

Ancient Monuments Laboratory
Report 68/1999

SEVENTEENTH CENTURY
TECHNOLOGICAL DEBRIS FROM THE
ROUND TOWER, WINDSOR CASTLE

R Doonan

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Summary

An assemblage of technological debris from the Windsor Castle was examined and assessed for research potential. The assemblage contained evidence for copper and lead metallurgy. The lead working debris was derived from building work. No further work was recommended. It is recommended that further work is carried out on the copper alloy finds.

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Seventeenth century technological debris from the Round Tower, Windsor Castle.

Roger C.P. Doonan

Introduction.

Archaeological investigations conducted at Windsor Castle's Round Tower have produced limited evidence of metalworking. Initially, it was suspected that this could well be the site of an experimental 'laboratory' used by Charles II's cousin, Prince Rupert of the Rhine, to investigate gun metal compositions. However, in light of stratigraphic evidence it is probable that this debris comes from a pre-1660AD context before Rupert arrived.

Technological debris

Nine boxes of debris were submitted for assessment (see Table One).

Box No	Description of Contents	Comments
2064	Burnt material(mixed coke/coal/charcoal (2983g): Various burnt stones	
2031	'Fired Clay' Mixed Mortar and clay	12 bags
1180	'Fired Clay' (heavily reduced) Possible hearth tuyere (unused)(Fig 1&2)	2 bags 1 box
144	'Fired clay' and mortar (3300g)	7 bags 2 boxes
203	Various pieces of corroded iron(~1200g)	
14	Copper and lead spillages (4529g)	~60 bags
206	lead spillages/accidental burnt lead (2400g)	31 bags
207	identified as slag/hammerscale but in fact mortar and/or corroded iron (260g)	27 bags
2057	slag (140g)	11 bags

One large fragment of crucible was found (2055/4390) with copper alloy adhering to it. Analysis using XRF (X-ray fluorescence) spectrometry showed the alloy to be leaded gun-metal with a small amount of antimony. It could be that this was the alloy

melted within the crucible or that it was reused several times for melting a variety of alloys.

Recommended work

It is recommended that no further work is conducted on the majority of this material. The majority of boxes contain burnt clay and mortar. None of the clay survives in recognisable forms with the exception of the possible tuyere which may have been intended for incorporation in a metallurgical hearth. It is unusual in that it was never used. However Boxes 14 and 2057 contain numerous pieces of copper alloy spillages which would benefit from identification. It is recommended that limited XRF analysis is conducted on a sample from these boxes.

The estimated time requirement for this work is shown below;

Qualitative XRF analysis of c25-30 copper alloy/slag samples
(including interpretation)

2 days

Writing report

2 days

Figures



Figure 1. An unused tuyere (?) From the Round Tower.



Figure 2. The Tuyere showing central bore.