

Report on the geophysical survey undertaken by Cornwall Archaeological Society’s Roman Cornwall Research Group at Carvossa, Probus, August 2023

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A geophysical survey was organised in 2023 by the Society’s Roman Cornwall Research Group to investigate the ditches surrounding the earthwork at Carvossa, Probus. The site has been proposed as another small Roman fort, and it was considered that the layout of the defences would be a significant factor in determining the nature of the construction and occupation of the enclosure. The survey demonstrated that the site was defined by a single rampart and ditch and lacked the evidence for entrances in all but the eastern side. Apart from the pottery assemblage, which spans the first to fourth centuries AD and would merit further study, there is still a distinct lack of convincing evidence for the presence of the Roman army at Carvossa.

For many years it was accepted that the Roman army had constructed just one fort in Cornwall, at Nanstallon, approximately 3.5 km west of Bodmin. However, following the identification, in 2008 and 2009, of two new Roman forts at Restormel (Nicholas and Hartgroves 2018) and Calstock (Smart 2014), a reassessment of enclosures included in the Cornwall and Scilly Historic Environment Record (HER) was carried out by members of Cornwall Archaeological Society’s Roman Cornwall Research Group (RCRG). This identified a small number of sites recorded as either extant earthworks or cropmarks with straight sides and of more-or-less rectangular plan which were generally ascribed to the later-prehistoric and/or Roman periods, which were considered worthy of further investigation as potential Roman military sites. One such site was the large sub-rectangular or trapezoidal earthwork at Carvossa, located between Probus and Grampound in central

Cornwall, which is a scheduled monument, first designated as ‘Prehistoric and Roman settlement at Carvossa’ in 1999 (National Heritage List for England (NHLE) 1016890).

Apart from the overall plan of the earthworks, it was noted that the Carvossa enclosure was located on the western side of a major river, in this instance the Fal, at a point where the river would probably have been navigable in the first century AD. This was a notable characteristic of both the Nanstallon and Restormel forts; setting them close to the lowest reliable fording points of their respective rivers and also enabling them to be supplied by boat rather than overland from the legionary fort at Exeter. The situation at Carvossa, however, is less clear cut. The enclosure lies at a distance of almost 1.5 km from the river, whereas the three known fort sites all lie within 0.5 km of the water. There are at least three comparable hilltop sites in the immediate vicinity of the enclosure at Carvossa

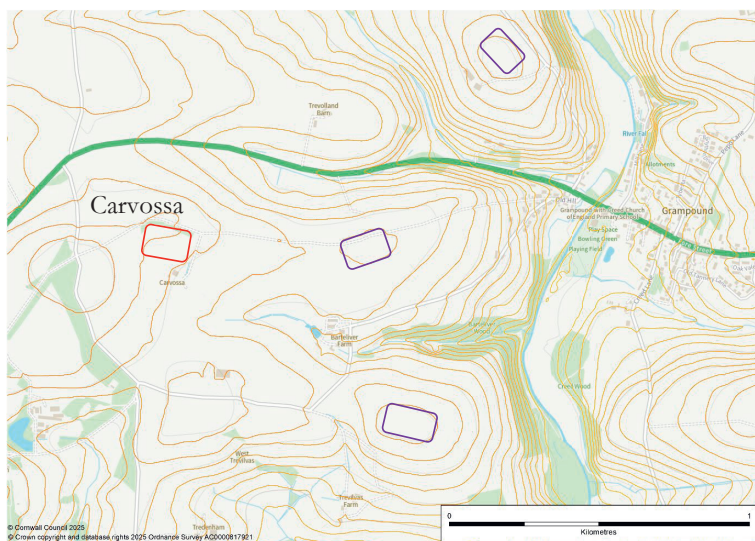


Fig 1 Carvossa – site location relative to the Fal, with suitable alternative locations in closer proximity to the water. (Basemap: Cornwall Historic Environment Record.)



Fig 2 Aerial photograph of the enclosure at Carvossa. (HER AP F69/224 taken June 2005 by Steve Hartgroves. ©Cornwall Council.)

which would have been a more suitable location if proximity to the stream was the main determining factor (Fig 1).

The area enclosed by the Carvossa earthwork, at around 2 ha, is comparable to the fort at Calstock, though the precise location of the northern side of that fort is conjectural and has yet to be revealed, but must lie somewhere beneath the old graveyard to the north and west of the church, as the land falls very steeply down to the river Tamar immediately beyond the churchyard. Carvossa is, however, considerably larger than Restormel and Nanstallon, both of which occupy less than 1 ha.

