

Fig. 1: the Kingston no. 2 boat *in situ*; much of the planking from the port side re-used in a simple low quay revetment. (Photo: G. Potter)

Recent finds of ancient boats from the London area

DAMIAN GOODBURN

IN 1987 AND early 1988 many ancient boat timbers were found on rescue excavations carried out by the Departments of Greater London Archaeology and Urban Archaeology of the Museum of London (DGLA and DUA). Most were found re-used in waterfront structures, sometimes in small fragments, sometimes as large articulated sections (Fig. 1).

This article is an interim summary of these finds; much detailed work remains to be done. The study of re-used and very fragmentary boat finds is a relatively new field in which there are few precedents to follow, with the notable exception of the

work of A. E. Christensen on the boat timbers recovered during excavations on Bergen's medieval waterfront¹.

The importance of fragmentary boat finds

The study of these fragmentary finds is important for several reasons:-

1. In many periods and areas a few fragments are all we have. For example, there are as yet no relatively intact plank boat finds from Britain dating to the 11th to 14th centuries.

1. A. E. Christensen in Hertieg (ed.) *The Bryggen papers*, main series vol. 1, 1985. Bergen.



Fig. 2: distribution map showing finds of plank boats made before 1986 as dots and those made since as crosses. Also includes the recent finds of dugouts from Southwark and Clapton as crosses with bar under.

2. Boats and ships were essential parts of the local and regional economy in many societies before the 20th century. Craft of all kinds were essential for trading, colonisation, fishing, farming, personal transport, and military exploits. Boats even figure in ritual and social organisation, as in the Sutton Hoo and Snape ship burials. The local boats and ships from London, once the world's largest port, cannot be ignored.
3. Details of ancient and, indeed, recent ship- and

boat-building are little known, and even small dated fragments can add significantly to our scant knowledge of this important part of our material culture. For example, work on the London collection will produce a chronology for details of construction which are not, as yet, closely dated.

4. The use of a vessel can leave permanent traces on its timbers which may provide clues to the identity of its cargoes (e.g. abrasive cargoes like Kentish ragstone).

5. The detailed study of the raw materials used in boat- and ship-building can provide extensive views of past landscapes. We have to assume a vessel was built near its archaeological find-spot unless we have very clear reasons for thinking otherwise. Thus the finds summarised here are assumed to be local to the Thames region.

Logboat

On a development site by the west bank of the river Lea, a nearly-complete oak logboat was recovered by the DGLA (North section). It was originally about 3.75m (12ft) long, with a beam of about 0.65m (2ft 2in) and a depth of 0.4m (1ft 4in), resembling a small Thames punt in general appearance. A midships bulkhead was left in the solid wood, possibly to provide a seat (*thwart*). The vessel, which has been dendrochronologically dated by I. Tyers, was recorded by P. Marsden² with my assistance. An accurate replica has been built by the charity Marine Archaeological Surveys³.

Planked boats

All the recent finds have been made along the Thames, in areas of reclaimed land (Fig. 2). Many have not yet been closely dated, but broad date ranges have been supplied by the site supervisors.

2. Report by P. Marsden forthcoming in *Int Journ Naut Archaeol*.
3. See *London Archaeol* 5, no. 11 (1987) 308; an article on this experiment is expected soon.

Kingston⁴

The earliest material was excavated on the Kingston Horsefair site, supervised by G. Potter. Large parts of three clinker-built vessels were found, together with fragments of planking from several smaller craft. The date of re-use of these finds lies in the late 13th to late 14th century. All three major finds comprised slabs of articulated planking, which had been used as shuttering behind revetment piles. The overlapping planking was held together by iron rivets with square, rhomboid and rectangular washers (*roves*). The planking was mostly radially-cleft oak, though tangentially-cleft planking was used where particular width and length were deemed necessary by the boat builders. The laps and end-to-end joints (*scarfs*) were waterproofed (*luted*) with several rolls of tarred hair inserted during the riveting together of the hulls. Where tool marks survived on the hulls it appears that axes were the main shaping tools, though small adzes were used to trim areas of planking that were to be patched (*tingled*).

