Centre for Archaeology Report 73/2001

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ISSN 1473-9224

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**Summary**

Fort Cumberland is an 18th-century fort built on the shingle spit of Eastney Point on the south-eastern corner of Portsea Island. It is a Scheduled Ancient Monument (Hampshire monument no. 277) and is the home of English Heritage's Centre for Archaeology. It is described in the English Heritage's Visitors' Handbook as 'perhaps the most impressive piece of 18th-century defensive architecture in England'.

The monument has been undergoing a phased programme of consolidation, repair and restoration work. During the works to repair the outer ditch wall to the north-east of the Fort, two of the bomb craters from the aerial bombardment inflicted on the Fort on the 26th of August 1940 were exposed. These were recorded in order to assess their condition prior to consolidation. Also recorded at this time were two of the badly damaged traverses on the covered way.

The following is the report on the findings of the limited excavation and survey undertaken.

**Keywords**

Excavation; Standing Building; Post-medieval

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**Summary**

A phased programme of consolidation and repair work to the outer ditch wall is being undertaken at Fort Cumberland, Hampshire (Scheduled Ancient Monument 277), by Historic Properties Restoration for Historic Properties South East (HPSE).

The work has involved the removal of the scrub vegetation and clearance of the general debris from the site. This has been followed by a full rectified photographic survey of the walls in advance of an evaluation, in consultation with the Inspector of Ancient Monuments (IAM), of the condition and state of repair of the walls prior to a decision being made regarding the most suitable repair or consolidation strategy.

In the north-eastern part of the Fort, the clearance of the vegetation revealed two bomb craters from the Second World War aerial bombardment of August 1940 that had badly damaged the brick walls. One of these was through the ditch counterscarp wall; the other was through the parapet wall of the covered way above. Small-scale excavations were undertaken to evaluate the extent of the damage in these two areas and to inform the decision relating to the treatment of the walls,

In both cases the excavations revealed that the damage caused by the bombs was more extensive than initially thought. The upper parapet wall had been breached for a length of 5m, and below ground the wall was fragmented and the badly damaged brickwork had been blown up to 0.80m out of alignment. The counterscarp wall had been similarly breached, with the brickwork blown away down to the ditch level and with the limestone footings to the wall at ground level distorted by the blast into a curved rather than straight alignment.

This report also briefly details the condition of the two traverses on the north-eastern covered way which were surveyed and recorded during this phase of works. The southern traverse has subsequently been rebuilt. The northern remains in the same condition as at the time of the survey, although a proposal for its stabilisation is being developed.

## 1. Introduction

Removal of vegetation and general clearance of overlying debris during the consolidation works at Fort Cumberland revealed the full extent of the damage of two of the bomb craters dating from the aerial bombardment experienced on the evening of the 26th August 1940. The craters are located to the north-east of the Fort, one causing a breach of the counterscarp wall directly to the north of the apex of the central bastion, the other breaching the parapet wall of the covered way to the north-west of the central bastion (***see figure 2*** for location plan).

Once revealed, the craters were recorded prior to the decision regarding their consolidation and possible reconstruction being taken and works continuing.

During this same phase of works, the covered way traverses on either side of the central steps of the north-east curtain wall were cleared of vegetation in order to assess their condition and survival prior to consolidation work.

## 2. Methodology

Following the removal of the vegetation, hand excavation of the crater infills was undertaken, and records were made following the guidelines published in the English Heritage recording Manual (CfA, 1998).

The resulting partially excavated craters were then recorded photographically and by annotated scaled drawings, and their locations were accurately surveyed. A similar photographic and drawn record was produced for the traverses. The drawings and survey results were added to the digital files of the Fort surveys, the computer package used being AutoCAD r14.

Prior to these works being undertaken a rectified photographic survey of the ditch wall had already been carried out.

## 3. Results

### *3.1 Bomb Crater in Counterscarp Wall*

This bomb crater is located in the counterscarp wall outside the central bastion. A fairly extensive rubbish and debris filled hollow was visible prior to excavation taking place, with the hollow measuring c.8x4x2m. Once the vegetation had been cleared, the extent of the crater could be seen and the nature of the infill established.

At the upper edge of the crater a roughly constructed and makeshift fence had been erected using a variety of timbers and metalwork, but subsequent movement of the soil had caused this to shift and partially fall into the crater. This movement was a cause for concern, and it was decided that excavation to remove the unstable crater fills would be undertaken to reveal the extent of the damage. It could be seen from within the ditch that a large section of the counterscarp wall had been demolished by the blast and subsequent disrepair, as far down as

the Portland limestone foundation course. The Portland blocks had withstood the damage but had collectively been forced into the ditch as the wall line had buckled (***see figure 3***).

