



**Contextualising Metal-Detected
Discoveries:
Staffordshire Anglo-Saxon Hoard**

(Project 5892)

Stage 2 Project Design

**Version 4
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Appendix 4: BM Conservation Strand. Assessment Report

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1 Introduction

The role of the BM conservation strand is identified in the original PD⁷⁹ at **14.2v** and described fully at **15.7**. Completion of National Geographic funded work on materials analysis and subsequent enabling of conservation for various object types was undertaken prior to the commencement of work on the foils. Remaining work on sword fittings and other items from the hoard submitted to the BM with their scientific queries was rolled together with the main EH funded programme⁸⁰ and all conservation was carried out as defined there. Items identified by BMT as needing analytical support included silver fitting K516 and parts of the crouching/kneeling warrior frieze (DS7) and its associated silver retaining tray. After analysis work to establish the materials used as fixatives for the tray⁸¹, adhesive or consolidant could be used on them in their reconstruction. Following identification of the wood from the silver fitting K516⁸², further silver fragments were added to it from metal fragments submitted as part of the foils project.

2 Approaches/methodology

Following an audit of the 350 K numbers delivered to the BM, metal fragments were initially sorted into silver-gilt reeded strip, silver and silver-gilt die-impressed sheets and other categories. Using the provisional iconographic sheet sequences as identified and numbered by D. Symons of BMT (see **3.2** here), recognisable fragments were sorted into groups. X-radiography of any fragments still embedded in soil was carried out for recognition purposes and examples of frieze types X-radiographed to view any technical differences which might be discernable by using this approach.

This was followed by cleaning and removal of all remaining soil from the material submitted to the BM: all soil was kept and identified by K number. Dissolution of soil accretions was enabled via immersion or application of solvent (industrial methylated spirit) or distilled water. The original packing incorporated multiple K numbers in one box so repacking was carried out to aid flexibility and efficiency in the sorting phase, first to separate out K numbers by packing individually and then to group by different frieze types within K numbers or by width or diagnostic features within the reeded strip. This stage was refined by the addition of previously unrecognised groupings/subgroupings of die-impressed sheet types and the separation of miscellaneous material and broken sword fittings from the targeted groups of frieze and sheet. Several hundred joins were then made, both between and across K numbers and were subsequently recorded by frieze type or strip width in an Excel spreadsheet now available on the secure database as an archive file. Length measurements of join sequences from strips and silver tray DS 7 and the serpentine frieze DS 9 are also included in this table. The results are

⁷⁹ Cool 2013 – PD 2013.

⁸⁰ PD 2013 Section 15.8i, 15.5.

⁸¹ Stacey 2014.

⁸² Cartwright 2013b, 8.

discussed in the following section. Reconstruction of plain silver-gilt pieces was progressed, to assess their level of curvature and function.

Joins were made with nitrocellulose adhesive and join sequences requiring support, backed with nylon gossamer tissue. Where necessary fragments were mounted on plastic board interleaved with nylon gossamer and lightly adhered to the substrate at the edges.

3 State of the work in January 2014

3.1 Introduction

The PD always envisioned that the work on the foils would be an ongoing task⁸³, and would probably not be complete by the time the fragments were returned from the BM at the end of the fixed term appointment of the conservator who would deal with them. The BM work was completed at the end of January 2014 when all material was returned to Birmingham for the grouping exercise. The next two sections detail the work that has been achieved on the foils and the fluted strips by then.

3.2 The foils

When the foils arrived at the BM, 11 different patterns had been identified by Dave Symons the BMT curator. These were numbered DS 1-11 as follows:-

- Frieze DS 1 Larger size warriors moving to left.
- Frieze DS 2 Larger size warriors moving to right.
- Frieze DS 3 Smaller size warriors moving to left.
- Frieze DS 4 Smaller size warriors moving to right.
- Frieze DS 5 Eagle crested warriors moving to left (possibly the same as 3).
- Frieze DS 6 Eagle crested warriors moving to right (possibly the same as 4).
- Frieze DS 7 Running, kneeling warriors (also called running man or crouching warrior).
- Frieze DS 8 Horseman riding down warrior.
- Frieze DS 9 “Beaked” quadrupeds (also called serpentine, zoomorphic).
- Frieze DS 10 Interlace panels (silver, non-linear).
- Frieze DS 11 Facing moustached heads.

Frieze DS 7 was directly associated with fragments of a silver tray and the organic material within the tray retained the imprint of the sheet. This was identified as beeswax⁸⁴. Patterns DS 1-7 and DS 9-11 were linear friezes but DS 8 is better described as a panel.