The proximity of the three known forts to areas associated with mineral extraction has also been noted. The site at Carvossa, although lying away from the main zones of mineralisation, is just 260 metres from an area of shallow mine working or prospecting, though it is not yet known which mineral was being sought here, nor at what date.

During excavations conducted at Carvossa over three seasons of work in the years 1968–71, (Douch and Beard 1970; Carlyon, 1987) this site produced an assemblage of Late Iron Age and Roman pottery, including a large proportion of exotic and continental imports. This was comparable

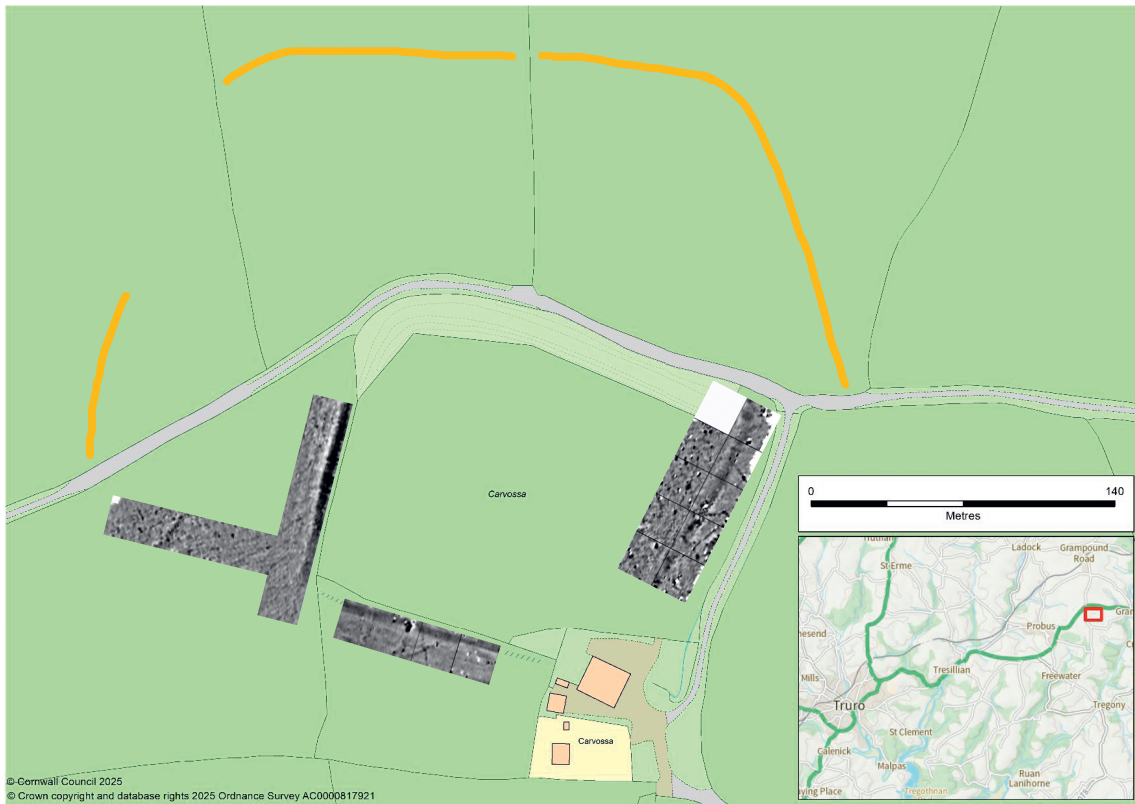


Fig 3 Locations of survey grids and the plan of the ditches surrounding the site, including the proposed 'outer enclosure' (in red) identified from aerial photos and surveyed in 2017 and 2019. (Basemap: Cornwall Historic Environment Record.)

to assemblages recovered from Nanstallon and Calstock (by excavation) and also from Restormel (as surface finds only). Several trenches were excavated to sample the interior of the enclosure, the rampart and ditch, and the entrance. All indications are that occupation at Carvossa was complex and multi-phased. Excavated finds, mainly pottery but also stone and metalwork, indicated a high-status enclosed site occupied from the late Iron Age through to the third or fourth centuries AD, with the main period of occupation falling between AD 60 and 130. Geophysical survey, conducted by the Ancient Monument Laboratory in 1980 at Carvossa, revealed fragments of several small curving enclosures and ditched features in the interior of the earthwork and a similar range of small curving enclosures in the area lying outside the eastern rampart in the neighbouring field (Bartlett 1981). Some of these features were confirmed by a re-survey of a small part of the

interior in 2004 (Cripps 2006). Despite the fact that large areas of the interior and a small area outside of the 'eastern entrance' have been surveyed, no features of the type indicative of Roman military layout or architecture have so far been revealed.