The fills removed by excavation included the upper rubbish strewn layer overlying several distinct layers of backfilled gravel. The gravel was very unstable and the section was raked back to the upper edge of the crater for stability.

The crater excavations revealed the method of construction of this section of the counterscarp. The extents of the bomb crater exposed three brick walls running perpendicular to the line of the counterscarp wall. This had the effect of compartmentalising the counterscarp outside the inner wall. The space between the walls had been infilled with beach gravel consisting of water worn pebbles of varying size in a sandy matrix.

The separation of the walls varied slightly, with the distance between the northern and central wall being 3.24m, compared to 3.4m between the southern and central walls. The walls were fairly substantial, up to 1.20m in width, and were constructed of red bricks typical of those used at the time of construction of the defences between 1793 and 1812. The bricks and light grey coloured lime mortar used for these walls are very similar to those used in the counterscarp wall. The southern and northern walls survived to the height of the top of the counterscarp whereas the central wall was badly damaged by the bomb and survived to a height of 0.5m above the limestone foundation level.

These structural buttresses created a compartmentalised form within the counterscarp, with the brickwork and gravel infill containing the damage inflicted by the bomb.

Following the partial excavation of the fills the gravel ballast was landscaped and raked back. The extent of the damage remains visible and is now safe from collapse, with the gravel covering protecting the bomb-damaged brickwork.

The decision to leave the bomb damage open followed the general philosophical approach that has been used to guide the conservation works around the Fort to date – that is that evidence of the bombing is to be left unless it is causing health and safety problems or structural problems to other parts of the monument. In this case there was the additional problem caused by the distortion of the foundations and the fact that any repair or rebuild would have been very difficult without removing most of the historical evidence.

### *3.2 Bomb Crater in Parapet Wall*

This bomb crater is located in the parapet wall on top of the covered way to the north of the central bastion. This is on the boundary between the monument and the land owned by Southern Water.

The breach in the wall caused by the bomb measured c.5m in length (***see figure 4***). It was hoped that this length of wall, being the site boundary and for site security, could be rebuilt and the fence line re-established as part of the restoration works. Prior to the investigation, a concrete fence post with a concrete pad from the chain-link fence had been removed from the crater.

A controlled excavation of the western part of the crater was undertaken to establish the nature and extent of the damage to the wall below the level of the covered way. In order to rebuild the wall, it was important to locate firm footings and it was hoped that the brickwork from the wall would provide these.

The excavation was c.4.5x2.5m in size along the length of the section of damaged walling. The maximum depth excavated was 0.60m below the covered way ground level. The material removed consisted of loose gravel with many red brick fragments as inclusions. The excavation revealed that the brickwork of the wall had been very badly damaged and had broken into sections. The upper sections had been blasted over a metre through the covered way make up material, with the lower less-damaged sections buckling badly and being forced up to 0.8m out of alignment. The brick sections had also slumped towards the centre of the area damaged by the bomb.

It was decided that the brickwork was too badly damaged and had moved too far out of line to enable the wall to be rebuilt, and so the excavation was stopped and the archaeology recorded. The chain-link fence line was re-established using clay packing around a concrete post, and the crater was backfilled to the level of the covered way.

### *3.3 North Traverse*

The traverses were constructed to create obstructions to enemy fire along the exposed lengths of the covered way and thus provide cover for troops, specifically providing cover for the Place of Arms against enfilading fire.

The traverses were constructed with brick retaining walls in English Bond, capped with a course of bull headers, and infilled with earth. Three sides were of brick with the fourth side, away from the Place of Arms, being an earthen slope.

Following the clearance of the vegetation, the northern of the two traverses on the counterscarp was seen to be in a very poor state of repair. A path had been established along the top of the covered way, and this cut through the middle of the traverse. Rubbish had subsequently been used as infill against the traverse brickwork.

The remains of the traverse were drawn and photographed (***see figure 5***), and the location was accurately surveyed.

No further work has been undertaken on the repair or consolidation of this traverse, although the long-term intention is to re-construct the original form. The timing for this is dependent on the stabilisation of the brickwork on the ditch side for which proposals have been worked up but are yet to be implemented.

### *3.4 South Traverse*

Short upstanding lengths of brickwork were all that survived of the southern traverse. The pathway along the top of the covered way cut through the traverse, and most of the earth infill had been removed. The remains of the traverse were recorded, photographed (***see figure 6***) and surveyed.

Removal of the vegetation and limited excavation revealed the footings of the dismantled lengths of walls, and this evidence was used in conjunction with a study of the more complete examples elsewhere on site to enable an accurate reconstruction of the traverse to be undertaken (***see figure 7***).

