

The 'Kilnsea-boat', and some implications from the discovery of England's oldest plank boat remains

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A single plank with integral cleats, recently discovered on the East Riding of Yorkshire coast at Kilnsea, has been identified as a fragment of a Bronze Age plank boat, and dated to 1870–1670 BC. This makes the 'Kilnsea-boat' England's oldest dated plank built boat.

Key-words: Yorkshire, boat, Humber wetlands, Bronze Age

Introduction

A plank found by members of the Hull Natural History Society in September 1996 on the Kilnsea beach in the East Riding of Yorkshire, England (FIGURE 1) has been identified as a piece of a prehistoric boat. It was transported to the Hull and East Riding Museum in Hull, where analysis and dating of the plank were undertaken within the framework of the English Heritage commissioned Humber Wetlands Survey. Radiocarbon assay of the plank provided a date for the boat of 1870–1670 BC, which makes this the oldest dated plank-built boat fragment from England. Currently, the plank is under conservation at the York Archaeological Wood Centre — the conservation process is anticipated to be completed in 1999, when it will be returned to Hull and East Riding Museum for display. This report presents the main elements of the analysis and context of the find, and considers some of the implications of its discovery for the debate on the function and use of Bronze Age plank boats.

Context, description and dating of the 'Kilnsea-boat'

Although the Kilnsea-boat was found lying on the beach during low tide, it is thought that the find is associated with an estuarine rather than a coastal context. The severe erosion of East Yorkshire's Holderness coastline is well documented for the past and present, and with an average annual lateral coastal erosion of 1

to 2 m (Sheppard 1912) the Holderness coast of the Bronze Age may have been as much as 3 to 6 km to the east of the current coast, although alternative scenarios of coastal changes have been suggested for this area (Valentin 1971; De Boer 1964; Berridge & Pattison 1994). A short distance from the site of the plank, remains of an intertidal woody peat are exposed during low tides (Bisat 1952). The peat underlies a plastic clay rich in the mollusc *Scrobicularia plana*. A similar peat on the shore at Kilnsea Warren, 3 km further south, appears to have been forming c. 5000 years BP (Gaunt & Tooley 1974), and the deposits are related to the Kilnsea Fleet which lies within the estuarine catchment of the River Humber, rather than with coastal deposits (*cf.* Dinnin 1995). Although severely desiccated, the plank could only have survived in a wetland environment such as Kilnsea Fleet, where peat deposits are at present also severely desiccated.

The plank itself is of oak (*Quercus*), and its maximum dimensions are 1596 mm long, 350 mm wide and c. 60 mm thick (not including the cleats) (FIGURE 2). The plank was severely worn and desiccated, with none of the edges intact and toolmarks only distinguishable on the upper side of the plank. When the effects of desiccation are discounted, the plank is not curved in either transverse or longitudinal direction, leaving a flat underside. Projecting from the upper side are the remains of an integral cleat, measuring 712 mm in length, 115 mm

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Received 24 August 1998, accepted 23 September 1998, revised 16 November 1998.

