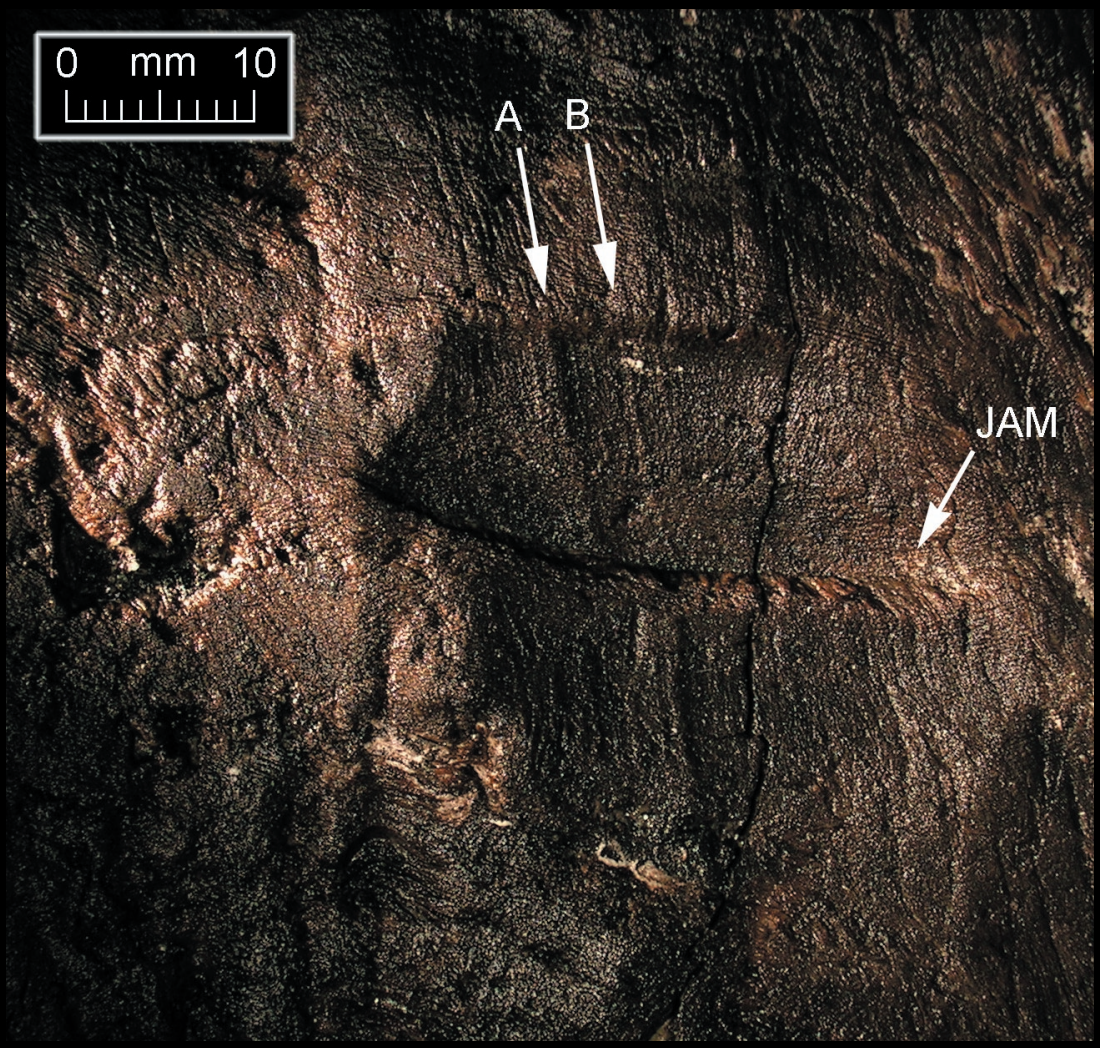
Toolmarks on the Carpow Logboat Transom

Report Produced for the
Perth & Kinross Heritage Trust



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Carpow Logboat – Preliminary Report

Produced for David Strachan[1]

By Rob Sands[2]

Introduction

This report examines the transom of the Carpow logboat, discovered in 2001 partially buried in inter-tidal mud flats at Carpow Bank on the Tay estuary. The boat was lifted July and August 2006 and is now housed in the National Museum of Scotland, Edinburgh. Examination was conducted in the Museum of Scotland, Granton offices, on Tuesday 21st August 2007 at the request of David Strachan (Perth & Kinross Heritage Trust), and with the help of Dr Theo Skinner (NMS).

