

The boat timbers

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Glossary of boat terms

clinker planking Planking assembled by successively fastening together the edges of overlapping strakes, generally before the insertion of any transverse stiffening.

expanded dug-out A dug-out base to which side planks have been added to extend the freeboard.

frame Transverse timber which supports the outer shell of a boat.

garboard strake Strake next to the keel.

grommet A ring or loop.

limber hole A hole cut in the bottom of a frame, close to the keel, to permit a free flow of water in the bilges.

rebate Channel cut in one member to accommodate the end or edge of another without forming a lip.

rove Small perforated metal plate which prevents the clenched point of a nail or bolt from drawing.

strake Run of planking extending the length of a vessel.

thole An upright or claw-shaped timber set atop the gunwale to act as an oar pivot.

trenail Cylindrical wooden pin used to hold the parts of a vessel together.

Boat timbers (Illus 215–16)

Ten boat components were identified amongst the worked wood finds recovered from the excavation. They comprise four frames, two tholes, an oarport cover, two short lengths of clinker planking with clench rivets and a possible roperunner (see above, Toggles, for a discussion of the latter object).

All the evidence of shipping from 12th- and 13th-century Perth points, not unexpectedly, to the Scandinavian traditions of northern Europe. Though the material sample is admittedly a small one, we catch in it glimpses of clinker-built river craft and ferries and, perhaps, of larger sailing vessels plying beyond the estuary. Evidence from the metalwork suggests that some of the vessels may have been built in Perth yards. Although there is no direct evidence of shipbuilding

in Perth until the 19th century, a late 16th-century reference to the practice of floating timber down river to burghs like Perth and Inverness is perhaps relevant. Boat-building was certainly taking place at Inverness in the early 13th century when the Count of St Pol commissioned ‘a wonderful ship . . . so that he could boldly cross the sea in it’ (Anderson 1908, 295n2).

So far, material remains of Scottish medieval boats and ships have been rare. Finds in the past have generally been made by chance as for example the clinker stem and stern components from Eigg (Macpherson 1878), or the discovery in 1934 of an apparently partly intact clinker vessel in Loch Laggan of which, unfortunately, no adequate description and only a few isolated parts have survived (Maxwell 1951).

Boat timbers.

<i>Cat/Accession</i>	<i>Object type</i>	<i>Area</i>	<i>Rig</i>	<i>Feature</i>	<i>Phase</i>
South Sector					
84/A6085	Claw thole	2	VI	P5.4b	I Ib, I Ic
88/A12563	Boat frame	3	VI	B4, MW5202	I Ic
104/A12578	Boat frame	4	VI	MC084, MW4709	I Id, I Ie
121/A12522	Boat frame	4	VI	M1.1b	I Ie–I Iff
162/A9805	Boat frame	3	VI	M1.3, MW4429	I Ii
269/A05–0224	Upright thole	10	VII	B18 (Phase 2), MW6155	I Vb
288/A05–0206	Plank with clench rivets	7	VII	B18 (Phase 2a), External 1, Pit 7314	I Vb
289/A04–0662	Plank with clench rivet	7	VII	B18 (Phase 2a), External 1, Pit 7314, MW7319	I Vb
354/A6476	Oarport cover	4	V & VI	M1.4b	I Vb–I Vcc
501/A05–0128	Roperunner?/toggle	7	VI & VII	M1.5b	I Vaa

A clinker boat, ten feet long, was recorded as being discovered during the construction of buildings in St John Street to the south of St John's Kirk early in the 19th century (NSA, 63).

The boats of medieval Perth doubtless had many features in common with the sailing galleys which are depicted, often in considerable detail, in the late medieval monumental sculpture of the West Highlands (Steer and Bannerman 1977, 180–4).

The Perth finds, and other recent discoveries from a waterlogged context at Threave Castle (Good and Tabraham 1981), suggest that such objects may not be so rare as has been supposed: future progress will depend on the capacity of excavators to recognise boat finds, and on the availability of adequate techniques to record and preserve them.

Frames (Illus 215)

All the frames are of oak, and all are 'grown' timbers: that is, they are fashioned from parts of the tree where natural curves or junctions provide a basis for the required shape. All four were recovered from Rig VI deposits that were laid down during the second half of the 12th century, but they had probably all been reused.

