

**K1195 Condition Report**

**First Conservation Started:** 15/4/2012  
**First Conservation Finished:** 22/5/2012  
**Second Conservation Started:** 14/01/2013  
**Second Conservation Finished:** 14/01/2013

**First Conservator:** Brian Castriota,  
**Second Conservator:** Ciarán Lavelle  
**Time Taken:** 38 hours, 3 hours  
Including digital photography, report, conservation and packing.

**Dimensions:** (L) 45mm (H) 19.5mm (W) 15.5mm

**Weight before first conservation treatment:** 19.74 g  
**Weight after first conservation treatment:** 18.90 g

**Weight before second conservation treatment:** 18.90 g  
**Weight after second conservation treatment:** 15.66 g

**Catalogue number:** 47

**Digital photography:**

Taken with a Nikon Coolpix 4500 digital camera, under daylight or bulbs and Meiji Techno RZ Stereo microscope with an Infinity 1 camera (with analyses capture software) and fibre optic lights, 7-75x magnification, and. Taken before, during and after.

**Annotation on any of the storage bags or boxes:**

On excavation bag:

SSH09            1971 (1001) K13 <309>  
4/8/09            1195 AA3Z CE5A

**Description:** Visual and microscopic examination using Meiji stereo microscope 7-75x magnification.

The object is a gold pommel cap from a seax or sword, with geometric garnet cloisonné inlay, wire filigree, and a single gold rivet. Cloisonné pattern is symmetrical and repeated on both faces and shoulders. Stepped and arced cell walls create a quadrisectioned quatrefoil pattern across the surface of the pommel faces, adapted to fit the shape of the pommel. The field of cloisonné on both pommel faces is bordered by alternating pairs of small, rectangular inlaid garnets separated by lidded cells. Step and arc cell pattern is repeated in the cloisonné inlay on the shoulders. The garnets are scarlet in colour and are backed by gold foils stamped with a waffle-like pattern, bumps facing outwards. The pommel cap is flanked at either end by a double rivet housing with beaded and twisted wire filigree decoration between the rivet holes. A

single bent gold rivet is preserved in situ and mobile in one of the rivet holes on the twisted end of the pommel cap.

**Associated Objects:** K1155 (collar) and K850 (collar). Similar cloisonné pattern, cell size, and rubbed down cell walls.

**Pre-Conservation Condition:** Visual and microscopic examination conducted using a Meiji stereo microscope, 7-75x magnification.

**First Conservation Treatment:**

The exterior surface of the pommel cap is 30-40% covered in compact, sandy soil; the interior of the pommel cap is entirely filled with soil. Fluffy white mould is visible on the surface of the soil in a number of areas.

The pommel cap is twisted and bent resulting in a vertical, inward fold on one face (side A), and an outward bulge on the opposite face (side B) with a split in the cell framework that runs diagonally through the left side of the pommel face, extending through the adjacent shoulder cloisonné (side D). There are major disruptions to the cells in the bent areas; cell walls and the pommel frame are generally torn along solder joints, and garnet edges and foils are exposed in these areas. Soil is adhered in these damaged areas as well as areas where garnets have sunken in their cells. Some garnets and foils may be missing, though it is not possible to tell due to soil coverage.

In unbent areas, some of the garnets are flush with the surface while others are sunken or tilted in their cells. One garnet near the top of pommel face B is broken. Another garnet on the left side of pommel face A is broken and appears to have been repaired with a thinner inserted gold cell wall. Visible garnets are highly translucent, scarlet in colour and in good condition except where otherwise noted.

Visible gold appears to be in good condition. There are a number of superficial scratches on the surface of the gold. Deeper, possibly post-depositional scrapes/scratches are visible on the right shoulder of pommel face A. A few slight dents and impressions are visible on the top of the pommel cap, and a small amount of light orange tarnish is preserved in these areas. A darker, grey tarnish is visible on the edges of the pommel between the panels.

A single rivet is preserved in a rivet hole on the twisted end of the pommel cap (side D). It is 2.2 cm in length and bent into an L-shape. It is freely mobile in its hole but it cannot be removed due to its distortion. The join where the rivet housing meets the right side of side A is split open and filled with soil. Traces of beaded wire are visible around the tops of the rivet holes, but are mostly obscured by the soil adhered around the top and sides of the rivet housings.