Boat no. 1

This is represented by several slabs of planking, mainly from the port side and bottom, but also including parts of the upper planks from either the

4. Sheila Girardon and Jenni Heathcote 'Excavation Round-up 1987: part 2, London Boroughs' *London Archaeol* 5, no. 15 (1988) 412.

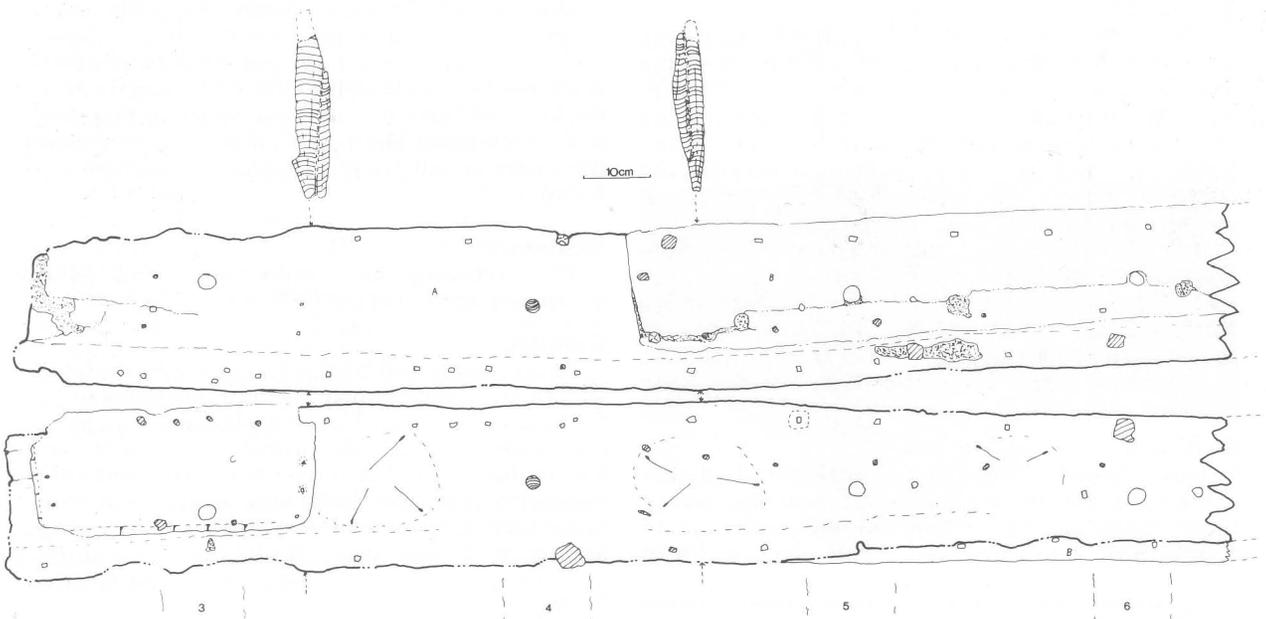


Fig. 3: part of one of the planks from the Kingston no. 1 boat, showing two repair patches (the larger of which is made out of a re-used boat plank), wear hollows between frames 3, 4 and 5 and the tarred hair luting.

port side at the stern or the starboard side at the bow. The fragments can be oriented by checking the alignments of the scarf joints, which are commonly cut so as to prevent the ingress of water as the boat moves forward. The planking can be assembled to give a length of about 11m (36ft) by about 0.8m (2ft 7in) deep, made up of four runs of planking (*strakes*). The overall length of the vessel would have been about 15m (49ft). The planking was on average about 30mm (1¼in) thick; the bulbous-headed pegs (*treenails*) that secured the frame elements to the plank shell were spaced at about 0.47m (1ft 6in) centres. This thickness of planking, the close spacing of frame elements (much closer than in Saxon or Viking vessels), and the great wear on the inside of the planking between the frames, indicates that this vessel was loading heavy, loose, abrasive cargoes, possibly stone, at least at the end of its life (see Fig. 3). A vessel of this size and weight is unlikely to have been primarily propelled by rowing, and probably relied on the wind and tide for propulsion. The original could have been either a medium-sized coastal trader, perhaps similar to Kalmar No. 1⁵, or a river ballast barge perhaps similar to Blackfriars No. 3⁶. When more finds are published we may be far more certain of the type of craft represented by fragmentary finds such as these. Though not common, broadly similar material has been found at Bristol, Lincoln, York, Dublin, Amsterdam and earlier in London, but it has not yet been published in any detail.