The bottom of frame Cat No 104/A12578, although now partly eroded, has clearly been squared off to accommodate a keel approximately 90mm wide. On one side of the keel (the right hand as presented in Illus 215), a 30mm square limber hole has been cut into the frame. Above this, a series of stepped recesses on the outer edge of the frame indicates at least four runs of clinker planking measuring (without allowance for the overlap) 100mm, 140mm, 180mm and at least 140mm in width, working upwards from the garboard strake. Allowing for a keel rebate, the width of the garboard strake can be estimated at c170mm. The first three strakes flare evenly upwards, while the fourth shows a distinct flattening out. This feature suggests a flared V-bottom such as might be expected towards one or other of the vessel's extremities. The other side of the frame survives only to the level of the second strake and shows that the garboard strake, at least, closely matches its opposite number in size. The cuts on both sides suggest a plank thickness at the upper edge of 15mm, although if, as is likely, the boards were derived from radially-split logs (see below), this thickness may not have been constant throughout the width of the planks (McGrail 1976, 241–4; McKee 1976, Fig 2 (p 6), E).

A 20mm diameter oak trenail penetrates the frame at the third strake upwards on the right, while another is located at the second upwards on the left. This relatively light and infrequent pegging of frame to planking shows that the frame was a passive rather than an active component of the hull. In other words, the boat was not built by laying up planks on a pre-erected skeleton, but by overlapping and edge joining a set of strakes, whose shapes dictated the ultimate shape of the hull. Into this fairly rigid self-stressing clinker 'shell' the secondary frames were joggled to provide additional support.

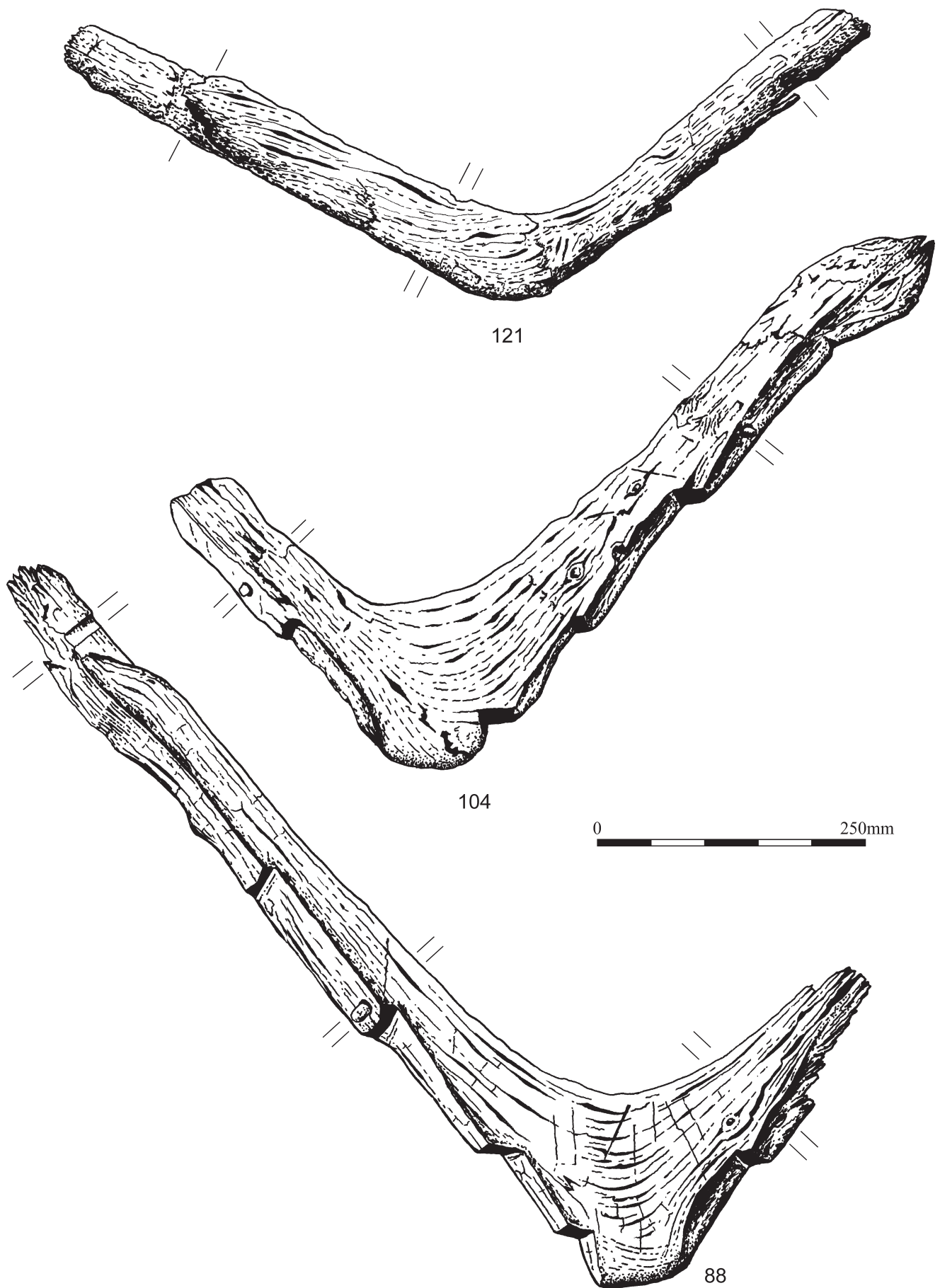
Another frame, Cat No 88/A12563 (Illus 215), has many similarities to Cat No 104/A12578, and in view of the relatively close spatial and chronological contexts within which they were found, both may be parts of the same vessel. The seating for the keel, as with Cat No 104/A12578, is c90mm wide, while a similar 30mm limber hole is present. Recesses for strakes, working upwards from the garboard, measure 170mm (with due allowance for the keel rebate), 140mm, 150mm, 210mm and at least 160mm. The outward flare is even, and does not flatten as does Cat No 104/A12578. Oak trenails occur at the second strake on the right, and at the third and fifth on the left.

