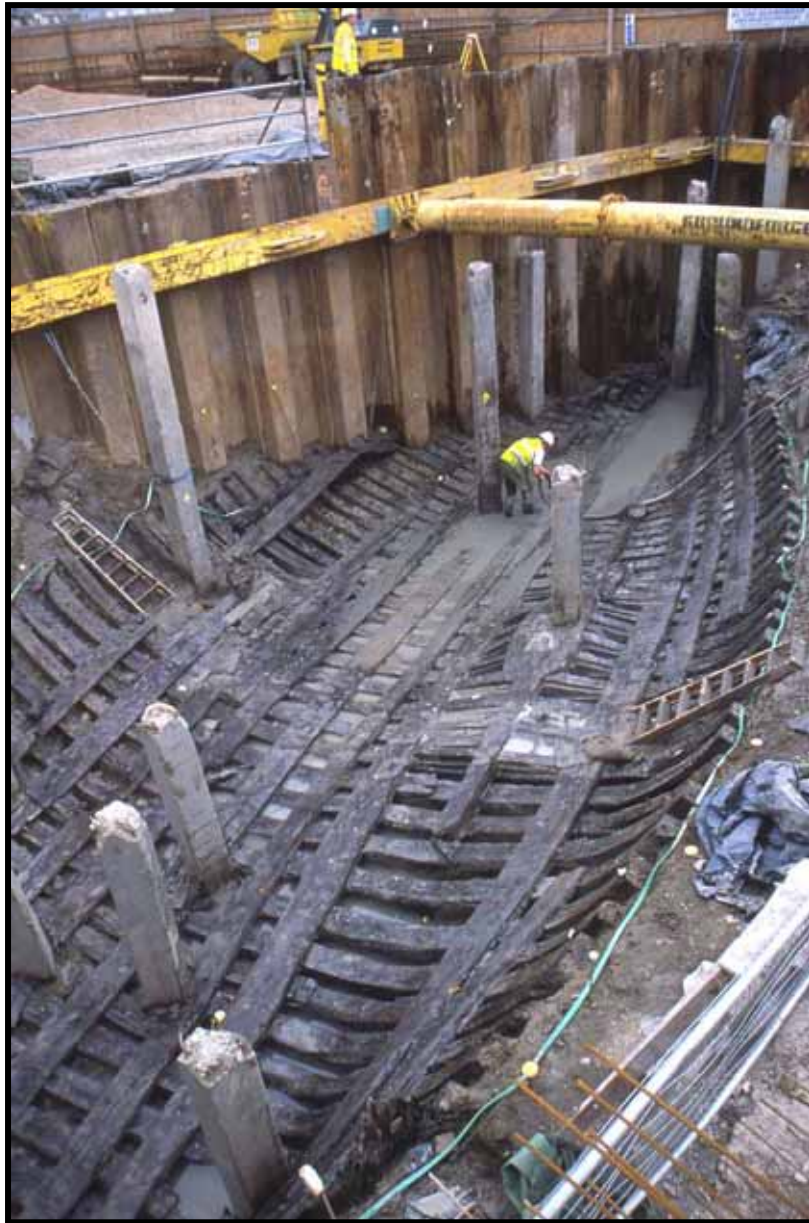


Newport Medieval Ship Project

Specialist Report:

CASKS I



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The Newport Ship Project

Introduction

In 2002, during the construction of the Riverfront Theatre, on the banks of the River Usk in Newport, South Wales, an archaeological find of great significance was unearthed. In the summer of that year, while undertaking the excavations for the theatre's orchestra pit, the well-preserved remains of a 15th century clinker built merchant vessel were discovered.

The site, which was surrounded by a cofferdam, was being monitored by the Glamorgan Gwent Archaeological Trust at the time of discovery. The ship lay in what is locally known as a pill or small inlet, with its stern closest to the river and its bow facing into the inlet. The timbers were covered in thick alluvial mud, which created an ideal anaerobic environment for successful preservation. Seventeen strakes of planking remained on the port side and thirty-five on the starboard side of the ship. The vessel was approximately 30m in length.