## 4. Conclusions

This small piece of work revealed important evidence for the construction methods of the late 18th- and early 19th-century fortification works. This was the first opportunity during the recent phase of consolidation works to see the techniques employed in the construction of the counterscarp retaining wall. This revealed a fairly complex structure with a series of buried brick walls creating buttresses perpendicular to the counterscarp wall.

The partial excavation and survey of the traverses have enabled the accurate reconstruction of the southern traverse to be undertaken (***see figure 7***) and the pre-consolidation state of the traverses to be recorded. This work has been added to the digital record that has been compiled of Fort Cumberland and will be available for future reference and use.


## Acknowledgements

Thanks to Patrick O'Hara of English Heritage's Centre for Archaeology who worked on the bomb crater excavations, and to Brian Kerr and Judith Roebuck of English Heritage for comments on the text. Thanks also to Vincent Griffin for his work on the illustrations.


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*Figure 3 Photograph showing the breach in the counterscarp wall and the Portland limestone foundations (formerly a straight wall line) 2m scale*

*Figure 4 Photograph showing the bomb damage to the parapet wall of the covered way*

Figure 2 Plan showing the location of the bomb craters and the traverses in the north eastern corner of Fort Cumberland

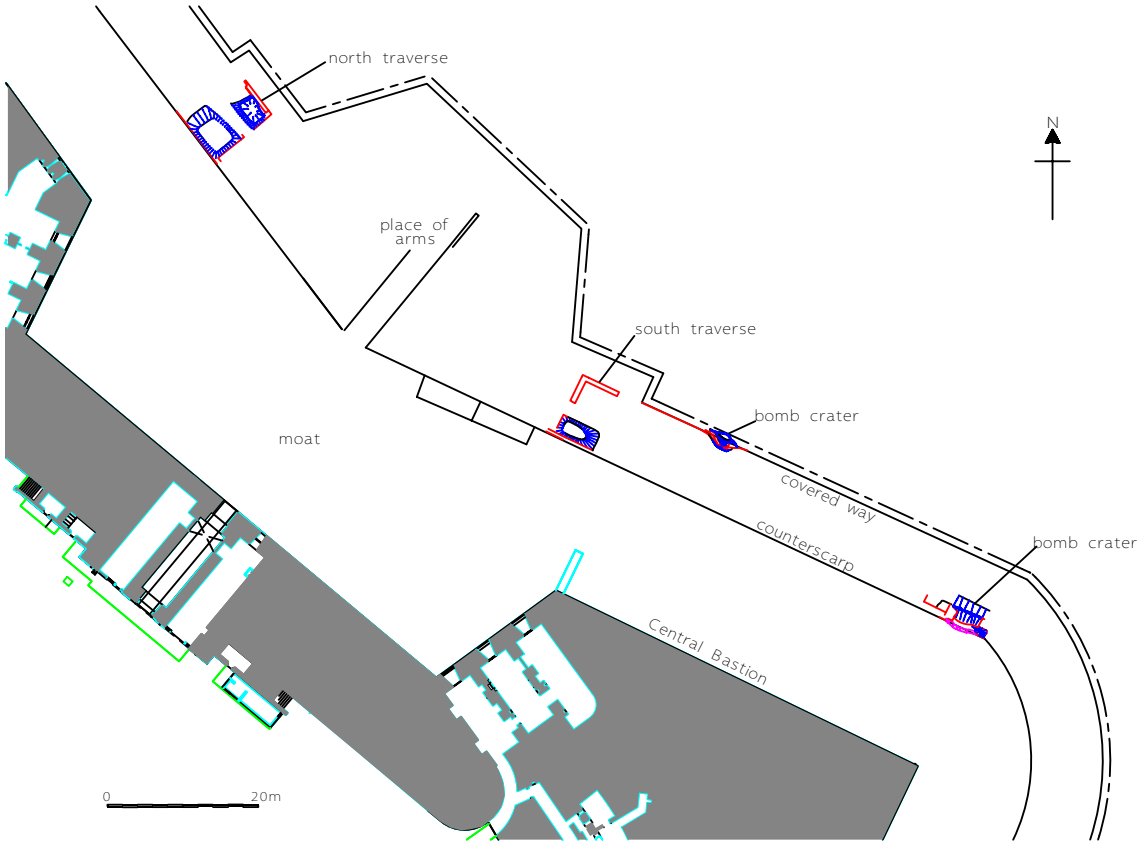

*Figure 5*
*Photograph showing the condition of North Traverse following removal of overlying debris and vegetation (1m scale)*

*Figure 6*
*Photograph showing the condition of the South Traverse prior to restoration Work (1m scale)*

*Figure 7*
*Photograph showing the South Traverse following restoration work*