If, as suggested, Cat Nos 88/A12563 and 104/A12578 come from the same vessel, then the limber holes, which must have been located along the same side of the keel to permit a free run of water, provide a relative orientation. In Illus 215, however, the pieces are turned so that the limbers appear on opposite sides. They have been so drawn because the faces of the strake recesses are angled from the square in opposite directions, and the recesses on both could not otherwise have been presented in elevation. Since these angles reflect the inturn of the strakes as they approach one or other of the boat's extremities, it is therefore likely that these two frame timbers come from opposite ends of the vessel.

The present condition of the frames, and the distortions in them which appear to have taken place, preclude any detailed estimation of the size and shape of the vessel from which they may have come. But in very general terms, which on the evidence can be little more than an educated guess, the vessel represented by Cat Nos 88/A12563 and 104/A12578 was probably an open clinker-built boat some 10m long with a fairly fine entry and run. It will have been pointed at both ends, with the strakes rebated into stem and stern posts which

Boat timbers: frames.

<i>Cat/Accession</i>	<i>Object type</i>	<i>Area</i>	<i>Rig</i>	<i>Feature</i>	<i>Phase</i>
South Sector					
88/A12563	Boat frame	3	VI	B4, MW5202	IIC
104/A12578	Boat frame	4	VI	MC084, MW4709	IId,IIE
121/A12522	Boat frame	4	VI	M1.1b	IIE–IIff
162/A9805	Boat frame	3	VI	M1.3, MW4429	IIi



Illus 215 Boat timbers, frames.

may have been similar to the two roughed out pieces which were found buried, apparently for seasoning, in a moss at Laig on the Island of Eigg, and which are now in the National Museum of Scotland (formerly the National Museum of Antiquities of Scotland) (Macpherson 1878, 594–5). Cat No 162/A9805 is a fragment of a similar frame, with rebates for three planks. There is a single trenail hold in the centre rebate.

Cat No 121/A12522 is probably a frame timber from the midships section of a small clinker-built boat or, just possibly, a side support from an expanded dug-out similar to Boat 3 from Zwammerdam (de Weerd 1978, 16, 17 Fig 19b).

Planking with clenched rivets

These two pieces, which were recovered from the cesspit (Pit 7314) attached to the north room of B18 (Phase 2a), are almost certainly parts of strakes from a clinker built boat similar to that represented by frames Cat Nos 88/A12563 and 104/A12578. The edge opposite the rove on Cat No 289/A04–0662 is chamfered to an angle of c20°. The plank has been split radially from the parent log (see McGrail 1976, 243), and the length of the rivet shank (25mm) suggests that it had overlapped a plank of rather greater thickness. Cat No 288/A05–0206 is rather more informative. In this case the edge remains of both planks and two rivets have survived. The inner plank is c15mm thick, while the other is c10mm. One of the rivets is intact, while the other has lost its rove. The distance between the rivet centres is 100mm.