During the work in the BM the author and Dugyu Camurcuoglu, who was the fixed term conservator appointed to work on the sheets, were able to identify additional patterns. Atypical warriors possibly associated with the panel DS 8 were assigned to DS 8/BM 8a and DS 8/BM 8b. Four new frieze types have been added, currently identified as DS/BM 12+.

⁸³ PD 2013 Section 15.7ii.

⁸⁴ Stacey 2014.

The amount of joined material is summarised by frieze type in Table 4.1 below which also includes a quantification for the silver tray associated with frieze DS 7. A division has been made between those where the joins are within a K number and those where multiple K numbers have contributed to the joined element. The multiple K number category includes joined pieces where between two and twelve K numbers have contributed. It has not been uncommon for fragments identified by the same K number to have contributed to more than one frieze type.

<i>Frieze description</i>	<i>Type</i>	<i>No. joined incidences</i>		<i>Total</i>
		<i>Within K no.</i>	<i>Across K no.</i>	
Warriors right	DS 2, 4, 6.	5	10	15
Warriors left	DS 1, 3, 5.	2	10	12
Warriors		8	2	10
Running warrior	DS 7	7	10	17
Horseman	DS 8	3	1	4
Atypical warrior	DS 8 BM 8a	2	1	3
Warrior Caenby type	DS 8 BM 8b	3	-	3
Serpentine beaked	DS 9	11	32	33
Gripping beast	DS 10	1	2	3
Male heads	DS 11	-	1	1
Knotwork	DS/BM 12+	-	1	1
Gripping beast panel	DS/BM 12+	-	1	1
Different feet	DS/BM 12+	+ ⁽¹⁾	-	-
Back leg	DS/BM 12+	-	1	1
Silver herringbone		-	1	1
<i>Total</i>		41	73	114
Silver tray for 7		-	7	7

Table 4.1: Summary of the joins between and within K numbers in the die-impressed sheet (See text for details. Note ⁽¹⁾ identified but no joins made).

3.3 The reeded strips

The reeded strips have been sorted by width and Table 4.2 quantifies the joined ones in the same way as has been done for the foils. The joins made across K numbers range from two to four different numbers apart from two of the 14mm wide fragments which included fragments from eight and fourteen different K numbers.

<i>Width (mm)</i>	<i>No. joined incidences</i>		<i>Total</i>
	<i>Within K no.</i>	<i>Across K no.</i>	
5	3	1	4
8	20	2	22
11	3	1	4
14	-	4	4
<i>Total</i>	26	8	34

Table 4.2 : Summary of the joins between and within K numbers made in the reeded strips (See text for details).

The largest proportion were the 8mm. fragments. The 5mm wide strips were mainly straight with regular rivet holes. For the 14mm wide strips it was possible to join two long curved lengths with rivet holes set in a zig-zag pattern on alternative sides. Some narrower pieces with deliberate curvature and rivet holes have also been found.

It may be noted that a few examples of fluted 'U'-shaped clips were found, reconstructed from small fragments. These are a type of fitting that can be used on items such as helmets and vessels.

4 Future work

The greatly increased corpus of joined fragments means that there is considerable potential for a range of additional work in Stage 2. This will have to include assigning additional K numbers to the new groupings to ensure they have unique identifying numbers. As noted in 3.2 and 3.3 here, the joins cross K numbers and frequently the same K number contributes to different pieces. This work will need to be prioritised early in Stage 2.

Now that larger expanses of scenes are available it will be possible to relate the die-impressed sheets to other better preserved examples from elsewhere. A good example of this are the joined fragments assigned to DS 8 / BM 8b which have enabled comparison to be made to the fragment from the Caenby barrow in Lincolnshire⁸⁵. There is also the potential for exploring how many versions of the same scene and the number of dies that are present through accurate measurement.

For the die-impressed sheets a start has been made in measuring the lengths of the strips reconstructed and calculating how long they might have been. In two cases (DS 7 and DS 9) they are approximately as long as would be needed to encircle a head around the temples. Extending this work clearly has the potential to help calculate quite how many items these foils may have decorated.

For the fluted strips it may be noted that the tighter the curve of the item to which the strip is attached the more rivets holes are needed, the joins have allowed the spacing of the holes to be calculated. This provides the potential in Stage 2 to explore what the strips were used on more closely.

During the grouping exercise in February 2014 additional pieces relevant to the work reported on here were recognised that had not been part of the material at the BM. These will need to be reintegrated with the rest of the material and joins tested.

Completion of friezes to establish the footprint of at least one of each of the diagnostic types, where this proves possible, would be valuable. There is also potential for a more complete reconstruction of the broken and disassembled silver tray for DS7 which may also relate to helmet parts. At the grouping exercise, for example, additional joins were found.

⁸⁵ Bruce Mitford 1978, 207, fig. 153.