General characterisation

The transom is a substantial piece of tangentially converted oak being 850mm wide, 600mm deep and 75mm at its thickest part. It is convex on one side and flatter on the other. The convex side retains a completely faceted surface showing a series of short relatively narrow marks of varying preservation.

Figure 1: Side view of the Carpow transom showing tangential conversion

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Characterisation of the tool marks

The entire inner face of the transom has tool marks present, which vary in preservation from good to poor.

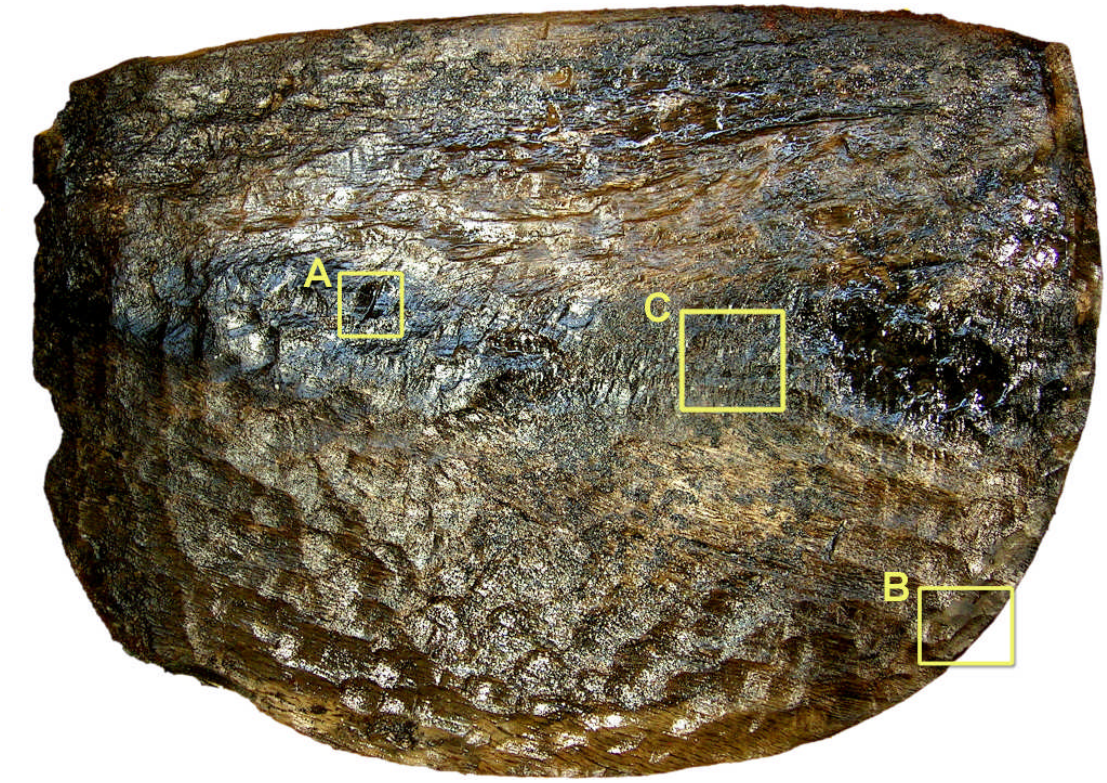

Figure 2: The faceted transom surface showing positions of detailed photographs

No facet has a complete set of facet features (Sands, 1997). The registrations of the sides of the blade used are non-existent or at least ephemeral. In a limited number of cases there are jam features, where the strike has been unsuccessful and the blade has had to be removed. However, in all cases the jam feature is small and partial. The lack of these features makes exact reconstruction of the blade edge impossible. Despite not being able to make exact blade reconstructions some approximate suggestions can be made (fig. 3).