ANTIQUITY 73 (1999): 131–5

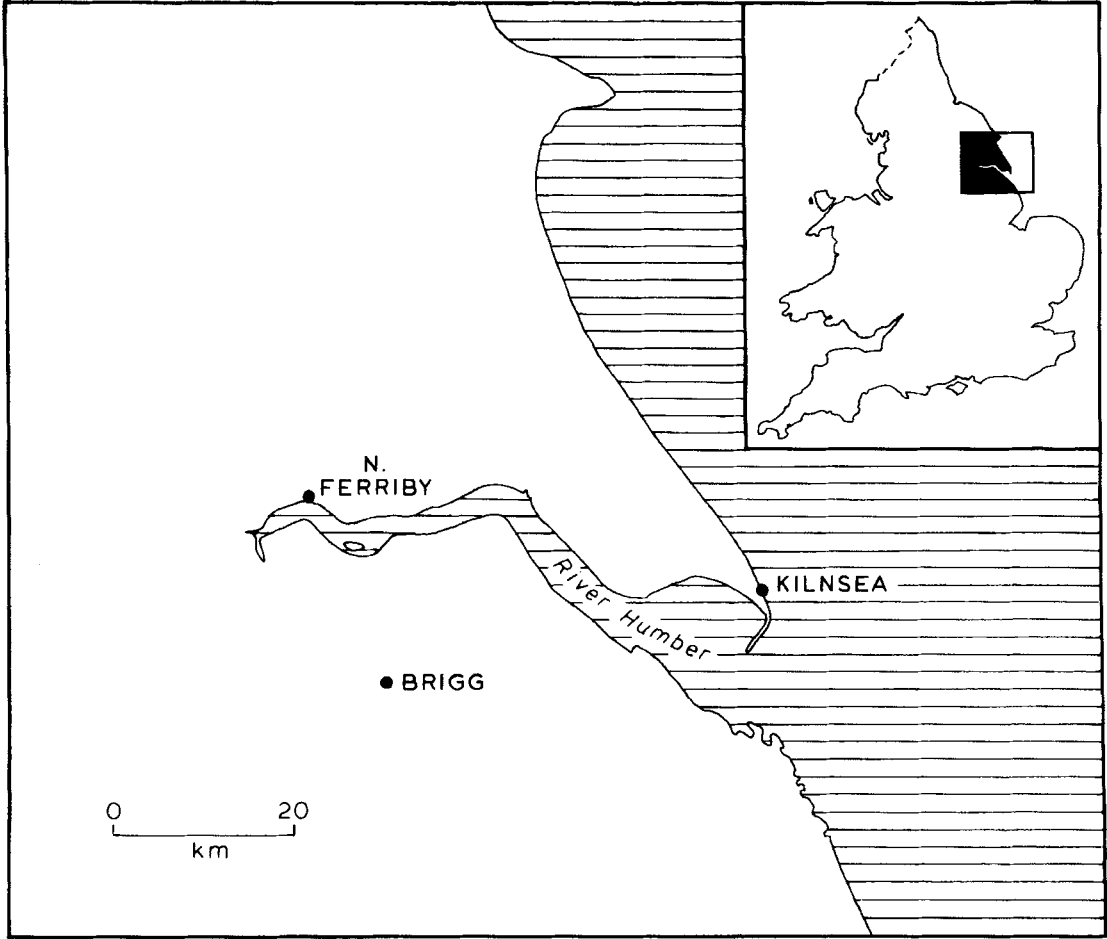


FIGURE 1. Location of the Kilnsea boat site, and of the Ferriby 1–3 and Brigg boat finds. (Drawn by K. Scurr.)

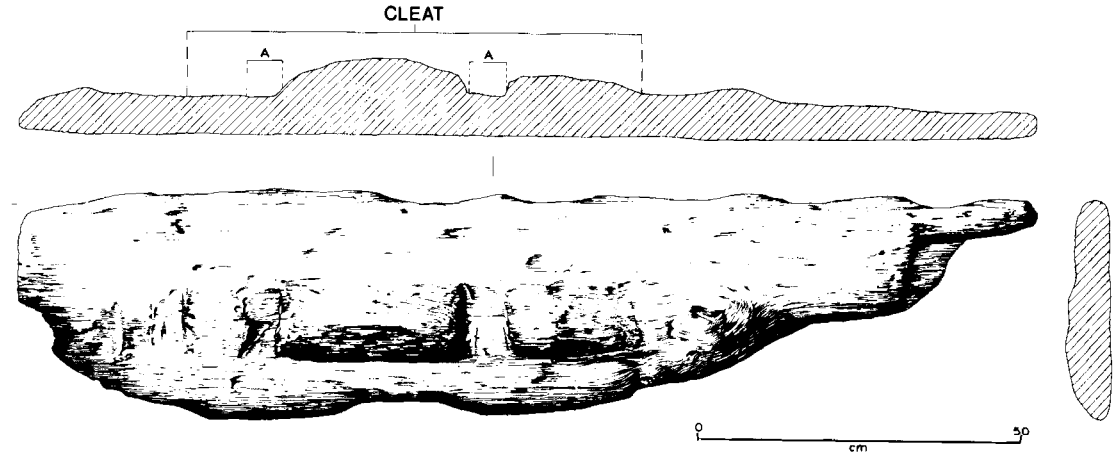


FIGURE 2. 'Kilnsea-boat' plank with integral cleats. A = position of the mortised holes within the cleat. (Drawn by L. Turner.)