A number of other clenched rivets were also recovered from the same pit and they should probably be associated with these pieces.

Tholes (Illus 216)

An upright thole or rowlock, Cat No 269/A05–0224 (Illus 216), measuring 760mm by 280mm overall, was recovered from the base of the east wall of B18 (Phase 2) where it had been re-used. The wood is oak from which a suitably shaped branch junction has been selected for the piece. There are three trenail holes (one trenail) 20mm in diameter in the side, and five similar holes (one with a trenail) are set vertically. The stumps of two 10mm diameter iron rods are visible on the centre line of the timber, one on either side of the upright member and 90mm from it. These are probably the remains of pins intended to restrain the oar on the return stroke: that one is located on either side suggests that the vessel on which the thole was mounted was intended to be rowed in both directions.

Upright tholes are much less common in the medieval period than claw tholes (none are recorded at Novgorod), and they occur only infrequently in later Scandinavian contexts (for example Faerøyvik and Faerøyvik 1979, 127). This rarity suggests that the Perth upright thole, which is securely dated by its associations to the later 13th century, may have been part of some kind of specialised vessel. A double-ended ferry seems a possibility.

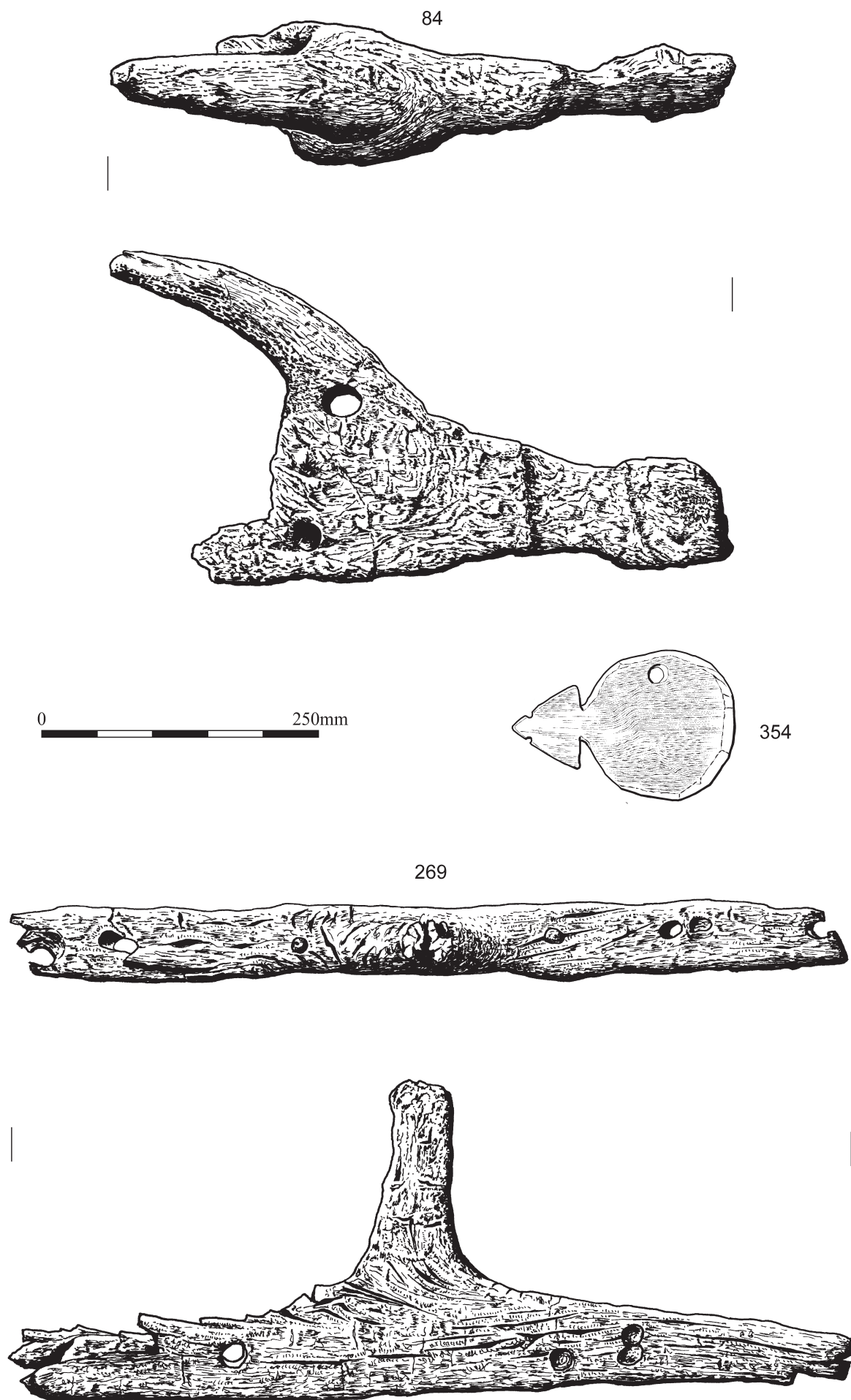
A claw thole, Cat No 84/A6085, of characteristic type was found, again apparently re-used, in a context which dates to the second half of the 12th century. It measures 560mm by 300mm overall, with a 30mm diameter hole for a rope or thong grommet (cf Kolchin 1968, Fig 54:4 and 5; Fig 55:1). There is a 20mm hole for a peg or trenail lower down. Forward of the claw, on one side of the thole, there is a shallow recess 90mm wide for an upright component (cf Kolchin 1968, Fig 54:4 and 8).