Figure 3: Tentative blade shape reconstruction[3]

The widest observable facet is 53mm and general observations suggest that this could be close to the full size of the blade used; the longest continual single facet is around 58mm. The facets are also dished in cross section, which results in the

[3] This reconstruction is genuinely tentative, the curve indicated by the dark line is reasonably good, the right hand registration of the blade side is reasonable but not 100% definite, the left hand side is more ephemeral.

overall impression of the transom surface as scooped or pockmarked. The deepest facet represented being approximately 3mm from the horizontal. The scooped nature of the faceted surface is characteristic of the use of a Bronze Age tool and the presence of the neat jam feature combined with the facet length indicates a metal edge (O'Sullivan, 1996, 293, Sands, 1997). There is no surviving evidence, or any reason to assume, that more than one tool produced at least the bulk of the facets observed. If this tool was close to 53mm or slightly larger this fits well with average size of Late Bronze Age finds from Scotland and Northern Britain (fig. 4). It also fits well with other surviving marks of a similar date (e.g. Nayling and Caseldine, 177-188 and fig. 101).

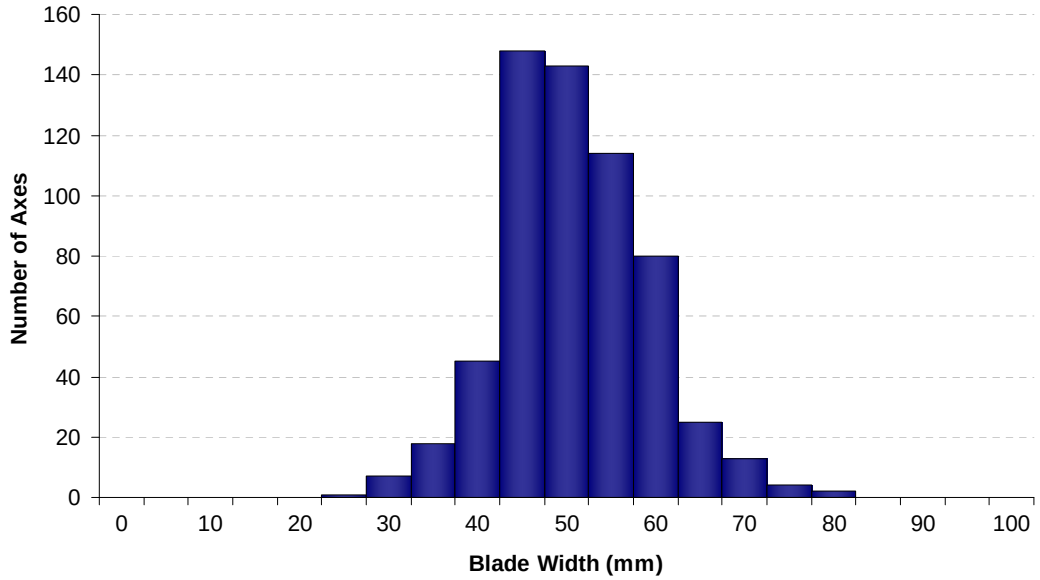

Figure 4: Frequency distribution of Late Bronze Age axe widths based on known axe finds from Scotland and Northern Britain - data derived from (Schmidt and Burgess, 1981)

Without full facet features, especially jam registration, direction of cut can be difficult to determine and figure 5 is intended only to give a general sense of possibilities. Although the general flow of working in any given instance is probably correct, the direction of working might be reversed. The parallel nature of some facet groups might suggest that the tool used was mounted as an adze but this needs some further experimentation. In the Bronze Age it is likely that at least some blades could be used in both ways depending on the manner of hafting. The use of bronze tools hafted in different ways is also suggested on timbers from the Dover Bronze Age Boat (Goodburn, 2004, 129).