Boat no. 2

This consists of one slab of the port side of an even more heavily built clinker vessel, running from the stern forward for about 13m (43ft). The five strakes were still articulated, having a depth of about 0.9m (3ft). The planking was originally between 45 and 50mm (1¾ and 2in) thick, implying a very heavily constructed craft. The scarf joints were neatly cut out with an axe, and instead of fitting flush with the outer surface of the hull, they overlapped and stood proud by about 8mm (⅓in). Similar scarfs were used in the no. 3 boat, but in the no. 1 a notch (*nibb*) was neatly cut to accommodate the tapering end of the forward plank (see Fig. 4). Traces of tar or paint had survived on the outboard faces of some of the planking of the nos. 2 and 3 boats.

Boat no. 3

This consists of a slab of articulated clinker planking similar to no. 2, except that it was part of the starboard side of a vessel. Its total length is about 5.8m (19ft), with three and a half plank width of

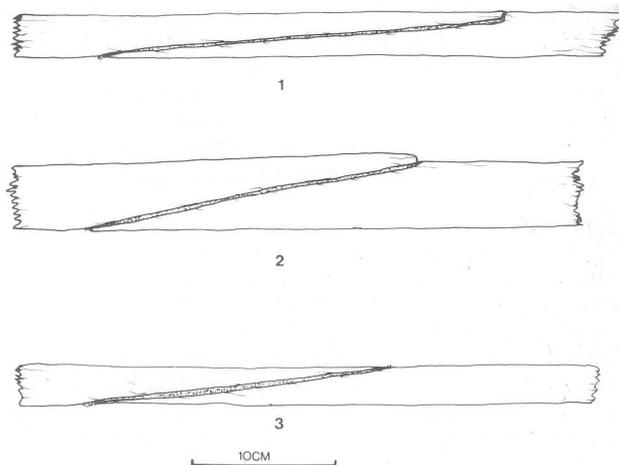


Fig. 4: diagrams showing the types of scarf used in (i) the Kingston no. 1 boat, (ii) the Kingston no. 2 boat and (iii) the Abbots Lane boat, seen in long section, with the outside of the hull uppermost.

0.65m (2ft 2in) surviving intact. The uppermost plank, which may have been a longitudinal strength member (*wale*), was nearly 80mm (more than 3in) thick and had been sawn out of half an oak bole. This is the earliest evidence of the use of the saw in post-Roman British boat-building of which I know.

All the vessels were very old and worn when they were broken up and must have leaked very badly. The patching of the planking was usually very neatly, if not strongly, done: the cleft oak or occasionally beech tingles were fastened, inboard and out, over tarred hair and held in place with twice-hooked nails. This often resulted in a hull thickness of three or even four layers of planking in places. Kingston Heritage Centre plans to conserve this material and put it on display near where it was found.

Southwark⁷

The following sites were excavated by the Southwark section of the DGLA.

Bankside

At 5-15 and 37-46 Bankside, clinker boat planking was found re-used in revetments of medieval to early post-medieval date. The hull planking was in both cases radially-faced oak, probably cleft, with tarred hair in the laps and iron rove nails. The roves in the fragments from the latter site were smaller than those used in many earlier medieval finds, possibly hinting at a later date. An initial conclusion on

5. H. Akerlund *Fartygsfynden i den forna hamnen i Kalmar* (1951) Stockholm.

6. P. Marsden 'Blackfriars wreck 3', *Int Journ Naut Archaeol* 1 (1972) 130-2.

7. *Op cit* fn 4, 414.