Preliminary work – the cropmark 'outer enclosure'

The RCRG's investigations of the site at Carvossa was inaugurated with small geophysical surveys, carried out in 2017 and 2019, to investigate a curving linear feature crossing the fields lying to the north and west of the main enclosure field at a distance of some 100m from the main earthwork rampart (see Fig 3). This feature was identified from aerial photos and plotted in the HER as MCO30023. It was thought that it might represent an 'outer enclosure' to the main earthwork, though

whether earlier, contemporary, or later cannot be inferred from the cropmark evidence alone.

The geophysical surveys revealed that these cropmarks represent a pair of roughly parallel ditches approximately 8m apart, curving north westwards from a field gate adjacent to the ‘old road’ at its eastern end, continuing roughly parallel and equidistant to the main earthwork, then curving south westwards to meet the road again approximately 350m further to the west. The cropmark did not reappear to the south of the road, though this may be due to different agricultural regimes on the two sides. The character of the features revealed by the survey data seemed more likely to represent a trackway.

The survey of 2023

The excavations of 1968–71 did not succeed in recording an undisturbed profile across the outer ditch of the earthwork, due in large part to the terrible weather conditions during the fieldwork. The eastern side of the enclosure was investigated, and the rampart was found to have a well-defined entrance at its centre. The excavations did not extend to the area of curvilinear enclosures lying outside of the enclosure identified by geophysical survey in 1981. Apart from this, there have been no excavations in areas lying outside of the present-day field boundaries which are assumed to have fossilised the original lines of the ‘inner’ rampart.



Fig 4 Carvossa survey team in action on the eastern rampart/ditch., left to right Les Dodd, Ryan Smith, Christine Wilson. (Photograph: Steve Hartgroves.)



Fig 5 Carvossa survey team in action on the eastern rampart/ditch, left to right Ryan Smith, Steve Hartgroves, Les Dodd. (Photograph: Christine Wilson.)

If Carvossa had been occupied by the Roman military during the latter half of the first century AD, as is the case with both of the excavated Cornish forts (Nanstallon and Calstock), it would be expected to have been defended by one or two deep military-style ditches with rounded corners and V-shaped profiles with ‘ankle-breakers’. In addition to the excavated gateway through the eastern rampart, there should also have been gateways through the ramparts on the other three sides. The aim of the 2023 survey was, therefore, to investigate the defensive ditches of the enclosure to determine whether the site conformed to the characteristic ‘small Roman fort’ layout seen at Restormel, Calstock and Nanstallon.

The 2023 survey was restricted to the field containing the fort itself and to the fields adjacent to its south and west sides. A road runs along the outside of the northern rampart and ditch, which both survive as impressive archaeological features. The road, however, prevents any survey work along this side of the site.

The survey commenced with a line of five 20m×20m grid squares sited as close as possible to the outer face of the hedge defining the western side of the enclosure. This very clearly revealed the presence of a single ditch running closely parallel to the hedge. This feature faded out at the point where it was expected to turn through 90 degrees to continue along the outer face of the southern rampart. This side of the site was considered likely to be the least disturbed, and therefore the most promising location for traces of a putative outer rampart to be revealed, but this turned out not to be the case.

To test the emerging interpretation that the western side of the site was defined by just a single rampart, like Nanstallon, rather than a double rampart as found at Restormel and Calstock forts, a second line of four 20×20m grids was laid out perpendicular to the initial surveyed area. A single slight linear anomaly was revealed running obliquely across the surveyed area, probably a recent track, but no trace of a second ‘outer’ ditch was seen.

The 1968–71 excavations had confirmed that the slight linear bank still visible on the ground on the eastern side of the ‘fort field’ was the remains of the eastern rampart, which had been cut through by a paved gateway approximately midway along its length. Two lines of five 20m×20m grids were laid out in the fort field along the line of the rampart, and the survey revealed, rather faintly, the gateway and ditch on the eastern side of the enclosure. Several slight linear anomalies were apparent, but again there was no trace of a second, ‘outer ditch’.

The final array of four 20×20m grids was laid out against the southern face of the field boundary defining the southern edge of fort field. Once again, a single rampart was revealed close to the hedge, and a few oblique linear and spot anomalies were also recorded, but no central gateway, and no trace of a second ‘outer’ rampart.