Soil removal is necessary to fully assess condition and improve the legibility of the object.

## **Second Conservation Treatment – C.L:**

The exterior has been conserved by the interior has been let in situ, see above for exterior conservation condition report. The Interior filled with loose and compact soil, as 3 of the 4 rivet holes, one retains the rivet.

**Treatment:** Carried out using a Meiji stereo microscope

**Purpose:** Display/Analysis/Study

**Aim:** Partial cleaning

**Materials Used:** Soft natural/synthetic brushes, cotton swab, toothpick stick, barberry thorn in pin vice, water on garnets, water/IMS on metals.

The granular soil on exterior surfaces was mechanically removed or reduced using a fine barberry thorn tip secured in a pin vice. IMS (ethanol) and filtered water were used to soften the soil to facilitate removal. Loose particles of soil were further reduced with a soft paint brush and/or cotton swab moistened with IMS and water. Additional soil was removed from the bottom and interior of the pommel cap to reveal the extent and thickness of the pommel walls, and the undersides of the rivet housings.

The pommel contains 172 cells and 171 garnets. Sides A and B are also bordered by 16 lidded cells on each side.

Side A contains 75 cells and 75 garnets. Two small garnets and their gold backing foils were loose in their cells and were removed and transferred to sample vials (samples no. 6 and 7). All bedding material in these cells had been leached out. 22 garnets on side A are tilted and/or sunken in their cells; none required consolidation or securing. The tops of the cell walls are heavily burnished.

Side B contains 73 cells and 72 garnets; the third garnet in from the right on the bottom left side of the field decoration was micro-excavated and found to be empty. 4 garnets are chipped, broken or cracked. 14 garnets on side B are tilted and/or sunken in their cells; 3 of these were loose and were secured with a soft bead of HMG brand Paraloid B72 (ethyl methacrylate copolymer) from the tube, tacked between the garnet plate and the cell wall with a barberry thorn and acetone. Two sheet-like fragments from the surface of the furthest left garnet on side B were removed from the soil in the cell and placed in a sample vial (sample no. 9). The tops of the cell walls are heavily burnished.

Side C contains 12 cells and 12 garnets. The upper most garnet on side C has a small chip. 4 of the garnets are tilted and/or sunken in their cells; 3 of these were loose and were secured with a soft bead of HMG brand Paraloid B72 from the tube, tacked between the garnet plate and the cell wall with a barberry thorn and acetone.

Side D contains 12 cells and 12 garnets. 3 garnets are cracked. 5 of the garnets are tilted and/or sunken in their cells; one of these was loose and was secured with a soft bead of HMG brand Paraloid B72 from the tube, tacked between the garnet plate and the cell wall with a barberry thorn and acetone.

A total of three lidded cells (one on side A and two on side B) were missing their gold lids. Soil was left in these cells so as not to disrupt the contrasting pattern effect of the cloisonné border.

Orange accretions/powder - possibly residue from the bedding paste - was identified in a number of cells; a sample was taken from the soil on side B (sample no. 11).

The paper K number was adhered to the bottom with 10% Paraloid B72 w/v in acetone, applied with a fine paint brush.

A new storage box padded with white polyethylene foam was constructed to house the object.

**Post-Conservation Condition/Findings:**

**First Conservation Treatment:**

The pommel is composed of four separate panels of garnet cloisonné, 1.6 mm thick, soldered within a framework made from worked sheet gold. The two rivet housings are hollow, made from cut and hammered sheet gold, and are soldered to either end of the pommel. Visual analysis of the solder joints do not reveal any traces of solder alloys, suggesting the object was soldered at all stages using the process of eutectic soldering.

The top of the pommel seems to have been constructed from a rectangular sheet of gold, hammered into a dome, and soldered to the exterior walls of the four cloisonné panels. Additional strips were soldered onto the pommel shoulder edges to connect the remaining lengths of the cloisonné panels together as indicated by a split solder joint between sides D and B, and other corresponding indentations on the other shoulder edges.

Removal of soil from the tops of the rivet housings revealed beaded wire decoration around the rims of the rivet holes. Between the rivet holes, removal of soil also revealed two short strips of twisted wire decoration with opposing twist directions, bordered on each side by a slightly finer, beaded wire strip. The wire decoration is more worn along the top edges of the rivet housings. Parallel, filing marks were identified on the undersides of the rivet housings. A hard white accretion was also identified on the underside of the rivet housing on side C.

