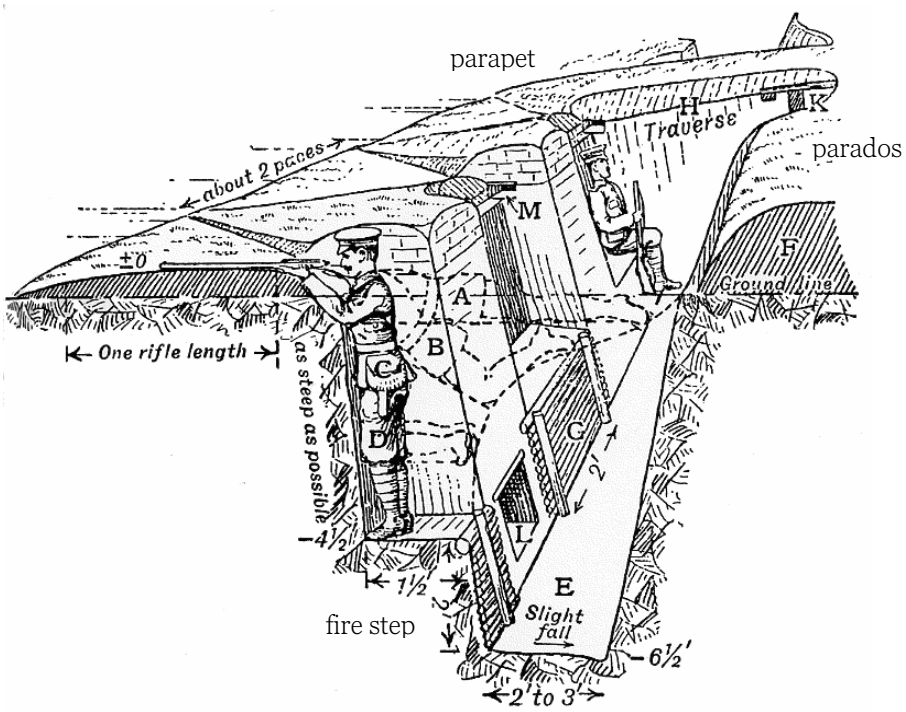


Figure 25: Contemporary instruction diagram for constructing a revetted fire-trench with rifle bays and traverses (After Solano 1914).

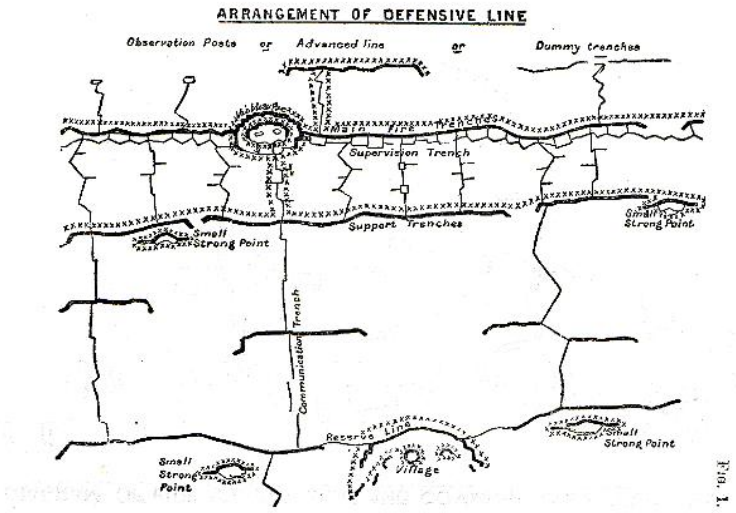


Figure 26: Instruction diagram for constructing a defensive line. Note the 'Supervision Trench' which combines with the front Firing Trench to form a chain. From HMSO 1916.

The trench overlooked another parallel trench to the north – the front line – which has been mapped from cropmarks on aerial photographs and was connected by several zigzag communication trenches. The front or firing line was also crenellated, with each traverse enclosing a small 'island' which enabled troops to pass along the line without affecting those already in firing positions. Uphill, to the south of the surviving trench, are further earthworks that could be dug outs and strong points (Fig 26). Together with other features that have since been removed, such as sandbags and barbed-wire entanglements, the trench system would have presented a formidable obstacle.

The practice trench system at Hurdcott has clear morphological similarities with one of the best surviving examples on Beacon Hill, Salisbury Plain (Fig 27), which may also have been constructed by Australia and New Zealand Army Corps [ANZAC] troops encamped nearby at Sling Camp, Bulford (Brown and Field 2007).