Survey results and implications

These geophysical surveys have demonstrated that the enclosure at Carvossa was defined by a single rampart and ditch, and that access to the interior



Fig 6 The well-preserved northern bank and ditch at Carvossa. (Photograph: J R Smith.)

was through a single gateway in the centre of the eastern side. All the ditches are reasonably straight and consistent in width, but it was not possible to confirm that the enclosure ditches had the characteristic rounded corners. It was not possible to confirm by survey that the enclosure ditches had the characteristic rounded corners due to physical obstructions and wire fences at these points. The surviving ditch in the north-west corner, however, is clearly rounded.

The shape of Carvossa's enclosure can best be described as trapezoidal, with one pair of parallel sides. The site lies on a broad east-west ridge and the ground slopes gently across the interior, with the east side being approximately 4m lower than the west side. There is no obvious topographical reason why the eastern side should have been constructed at such an angle relative to the rest of the site.

The entrance at the approximate centre of the eastern side, revealed by the 1968–71 excavations, was confirmed by our surveys, but there were no discontinuities in the ditches on the western or southern sides which could be interpreted as gateways or entrances, as would have been expected if this site was a small Roman fort. The rampart on the northern side of the site survives in surprisingly good condition: with its external ditch it is still an impressive feature, with the line of the old Grampound–Probus turnpike road running along the ditch's outer edge. No trace of an entrance is apparent in this side of the earthwork.

It was usual for the Roman Army to decommission forts when the legions moved on, and excavations at both Nanstallon and Calstock have confirmed that these two forts were dismantled, wooden buildings were broken down or burned, and the ramparts were levelled to infill the defensive ditches, rendering the site difficult to re-occupy. The very well preserved and upstanding nature of the northern rampart and bank at Carvossa seems to count against its identification as a Roman military site, on these grounds, although it should be noted that at Restormel the ramparts also seem to have survived sufficiently to have been recorded as 'shadow sites' in low sunlight on twentieth-century aerial photographs.

As a univallate site, the putative fort at Carvossa would seem to have more in common with the univallate fort at Nanstallon than the bivallate forts at Restormel and Calstock. However, simply comparing ramparts may be potentially misleading.

Table 1 Relative sizes of the four sites discussed in the text.

<i>Site Name</i>	<i>Internal dimensions</i>	<i>Internal area</i>
Restormel	60×70m	0.42 ha.
Nanstallon	80×90m	0.72 ha
Calstock	150×150m	2.2 ha
Carvossa	150/160×130m	1.9 ha (approximate)

In terms of size, the ramparts at Carvossa enclose an area significantly more than twice the size of the fort at Nanstallon. At around 2 ha, Carvossa is similar to the fort at Calstock, whilst both Restormel and Nanstallon enclose less than 1 ha (Table 1).

Broadly, though, the comparison reveals two small enclosures of significantly less than 1 ha (Restormel and Nanstallon), and two larger enclosures of approximately 2 ha (Calstock and Carvossa). However, the overall size of an enclosure is likely to reflect the intended function of the site, rather than an indication of its origins.

Douch and Beard's excavations at Carvossa did not record any features which would unmistakably indicate a Roman military phase. The strongly built gateway in the east side could be Iron Age in date, and there is no gateway in the well-preserved northern rampart and ditch, nor any indications of gates through the other two sides as revealed by geophysical survey. No traces have been identified of substantial features such as internal roadways dividing the site into quadrants, nor rectangular structures indicative of administrative buildings or barrack blocks like those excavated at Calstock and Nanstallon, and also visible, though rather faintly, in the geophysical survey at Restormel. Previous geophysical surveys at Carvossa have instead revealed irregular curving ditches in the interior of the site, more characteristic of a phase of 'native' settlement or occupation.

The 2023 survey has clarified the question of the nature of the site's ramparts but has produced no unequivocal evidence to support the proposition that this earthwork was a Roman fort. The absence of entrances in the ramparts on the north, south or west sides of the Carvossa enclosure, and the complete lack of evidence, from earlier geophysical surveys, for the characteristic internal organisation are particularly problematical for the Roman fort hypothesis. The question of the site's origins remains uncertain despite three seasons of

excavation in the 1960s and now three episodes of geophysical survey. The pottery assemblage seems to indicate an ongoing high-status occupation of the enclosure through several centuries of the Romano-British period, but there is still a notable lack of convincing evidence for the presence of the Roman Army at Carvossa.

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