8. Jenni Heathcote 'Excavation Round-up 1987: part 1, City of London' *London Archaeol* 5, no. 14 (1988) 387.



Fig. 5: a re-used highly-decorated painted and moulded timber, probably from above a stern window in a large 17th to early 18th century ship. (Photo: J. Scrivener)

dating features of clinker boats from the lower Thames region is that the rove nails used in the plank laps became progressively smaller from the medieval period to the present day. This tendency is marked in the case of the 17th century ceremonial barge on display at the National Maritime Museum, the 17th century Blackfriars wreck, and fragments of clinker boat planking from the 245 Blackfriars Road and City of London Boys' School sites (see below).

Blackfriars Road

Here, apart from three pieces of clinker boat planking of radially-faced oak, three fragments of clinker boat frame elements were found re-used as piles. They were hewn out of pieces of oak, with much of the sapwood left on, and notches (*joggles*) were cut to fit neatly over the stepped profile of the hulls. The trenails used in these 17th to early 18th century timbers were all made of oak instead of the softer woods preferred in the earlier medieval finds. The rove nails used in the thicker planking from this site were only 20-25mm ($\frac{3}{4}$ -1in) across, even though the other dimensions were comparable to those of the Kingston no. 1 boat for example, where the roves were nearly twice the size.

Abbots Lane

Several metres of articulated clinker boat planking, from the starboard side of a vessel, were found. Unfortunately, vandals damaged part of this vessel overnight, but much useful information has still been

9. *Carvel* refers to vessels built with smooth non-edge-joined planking which, in developed forms, is fastened to a pre-erected framework. In *clinker* vessels the plank shell is built first and the framing added afterwards.

recorded. The find dates to the late medieval to early post-medieval period.

Morgans Lane

This site yielded several slabs of clinker boat planking re-used in a large revetment; several vessels appear to be represented. Some of the planking is of elm (*sp.*), which is unique in the London material to date.

Detailed recording of all these Southwark finds is to be undertaken shortly, at least on the large samples of planking that were lifted and are now held in store. The DGLA will be able to make a very substantial contribution to the study of early ships and boats used in the London area from the late 13th to 17th centuries.

City of London Boys' School⁸

Several hundred re-used ship and boat timbers of a totally different type have been excavated and rescued from contractors' spoil heaps. As well as small fragments of a clinker-built boat re-used in building foundations, a range of hull, deck, hatch, and decorated timbers from a variety of 17th to early 18th century carvel-built vessels were recorded⁹. At least three and probably more than five vessels are represented, including a large ship of high status, a roughly-built medium-sized craft, and the clinker-built vessel. An example of the highly-finished nature of some of large ships timbers can be seen in Fig. 5. This oak timber, carefully carved and with twisting planed rebates on the plain face, had a layer of yellow paint, possibly to mimic gilding. It probably came from above one of the high decorative stern windows which were common in

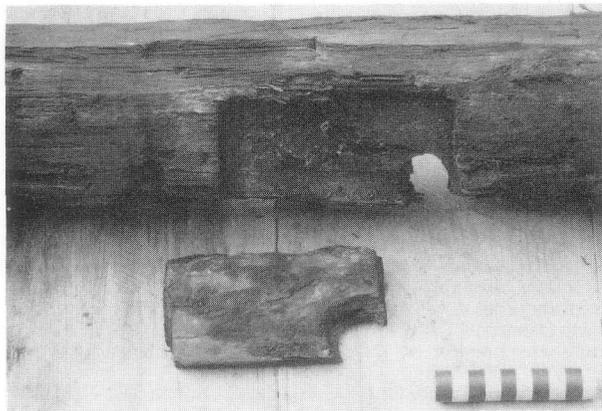


Fig. 6: a re-used fragment of carvel ship hull plank, showing evidence of repair patching and sheathing as evidenced by the presence of small iron nails in the outboard face of the plank.