Figure 27: The surviving earthwork practice trenches on Beacon Hill, near Bulford. NMR 24863_047 17th June 2010

Military Hospital

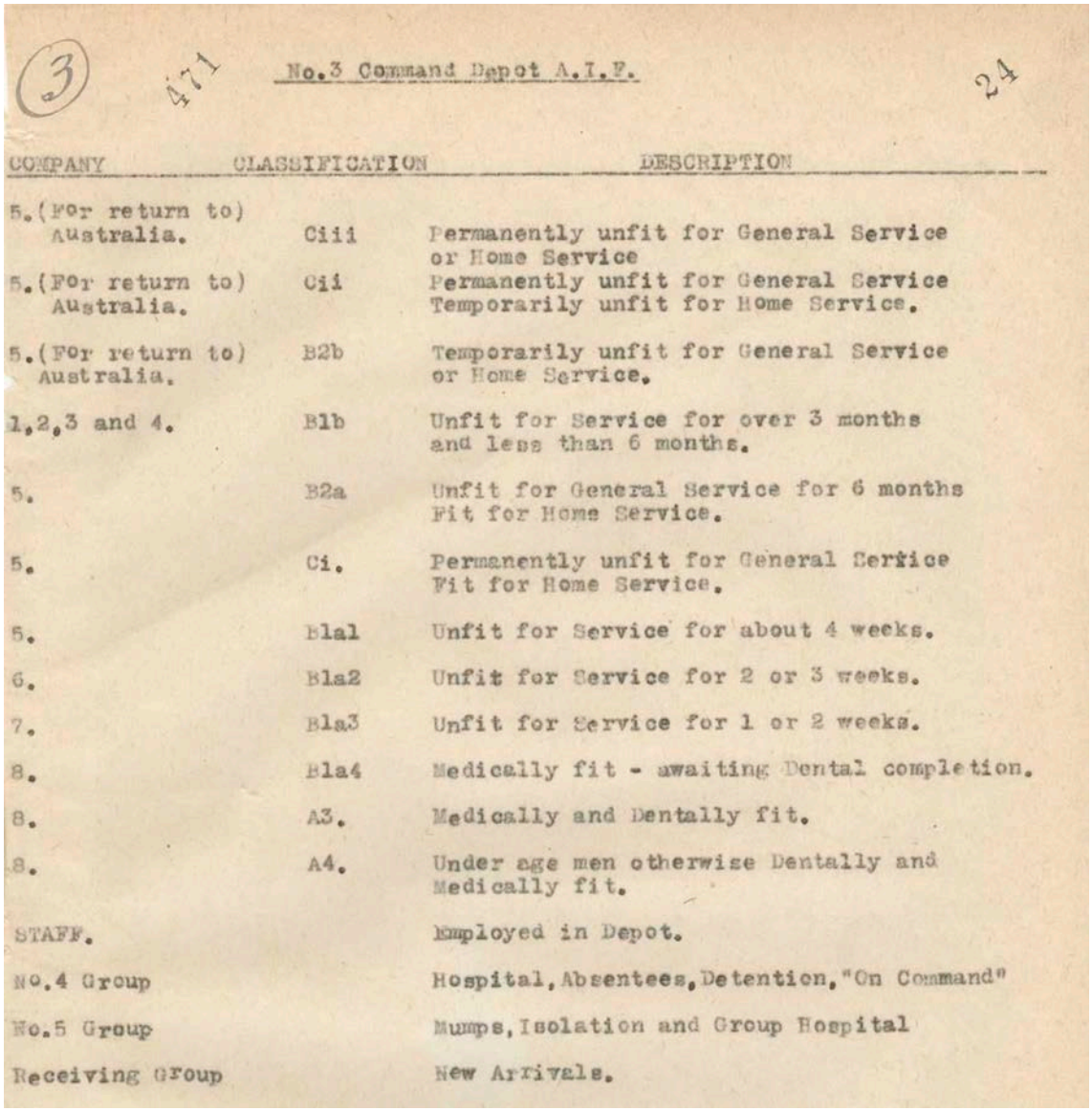
In mid-1916 the focus of the camps changed. The idea of the hutted hospital was adopted widely during the First World War and the War Office soon drew up plans to include operating theatres and accommodation for nurses (Cocroft and Stamper 2018, 223). During the Gallipoli Campaign (19th February 1915–9th January 1916), thousands of wounded Australian soldiers were sent to English hospitals, but then came the question of where to send them to convalesce as being sent home just wasn't practical. In the summer of 1916 raw recruits at Hurdcott were joined by soldiers convalescing and re-training after being wounded or falling ill at the front.