A small, thin cell wall appears to have been inserted as a repair between the break edges of a garnet plate on side A.

The tops of the cell walls of the cloisonné on sides A and B are more highly burnished than the cell walls on the pommel shoulders, possibly corresponding to wear from use; exposed cell walls reveal that the walls are approximately a quarter of a millimetre thick, while the tops have been burnished down to over half a millimetre in some areas. The top edges of the rivet housings are heavily worn while the beaded and twisted wire decoration in the recessed areas between the rivet holes was protected from wear; a grey-black surface layer is visible where the detail of the filigree is best preserved. This may be historic tarnish, or an oxidation layer from the manufacturing process that was never removed. Similar grey-black tarnish was seen on interior cell

walls. Soil removed from the underside of the pommel also revealed orange tarnish on the interior surface of the pommel cap. The differential preservation of the tarnish on the interior and recessed areas suggests it may be pre-depositional; these surfaces would have been protected from wear when affixed to the hilt of a seax or sword. The wear suggests the object was in use for some time prior to burial and may have been transferred between different sword compositions.

The twisted distortion of the pommel cap as well as the horizontal scrape/impression mark along the bottom right edge of side A suggests a knife blade or other flat tool may have been used to pry the pommel from its hilt prior to burial, consistent with damage seen on other objects from the Hoard.

#### **Second Conservation Treatment – C.L.:**

The soil was removed to the level of a grey/white clay layer which inhabits almost the entire bottom of the object. This clay layer was sampled and as with the soil, was placed in sample vials and stored with the object and the rest was left in situ for future sampling and research as it may be evidence of an earlier period of burial for the hoard.

The interior has evidence of a join along both sides in the center, the bottom being obscured by the in situ clay layer.

In the corners on the damaged side of the object two small holes are visible, in which can be seen hollow areas suggesting the object is hollow so as to allow decorative garnet inserts on the exterior. A small tear on the surface of the interior can be seen at the clay level, revealing a possible hollow area underneath also.

#### **Key Features:**

Geometric garnet cloisonné decoration with textured gold backing foils.

Alternating garnet inlay and lidded cell border on pommel faces.

Beaded and twisted wire filigree on rivet housings.

Single attached rivet.

Historic repair to broken garnet.

Pre-depositional mark related to tool used to pry pommel cap off hilt.

Possibly forms suite with K1155 and K850 (collars).

#### **Analysis Undertaken:**

XRF analysis of the object was performed. See document 'K1195 XRF Report'.

#### **Samples:**

1. soil - pommel face, side A
2. soil - pommel face, side B **ADDED TO SAMPLE 1**
3. soil - shoulder, side C **ADDED TO SAMPLE 1**
4. soil - shoulder, side D **ADDED TO SAMPLE 1**
5. soil - underside/interior
6. garnet and foil from side A, bottom left
7. garnet and foil from side A, border, top left
8. gold foil fragment from soil, side A, furthest right cell
9. two sheet-like garnet fragments, side B, furthest right garnet **DISPOSED**
10. gold foil fragment, side B cell left of central left mushroom cell **DISPOSED**

11. orange paste, side B, top left cell third over from top centre **DISPOSED**
12. plant matter in soil, side C, shoulder **DISPOSED**
13. mould from soil, side C, shoulder **DISPOSED**
14. plant matter from soil, side A **DISPOSED**
15. organic material from soil inside pommel
16. Interior Soil 1
17. Interior Soil 2
18. Grey/White Clay

**References:**

Coatsworth, Elizabeth, and Michael Pinder. *The Art of the Anglo-Saxon Goldsmith: Fine Metalwork in Anglo-Saxon England: Its Practice and Practitioners*. Woodbridge (GB): Boydell Press, 2002.

Fischer, Svante and Jean Soulat. "The Typochronology of Sword Pommels from the Staffordshire Hoard." Postprints from the Staffordshire Hoard Symposium, The British Museum, March 2010.

Leahy, Kevin. *Anglo-Saxon Crafts*. Stroud, Gloucestershire: Tempus, 2003.