Figure 5: General directions of strike. Grey arrows are approximate, yellow arrow based on multiple facet features

On rare occasions tool 'signatures' survive, in figure 6 labels A and B mark two ridges, which are the product of damage in the tool edge. Small indentations in the blade edge cause these ridges and the resultant pattern of ridges is unique to the tool that produced them. In addition to the more prominent ridges shown in figure 3 there are other smaller less far less distinct ridges also apparent but are not clearly visible in the photograph. However, such signature traces were only positively observed in two locations. The survival shown in figure 5 is probably a by-product of slightly deeper cut, which resulted in the tool jamming into the wood surface this left a proportion of the facet at a lower level than the surrounding wood, effectively protecting it from abrasion. Similarly, the slightly better survival of delicate detail at the edges of the transom are probably the result the piece being protected within the transom groove (fig. 7).

Signatures can be extremely useful in determining when the same tool has been used. This can be particularly important when tool marks are found on more than item or on different elements in a structure, allowing those items or elements to be associated through the tool that was used to work them. Because tools get re-sharpened, exact matches are also likely to represent almost exactly the same time of working. Unfortunately, the surviving signatures on the Carpow transom are too small to make positive matches and as the only part of the boat that seems to have decent mark survival is the transom they have limited immediate value other than to indicate the general level of preservation.