Sick or wounded men were discharged from hospital to a Command Depot, whose primary purpose was to return soldiers to the front as quickly as possible. On 12th March 1917 Hurdcott camp was officially taken over by the Australian Imperial Forces (1st AIF) Command Depot No 3, with their headquarters (HQ) at Hurdcott House. The Depot initially served high category patients likely to be fit for active service within about 6 weeks (Fig 28; AIFa 1917; Crawford 2012, 209). Within days 1,700 men had arrived.

The No 3 Depot official war diaries describe the area as ideal for a convalescent base and generally approved the hutment camps, which were considered well laid out and equipped, with sufficient grounds for training and covered sheds for use in inclement weather (AIFa 1917). The huts were described as of corrugated iron, lined and floored with wood. Each accommodated 30 men with ample window space – good ventilation was essential. A central powerhouse provided electric lighting and heating was by coal fire stoves.

The Command Depot had a rolling programme of medical treatment and graduated physical training depending on the patients' category, which was repeatedly assessed (Fig 28). The Depot was divided into four companies, each taking men of a certain category [B1a1 to B1a4]. Much of the physical training was carried out by a special staff of British instructors who provided exercise, therapeutic gymnastics and massage. From simple exercises and short walks [B1a1] to advanced physical drills and 6 mile a day route marches [B1a4] (AIFa 1917; Cocroft and Stamper 2018, 195). Perhaps most sinister of all, every military hospital had a dental department too; men had to be able to clench the mouth piece of a gas mask securely in place to return to active duty (AIFa 1917). Once declared medically and dentally fit, category 'A3', men were transferred to an Overseas Training Brigade before shipping out back to the front.

The Depot's official war diaries explicitly recognise the psychological nature of the men's affliction and describes how 'great pains are taken to restore them to a normal state of mind' through various comforts and entertainments (AIFa 1917). Training was very different to that normal for soldiers and weapons were kept to an absolute minimum within the Depot. From 1916 the War Office had placed more importance on the role of sport in keeping men healthy and fit and ANZAC Day [25th April] 1917 was celebrated by a special church parade followed by a sports meeting so large it was completed the following Saturday. The diaries make several mentions of cricket and other activities; a cinder tennis court was laid at Hurdcott in 1917 and a boxing tournament was held in 'a fine stadium erected in a natural amphitheatre in front of the officers' mess in Camp 5' (ibid).



(3) 471 No.3 Command Depot A.I.F. 24

COMPANY	CLASSIFICATION	DESCRIPTION
5.(For return to) Australia.	Ciii	Permanently unfit for General Service or Home Service
5.(For return to) Australia.	Cii	Permanently unfit for General Service Temporarily unfit for Home Service.
5.(For return to) Australia.	B2b	Temporarily unfit for General Service or Home Service.
1,2,3 and 4.	B1b	Unfit for Service for over 3 months and less than 6 months.
5.	B2a	Unfit for General Service for 6 months Fit for Home Service.
5.	Ci.	Permanently unfit for General Service Fit for Home Service.
5.	B1a1	Unfit for Service for about 4 weeks.
6.	B1a2	Unfit for Service for 2 or 3 weeks.
7.	B1a3	Unfit for Service for 1 or 2 weeks.
8.	B1a4	Medically fit - awaiting Dental completion.
8.	A3.	Medically and Dentally fit.
8.	A4.	Under age men otherwise Dentally and Medically fit.
STAFF.		Employed in Depot.
No.4 Group		Hospital, Absentees, Detention, "On Command"
No.5 Group		Mumps, Isolation and Group Hospital
Receiving Group		New Arrivals.

Figure 28: The patient category system (AIFa 1917).

In the autumn the camp facilities were greatly expanded to accommodate lower category patients and relieve congestion at the No 2 Depot. Hurdcott became a 'sub-hospital' and two new camps, 7 and 8, came into operation on 27th October 1917. The Depot increased to house around 3,500 men of various categories, now divided into 4 groups rather than companies and each group accommodated in one camp (AIFa 1917; Crawford 2012, 209). Camps 5 and 6 were set aside for the low category men [B1b]. The number of beds in each hut was reduced to 26, five huts became a camp hospital, two more for dressing wounds and another was used for assessing the new arrivals. The increased number of patients on crutches prompted the replacement of the duckboards with stone paths and alternative meal arrangements were made for invalided men.

More camps nearby were evidently being constructed around this time as the No 4 Australian Command Depot moved from Codford into Hurdcott Camps 9, 10, 11 and 12 between 6th and 15th November 1917 (AIFb, Nov 1917). The No 4 Depot set up HQ opposite Camp 10. Unfortunately, entries in their official war diaries are much sparser and it is not clear which patient categories they treated. Both Depots clearly tried to give their men a decent Christmas with a round of concerts, entertainments and dances, decorated huts, presents and substantial menus. No 3 Depot even had a fancy dress football match with prizes for the best costumes.