Boat timbers: planks with clenched rivets.

<i>Cat/Accession</i>	<i>Object type</i>	<i>Area</i>	<i>Rig</i>	<i>Feature</i>	<i>Phase</i>
South Sector					
288/A05–0206	Plank with clenched rivets	7	VII	B18 (Phase 2a), External 1, Pit 7314	IVb
289/A04–0662	Plank with clenched rivet	7	VII	B18 (Phase 2a), External 1, Pit 7314, MW7319	IVb

Boat timbers: tholes.

<i>Cat/Accession</i>	<i>Object type</i>	<i>Area</i>	<i>Rig</i>	<i>Feature</i>	<i>Phase</i>
South Sector					
84/A6085	Claw thole	2	VI	P5.4b	IIb, IIc
269/A05–0224	Upright thole	10	VII	B18 (Phase 2), MW6155	IVb



Illus 216 Boat timbers, tholes and oarport cover.

Claw tholes are a common feature of early northern European boats, and have survived in Scandinavia into modern times (Faerøyvik and Faerøyvik 1979, provides numerous examples). One survived as a sand impression on the Sutton Hoo ship (Evans 1975, Figure 308), while others have been identified on the fourth-century Nydam ship (Christensen 1972, 164), and on the small *faering* found with the ninth century Gokstad ship (Brøgger and Shetelig 1971, 43).

Oarport cover (Illus 216)

This piece, recovered from a late 13th-century midden, consists of a disc of wood 10mm thick and 135mm in diameter which has a triangular appendage extending 70mm on one side. A 15mm hole has been drilled 20mm from the edge, at a point 90° from the appendage. It seems probable that this object is an oarport cover of the kind fitted to the Gokstad and Oseberg Viking ships (Christensen 1971, 127 and Fig 25). Such devices were intended to keep the oarports weatherproof when not in use. They were mounted on pivots inside the hull so that they could be swung clear when the ports needed

to be open, and were equipped with an arrangement whereby they could be secured in whichever position was required. The triangular appendage on the Perth example presumably fulfilled this function and the two small notches 20mm from its point were no doubt intended for a fixing loop.

The use of such a cover implies a vessel with a greater freeboard than one whose oars were operated from tholes set atop the gunwale. The Gokstad ship, for instance, has two runs of planking above the strake which carries its oarports. This object is therefore a relic of what was probably a substantial sea-going ship, propelled primarily by sail. It may not have been dissimilar to the well known sailing galley on the tomb of Alexander MacLeod at Rodel in Harris, which has 17 oarports on each side and was probably therefore some 24m long (Steer and Bannerman 1977, 180–2). The Rodel tomb was set up in 1528, and Dr Steer argues from the amount of carefully observed technical detail which the boat carving presents that it was a type in wide current use, and not simply an heraldic convention.

Boat timbers: oarport cover.

<i>Cat/Accession</i>	<i>Object type</i>	<i>Area</i>	<i>Rig</i>	<i>Feature</i>	<i>Phase</i>
South Sector					
354/A6476	Oarport cover	4	V & VI	M1.4b	IVb–IVcc