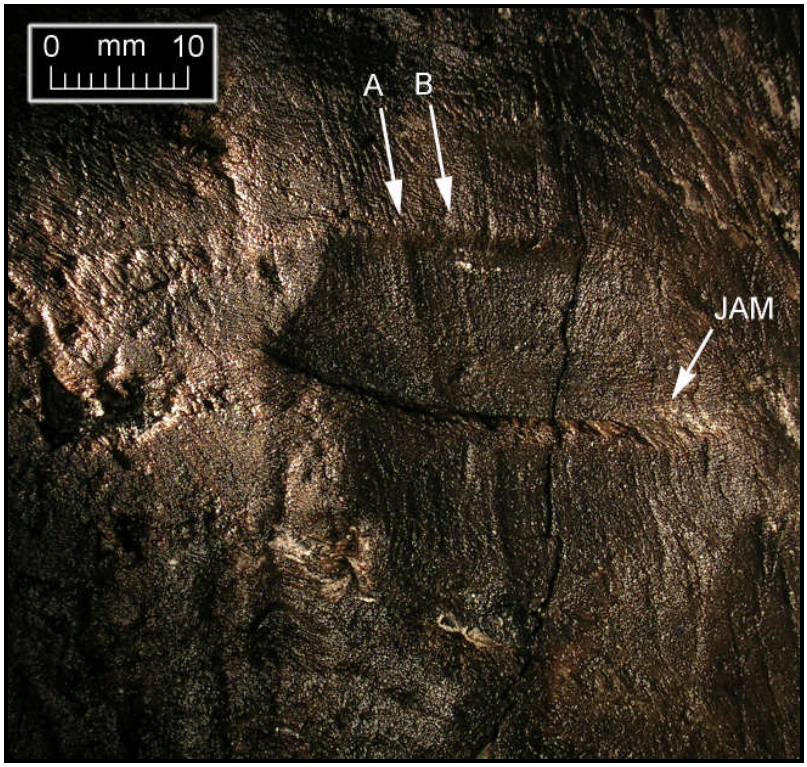

Figure 6 Photograph area A

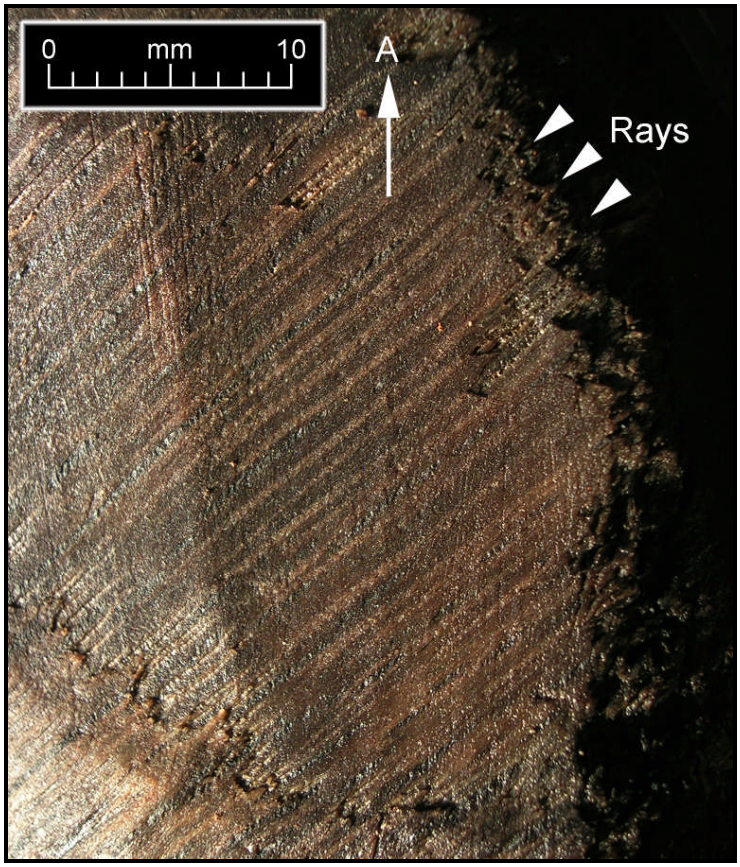

Figure 7: Photograph area B – rays are viewed end on – see also figure 1.

Figure 8: Area B in context

In some areas the woodworker clearly had more difficulty in cutting the surface. Toward the centre of the concave side of the transom a series of shorter less distinct facets are present, demonstrating numerous small cuts, this part of the wood surface has a generally more 'confused' grain pattern an was probably somewhat harder to work (fig. 9).

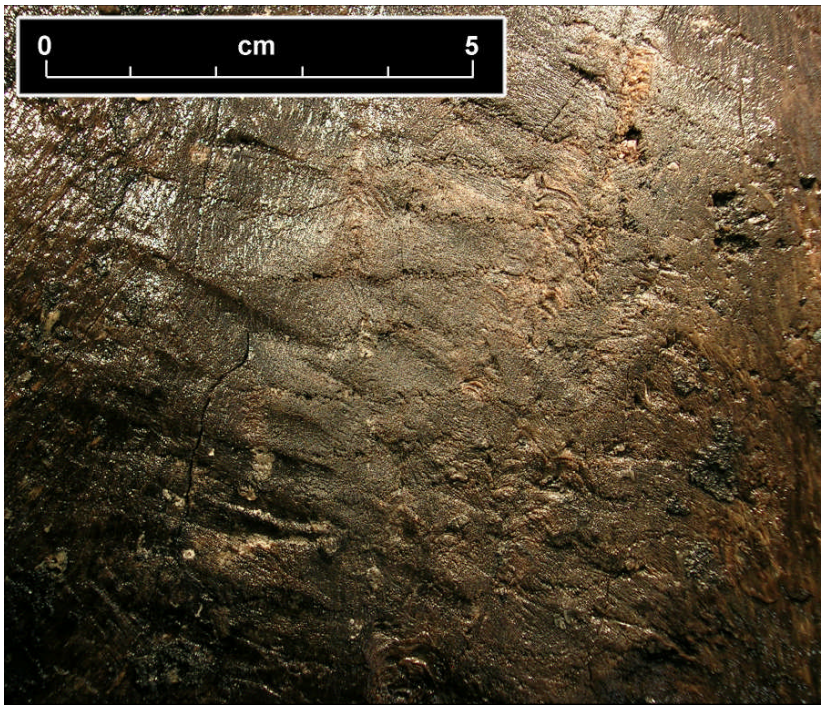

Figure 9: Area C - an area of shorter strokes coping with a tighter grain pattern

Conclusion

The marks on the transom board fit nicely with currently understood characterisation of Late Bronze Age marks, both in terms of general size and the shape of the facet. Full facet definition is absent and consequently blade shape reconstruction can only be done at a basic level. It is likely, however, that a single tool was used and this was not much bigger than the largest facet observed (53mm). The edge of the tool was gently curving and the straight, parallel areas of faceting suggest that the tool itself may have been mounted and used as an adze.

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