name of craft	location	lab. no.	radiocarbon age (BP)	weighted mean (BP)	calibrated date range BC (95% confidence)	references
<i>England</i>						
Kilnsea boat	Humber estuary	OxA-6939 OxA-6940	3455±35 3340±40	3405±26	1870–1670	
Ferriby 2	Humber estuary	Q-3044 Q-3023	3095±40 3120±45	3106±29	1440–1310	Wright 1990; Switsur & Wright 1989
Dover boat	River Dour	–	–	–	archaeological date c. 1400 BC	Parfitt 1993; Parfitt & Fenwick 1993
Ferriby 1	Humber estuary	Q-3124 Q-3043	3020±40 2980±55	3006±32	1390–1130	Wright 1990; Switsur & Wright 1989
Ferriby 3	Humber estuary	Q-3147 Q-3145	2945±40 2975±45	2958±29	1310–1060	Wright 1990; Switsur & Wright 1989
Brigg 'raft'	River Ancholme	Q-1255 Q-1256 Q-1257 Q-1258 Q-1263 Q-1261 Q-1199 Q-1200	2605±50 2605±50 2592±50 2670±75 2570±60 2560±50 2545±100 2545±100	2603±21	820–790	McGrail 1981; Switsur & Wright 1989
<i>Wales</i>						
Caldicot	River Nedern	UB-3472	3439±19	–	1880–1690	McGrail 1997
Goldcliff	Severn estuary	–	–	–	dendro-chronological date, felled 1017 BC+	Bell 1993; Hillam 1998

TABLE 1. *Dated Bronze Age sewn plank boats from England and Wales.*

wide and a maximum height of 55 mm, although the latter represents a broken surface. Part of the cleat was broken off, leaving a clearly distinguishable scar on the plank surface. Two mortised holes are distinguishable within the cleat, of 45 mm and 56 mm by (at least) 31 mm respectively. The plank was fashioned tangentially from the tree trunk, with the underside of the plank nearer the outside of the trunk. No evidence of stitchholes or stitches of twisted withy of yew or similar material was found on the plank, which must be attributed to the eroded nature of the plank and its dislocation shortly before its discovery.

There is little doubt that the plank was part of a sewn plank boat. The use of large integral cleats, carved out of the solid planks, through which transverse timbers were passed to provide stiffness to the hull, is a construction technique common to all known Bronze Age plank boats from the British Isles (*cf.* Wright 1990; McGrail 1997; 1998a), while this technique is unrecorded from Bronze Age wetland sites such as trackways and settlements. Furthermore, its location near an intertidal inlet supports this determination. Compared to its geographically nearest parallel, the Bronze Age boats from North Ferriby which were found c. 40 km upstream

from Kilnsea (Wright 1990), the dimensions of the plank, cleat and mortised holes closely resembles Ferriby 1. If the Kilnsea-boat was similar to Ferriby 1, the plank described here could have been part of the keel-plank, or alternatively, the outer bottom strake.

The tangentially cut plank presented an insufficient number of tree-rings for dendro-chronological dating, and so two samples from the underside of the plank were submitted for radiocarbon measurements (TABLE 1). The two determinations are statistically significantly different at 95% confidence, but not at 99% (Ward & Wilson 1978). They have therefore been combined before calibration to produce a calibrated date range of 1870–1670 BC (at 95% confidence). All calibrated dates in TABLE 1 have been calculated using OxCal v2.18 (Bronk Ramsey 1995), data from Pearson & Stuiver (1986) and the maximum intercept method of Stuiver & Reimer (1986) with ranges rounded outwards to 10 years (Mook 1986).