Dispersal Centres

As the fighting overseas came to an end the role of the Fovant and Hurdcott camps changed again. Thousands of men from France still passed through the camps but this time they were headed home. Although military discipline continued, the soldiers were no longer training to fight and other more vocational training was substituted. Impatient to get home, some of the soldiers behaved poorly and the 'Diggers', a slang term for soldiers from New Zealand and Australia made popular on the Western Front, had a general reputation for shirking and insolence (Stanley 2010). Charles Penruddock had frequently complained of trespass and poaching (Crawford 2012, 68), while others thought them a general nuisance, worse than during the War (Street 1936, 172). Riots at Sling Camp on Salisbury Plain prompted the carving of the chalk Bulford Kiwi in 1919 in an attempt to keep the men occupied (Hilts 2018).

Figure 29: An almost derelict Hurdcott Camp and the Map of Australia on the scarp behind. Photograph taken *circa* 1919 and donated to the Australian War Memorial by R H Barker. [Accession Number: P00151.032; Public Domain]

No 3 Depot was ordered to prepare to disband in August 1918, with the B1b category men to go to the No 2 Command at Weymouth and the remainder to go to

No 1 Command at Sutton Veny (AIFa, August 1918). This information comes from the last available entry for the No 3 Command Depot War Diary but with no subsequent entry it is unclear when exactly this took place or who then occupied Camps 5–8 at Hurdcott, if anyone.

In October 1918 groups of soldiers [drafts] started leaving No 4 Command Depot for the return to Australia, amidst an epidemic of bronchial pneumonia that claimed a number of lives (AIFb). By January 1919 the usual functions of the Depot had practically ceased and over half of the men arriving at Hurdcott camps from France were evacuated direct for transport back to Australia, while those needing medical attention were assessed individually (AIFb, January 1919).

At 3:15pm on 12th March 1919 the No 4 Squadron Australian Flying Corp (AFC) arrived at Camp 11, Hurdcott, awaiting embarkation to Australia (AIFc). On Anzac Day 25 men from the Squadron had represented the Flying Corps in the march of Australian Troops through London but all ranks were anxious to head home. Their mascot, a French boy they'd rescued and smuggled over in a kit-bag, went with them (Crawford 2012, 211). Some men left to take up work in England but on 6th May, at 10am, the remainder of the 4th AFC marched out to Fovant were they entrained for Southampton and the Hired Military Transport (HMT) *Kaisar I Hind* (AIFc). This P&O ship was originally launched on Sunday 28th June 1914, the day that Archduke Franz Ferdinand was assassinated in Sarajevo (PandOSNC 2019).

Many British troops also received their demobilisation papers at Fovant; perhaps 2–3,000 soldiers a day (Crawford 2012, 205). These included the last living 'Tommy', Harry Patch (FHIG 2012) and JRR Tolkien (FHIG 2005, 150). As the soldiers moved out the camps became deserted (Fig 29). Fovant camp was closed between June and November 1920 (Crawford 2012, 205). Massive sales were held to dispose of everything: blankets, chairs, musical and sports equipment and even the huts themselves. One became the village hall in Compton Chamberlayne, a common trend across the country as people sought new social amenities and fitting memorials (ibid, 169; Appleby *et al* 2015, 147). Few camps left permanent marks on the surface. The War Office offered compensation of £30 an acre but often the fields contained pieces of concrete for some time, for example in the Hospital Field at Fovant and as mapped by the aerial survey (Figs 20 and 21).

The Vale was touched by the War in other ways: Charles Penruddock lost two sons in the conflict and so when he died in 1929 the Compton Chamberlayne estate was sold. The Earl of Pembroke had already sold the Fovant estate in 1919 and the Hurdcott estate was sold in 1921 (Crawford 2012, 205; HEA 1921). The War Office still rented some of the land into the 1920s while the camps were dismantled. Interestingly, Land Girls still lived in a 'bungalow' [one of the camp huts] on the Hurdcott estate in 1921 (HEA 1921).

The Second World War

The fields at Naishes Farm were again earmarked for a military camp during the Second World War (Fig 30), however, this time the camp doesn't appear to have been built; instead the field was ploughed for the first time in years in 1943 [Helen Roberts, pers comm]. Unfortunately, there are no available aerial photographs of the project area taken in the early 1940s to show anti-invasion defences and other Second World War military activity in this part of the Vale.