(Photo: J. Scrivener)

ships of the period. The large fragments of oak deck beam may be from the same craft; as a clear indicator of the scale of the vessel concerned, they are similar to the larger deck beams of the *Wasa*. Many smaller oak timbers probably also came from this vessel, such as the hatch, grating beams, other ship joinery including an elm belaying "timber head", and many small fragments of oak and elm carvel ship planking about 0.1m (4in) thick. Some of this planking shows extensive signs of repair (Fig. 6). All the hull planking is tangentially converted, probably "through and through" sawn. Much of the timber was cut from trees that would be considered too small to be usable by a modern sawmiller. The main fastenings used in the large vessel or vessels are parallel-sided oak trenails with ends split and caulked to form a triangle or square pattern.

From the medium-sized vessel, perhaps 12 to 20m (40 to 65ft) long, there are several roughly-hewn oak frames, which were still pierced by oak trenails and a few iron spikes. Much sapwood was left on these timbers; together with the rough hewing this implies

an origin in a short-lived vessel of low status, possibly a sailing barge or small coastal trader.

Conclusion

The variety of this material demonstrates the existence of complex evolving technologies. Given further study, we should be able to shed much light on London's riverine traffic, boat- and ship-building, and the development of vessels which ultimately carried capitalism and European culture world-wide. The work in progress on London's waterfronts and docklands will inevitably produce a great deal more of this type of material.

Acknowledgements

I would like to thank all the supervisors of the sites which produced this material: G. Potter, A. Thompson, P. Thompson, J. Hunter, N. Shepherd, J. Bowsher and C. Spence, and D. Whipp. I should also like to thank S. McCracken and D. Whipp for allowing me to refer to DGLA material, and A. Dyson and C. Orton for editing this paper. However, the interpretations presented in the paper remain the writer's responsibility.

Excavations & Post-Excavation Work

City, by Museum of London, Department of Urban Archaeology. A series of long term excavations. Enquiries to DUA, Museum of London, London Wall, EC2Y 5HN (01-600 3699).

Croydon & District, processing and cataloguing of excavated and museum collections every Tuesday throughout the year. Archaeological reference collection of fabric types, domestic animal bones, clay tobacco pipes and glass ware also available for comparative work. Enquiries to Mrs Muriel Shaw, 28 Lismore Road, South Croydon, CR2 7QA (01-688 2720).

Greater London (except north-east and south-east London), by Museum of London, Department of Greater London Archaeology. Excavations and processing in all areas. General enquiries to DGLA, Museum of London (01-600 3699 x241).

Local enquiries to:

North London: 3-7 Ray Street, London EC1R 3DJ (01-837 8363).
South-west London: St. Luke's House, Sandycroft Road, Kew, Surrey (01-940 5989).

Southwark and Lambeth: 6-8 Cole Street, London SE1 4YH (01-407 1989 or 403 2920 - office - and 407 1258 - warehouse).

West London: Town Mission Hall, Mission Square, Pottery Road, Brentford, Middlesex (01-560 3880).

Hammersmith & Fulham, by Fulham Archaeological Rescue Group. Processing of material from Fulham Palace. Tuesdays, 7.45 p.m.-10 p.m. at Fulham Palace, Bishop's Avenue, Fulham

Palace Road, SW6. Contact Keith Whitehouse, 86 Clancarty Road, SW6 (01-731 4498).

Kingston, by Kingston upon Thames Archaeological Society. Rescue sites in the town centre. Enquiries to Marion Shipley, Kingston Heritage Centre, Fairfield Road, Kingston (01-546 5386).

North-east London, by Passmore Edwards Museum. Enquiries to Pat Wilkinson, Passmore Edwards Museum, Romford Road, E15 4LW (01-534 4545).

Surrey, by Surrey Archaeological Unit. Enquiries to David Bird, County Archaeological Officer, Planning Department, County Hall, Kingston, Surrey (01-541 8911).

Vauxhall Pottery, by Southwark and Lambeth Archaeological Society. Processing of excavated material continues three nights a week. Enquiries to S.L.A.S., c/o Cuming Museum, 155 Walworth Road, SE17 (01-703 3324).

The Council for British Archaeology produces a monthly British Archaeological News (9 issues a year). It gives details of conferences, extra-mural courses, summer schools, training excavations and sites where volunteers are needed. The annual subscription of £7.50 includes postage, and should be made payable to C.B.A., 112 Kennington Road, SE11 6RE (01-582 0494).