Dated Bronze Age sewn plank boats

Since the discovery of Ferriby 1 in 1937, the partial remains of six additional plank boats of Bronze Age date have been discovered, although the Brigg 'raft' had been initially exposed in 1888 during excavation of brick clay, and was not recognized as a Bronze Age plank boat until more recent research was undertaken (McGrail 1981). All dated Bronze Age sewn plank boats from England are listed in TABLE 1. Dating of logboats from the British Isles in any systematic manner has only commenced recently, but the 25 dated logboats from the area provide a date-range from *c.* 1400 BC to the 14th century AD (McGrail 1998). The claim for the Kilnsea-boat being England's oldest boat is, on the basis of current data, justified. However, the date of a side strake from a sewn plank boat from Caldicot, Wales, has been determined as 1880–1690 BC (at 95% confidence; TABLE 1). This appears to be broadly contemporary with the date of the Kilnsea boat. Such an early date for a plank built boat is unsurprising. Wright (1990), for example, has long held the view that the ancestry of the style of boat-building of Ferriby 1 and 2 had to be sought in the Early rather than the Middle Bronze Age. The dating of the Kilnsea fragment supports this view.

Seacraft or rivercraft of the Bronze Age?

Cultural exchange between continental Europe and the British Isles is well attested for the later Neolithic and earlier Bronze Age periods, *c.* 2500–1500 BC, but the type of craft by which this contact was established and maintained remains a subject of debate. This debate has thus far focused mainly on technical specifications of design of Bronze Age sewn plank boats, which are generally considered the most likely candidates for seafaring, although such functions have also been proposed for hide or skinboats on theoretical grounds (*cf.* McGrail 1993). The debate is predominantly based on assessments of the seaworthiness of boat-reconstructions (e.g. Coates in Wright 1990; McGrail 1981; 1998b). The limited remains of the Kilnsea-boat preclude its reconstruction and assessment of performance, but its location in the outer estuary, where its role as a ferry can only be considered impractical, suggest that coastal and indeed seafaring functions should be contemplated. In fact, the distribution of all known sewn plank boats of Bronze Age date supports such a function (see TABLE 1). Remains of dated plank boats have been discovered either in estuaries, such as Ferriby 1 to 3 and Goldcliff, or in tidal rivers near estuaries or the coast, including the boats from Kilnsea, Brigg, Caldicot and, most significantly, Dover, but not on inland rivers. This distribution appears to be significant, especially when it is compared to the distribution of logboats, be it mostly undated, which includes typically tidal rivers and inland waters, but only rarely estuaries or coasts.

Within the context of late Neolithic and early Bronze Age exchange, the assessment of seaworthiness of the reconstructed boats may well be considered of limited value. Studies of elite networks and long-distance interaction attest of the prestige attached to exchanged objects, which in this context include beaker pottery and bronze and gold objects (Burgess 1978; *cf.* Bradley 1990). If the seaworthiness of Bronze Age plank boats was genuinely or perceived as severely limited, for example in terms of risk to the lives of the mariners, or their use as seacraft was only possible under extremely favourable weather conditions, this could contribute to the prestige attached to the exchanged objects and enhance the membership of elite networks. Obviously, the use of plank boats as seacraft does not exclude their use on rivers and estuaries.

Conclusion

The plank with integral cleat discovered on Kilnsea beach is probably part of the outer bottom strake or keel-plank of a built boat dated to *c.* 1870–1670 BC. The use of the Kilnsea-boat and other recent discoveries of Bronze Age plank boats from England and Wales is considered in the light of the location of finds. It was concluded that plank boats were sea-going vessels capable of carrying

small cargoes and reaching Continental Europe. As such, they would have enabled the exchange of prestige goods by coastal routes and with Continental Europe, leading to the support of élite networks.

Acknowledgements. We are grateful to English Heritage for its support during the analysis and for the conservation of the boat fragment, to Ian Panter for much valued advice and information and to Professor Sean McGrail and Edward Wright for comments on an earlier draft of this paper.

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