Figure 30: Layout 'D' for the proposed Second World War camp in the fields east of Naishes Farm. Note how the pattern of huts is more random in an attempt to disguise the camp's function. WSRO: WSA [F4/500/6].

Aerial photographic and lidar survey and analysis

Wider landscape survey and analysis focussed on the contextual area of 4km^2, roughly centred on the chalk map. Vertical and oblique aerial photographs from the Historic England Archive, Wiltshire Historic Environment Record collection and Air Photography of Great Britain (APGB – supplied through Next Perspectives) were examined, along with Environment Agency lidar with a ground resolution of 0.5m. New aerial photography was also requested, although the chalk map lies within the Military Air Traffic Zone [MATZ] for Boscombe Down and access can therefore be difficult [Damian Grady, Historic England, pers comm].

Selected aerial images that best show the archaeology were scanned and rectified in the University of Bradford's AERIAL 5.36 programme to within ± 2m of Ordnance Survey Mastermap vector data. Control information was taken from historic Ordnance Survey raster mapping for older field boundaries which have since been removed, which is less accurate, whereas features mapped from orthophotography or lidar will be more accurate [sub-metre]. Height data at 5m contours was used to compensate for undulating terrain. The rectified aerial photographs were added to the project map in ArcGIS 10.3 and all visible archaeological features, from the Neolithic to the 20th century, were transcribed to Historic England standards (Winton 2018).

Existing monument records in the Historic England National Record of the Historic Environment (NRHE) were enhanced and new records created where appropriate. Each record consists of a textual description of the feature linked to its indexed location, period, type of feature and the form of evidence. Where applicable the record also includes a cross reference to other monuments and datasets - such as the HER (Historic Environment Record). The record also lists the main aerial photographs or lidar and other sources for each feature.

Summary

Analysis of the project area clearly disproves Sir Richard 'Colt' Hoare's assertion that "nothing interesting occurs in the antiquarian line between Salisbury and Fovant" (1812, 250) although, to be fair, our scope of interest is much broader today. Some periods are still poorly understood. For example the remaining fragments of two cross dykes have been accurately mapped by the project but examination of aerial photographs and lidar data of a much wider area, such as the whole of Cranborne Chase AONB, may help identify new sites and increase our understanding of this landscape.

Most significantly, the project has created a number of new records for the First World War sites in the Vale, providing essential context for the map of Australia and adding much needed detail to the gazetteers created through earlier research into the field archaeology of the period (Schofield *et al* 2006; Brown 2017). Although this project improves our knowledge of the First World War activity, the Vale remains much overshadowed in the literature by the Salisbury Plain Training Area. Undoubtedly, further research is required to establish the location and extent of other camps, practice trenches and other military sites in the Vale of Wardour and across southern Wiltshire.

IMPACT

The 'lost' chalk map of Australia was successfully reinstated by volunteers working over the summer of 2018. Maintenance continues in 2019 via a schedule of working picnics. As a result the site has been removed from the Heritage at Risk Register.

One of the main project aims for Historic England was public engagement:

- Coverage appeared on the BBC's Inside Out regional magazine programme for the south on 12th March 2018, with an update on the 5th November 2018. The BBC also created a short film for their website: https://www.bbc.co.uk/news/av/uk-england-wiltshire-46060246/volunteers-restore-australian-map-to-wiltshire-hillside
- A number of tweets have been made by MoAT @ww1australiamap and Historic England following the progress of the project. Tweets on ANZAC day [25th April 2018] by @Historic England achieved 14,731 impressions and 315 engagements, and by @HE_SouthWest over 8,000 impressions and 70 engagements – the third most popular regional tweet that month.
- Our research was mentioned in a Heritage Calling post about First World War connections with the Commonwealth.
- A webpage https://historicengland.org.uk/whats-new/research/rediscovering-australia/ accompanied the Historic England Research magazine [Issue 10] marking the centenary commemoration of the end of the First World War.
- A joint paper on the project, by the author and Helen Roberts of MoAT, was given at the Wiltshire Archaeology Conference on 23rd March 2019. Feedback was very complimentary.

Other outcomes:

- Enhancement of the NRHE:
    - Trebling the number of archaeological monument records within the project area [from 6 to 18 after the project].
    - Creation of 24 new monument records; 12 of these were outside the project area but deemed necessary to improve the contextual record, especially for First World War sites.
    - Enrichment of 13 existing monument records; from refining spatial data to improving their indexing and textual description.
- Refinement of the scope note for the Monument Type Thesaurus term HILL FIGURE
- The well-preserved practice trenches are now recorded in the NRHE. They would benefit from detailed analytical survey, further research and consideration for designation.

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