A silver French coin was found purposely inserted into the keel of the vessel, dating the ship to after May 1447. Dendrochronological research has shown the hull planking to be from the Basque country and after 1449 in date.

After a much publicised 'Save Our Ship' campaign, it was decided that the ship would not be recorded and discarded but excavated with the aim to conserve. The riders, stringers, braces, mast step, frames and overlapping clinker planks and keel were dismantled one by one and lifted. Almost 2000 ship components as well as hundreds of artefacts were excavated.

This report examines and lists the cask components recovered during the Newport Medieval Ship excavation.



Context: S20.6B/S20.7, F52/F53

Component: Stave

Cask type: Unknown due to damage

Species: Oak

Dimensions: 34.5cm x 8.5cm x 2 cm

Description: Small nail hole where cowtag was attached. Part of stave, broken along its length - full width unknown. Wide croze - 8 mm wide, 6 mm deep. Howel and chamfered end. Opposite end is damaged. Chamfer is 1.5 cm wide and steep. Very wide croze. 25 rings

Newport Medieval Ship Cask Component Catalogue		Cowtag: 612
Context: S20.6B/S20.7, F52/F53	Description: Small nail hole where cowtag was attached. Part of stave, broken along its length - full width unknown. Wide croze - 8 mm wide, 6 mm deep. Howel and chamfered end. Opposite end is damaged. Chamfer is 1.5 cm wide and steep. Very wide croze. 25 rings	
Component: Stave		
Cask type: Unknown due to damage		
Species: Oak		
Dimensions: 34.5cm x 8.5cm x 2 cm		



Context: Unknown

Component: Cant

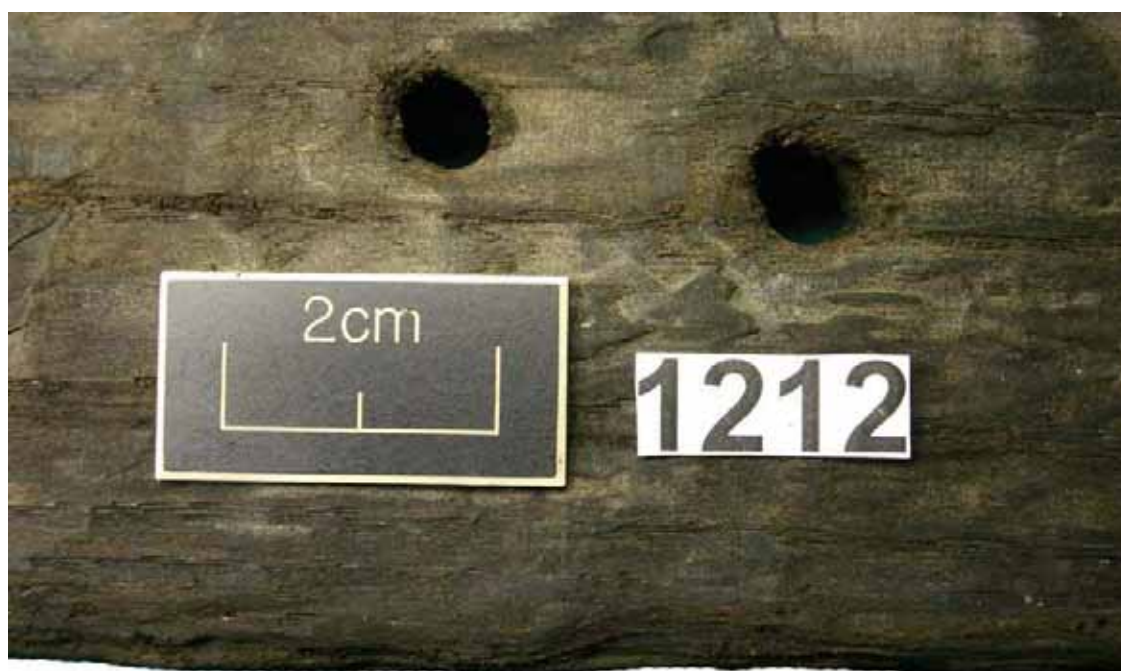
Cask Type: Unknown

Species:

Dimensions 22cm long x 10.5 cm wide x 2.2 cm

Description: Barrel head fragment. Two holes - possibly fasteners? (Also 2 small nail holes from cowtag - now removed - visible on reverse). Half a cant. Good condition. Clearly cut at one end. 2cm wide chamfer. 22cm long x 10.5 cm wide x 2.2 cm thick. Chamfered along curved edge on inner surface. 12 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1125
Context: Unknown	Description: Barrel head fragment. Two holes - possibly fasteners? (Also 2 small nail holes from cowtag - now removed - visible on reverse). Half a cant. Good condition. Clearly cut at one end. 2cm wide chamfer. 22cm long x 10.5 cm wide x 2.2 cm thick. Chamfered along curved edge on inner surface. 12 rings.	
Component: Cant		
Cask Type: Unknown		
Species:		
Dimensions22cm long x 10.5 cm wide x 2.2 cm		



Context: Unknown

Component: Head

Cask Type: Unknown

Species: Oak

Dimensions: 345mm x 155mm Two larger dowels have a radius of 13 mm. The two smaller dowels have a diameter of 8mm.

Description: Four clear dowel holes. Small axe mark on outboard face - Full length unknown. Radially split. Chamfered at one end, cut in antiquity on the other. 20 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1212
Context: Unknown	Description: Four clear dowel holes. Small axe mark on outboard face - Full length unknown. Radially split. Chamfered at one end, cut in antiquity on the other. 20 rings.	
Component: Head		
Cask Type: Unknown		
Species: Oak		
Dimensions: 345mm x 155mm Two larger dowels have a radius of 13 mm. The two smaller dowels have a diameter of 8mm.		

**1400****1400****Context: Unknown****Component: Cant****Cask Type: Unknown****Species: Oak****Dimensions: 38cm long x 9.3 cm wide x 1.5 cm**

Description: Section of barrel head. Lots of iron staining/ damage on inner and outer surface. (2 small holes from cowtag fastening - modern) chamfer on curved edge inner surface. Surface of piece is degraded. Some damage to curved edge. No visible tool marks or makers marks. 35 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1400
Context: Unknown	Description: Section of barrel head. Lots of iron staining/ damage on inner and outer surface. (2 small holes from cowtag fastening - modern) chamfer on curved edge inner surface. Surface of piece is degraded. Some damage to curved edge. No visible tool marks or makers marks. 35 rings.	
Component: Cant		
Cask Type: Unknown		
Species: Oak		
Dimensions: 38cm long x 9.3 cm wide x 1.5 cm		



Context:

Component: Possibly a cant

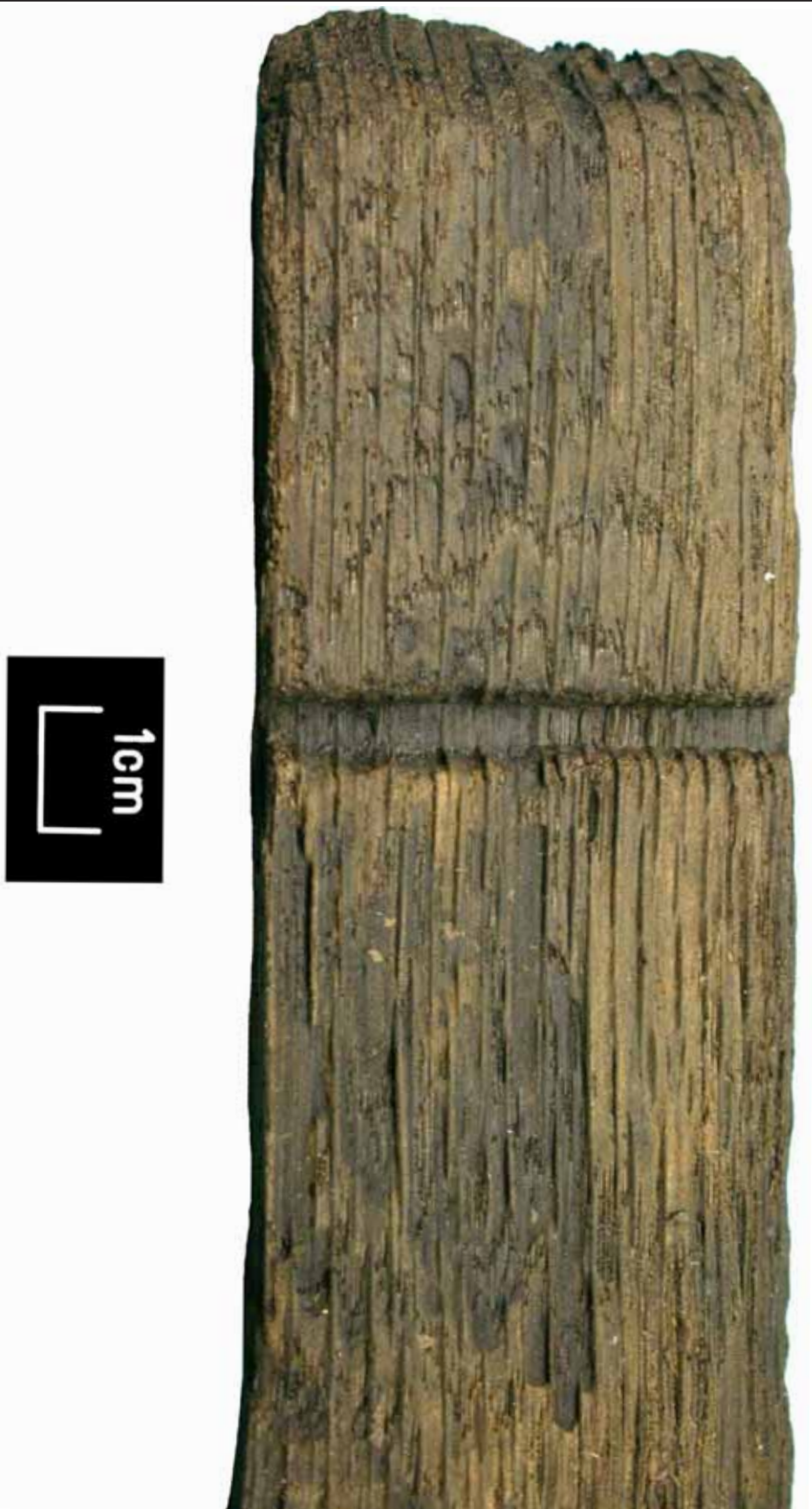
Cask Type: Unknown

Species: Oak

Dimensions: 35cm long x 12 cm wide x 1.5 cm thick.

Description: Surface is quite degraded. Full length unknown. Three nail holes, first, along straight edge, 1 cm diameter, is driven in at an angle. 2nd hole has some iron staining and is square in plan and is 7mm x 7mm. Third hole, most likely modern, doesn't penetrate piece completely and measures 2mm x 2mm some iron staining. 25 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1422
Context:	Description: Surface is quite degraded. Full length unknown. Three nail holes, first, along straight edge, 1 cm diameter, is driven in at an angle. 2nd hole has some iron staining and is square in plan and is 7mm x 7mm. Third hole, most likely modern, doesn't penetrate piece completely and measures 2mm x 2mm some iron staining. 25 rings.	
Component: Possibly a cant		
Cask Type: Unknown		
Species: Oak		
Dimensions: 35cm long x 12 cm wide x 1.5 cm thick.		



Context: Unknown

Component: Stave

Cask Type: Possibly open

Species: Oak

Dimensions: 640mm long x approx 70mm wide

Description: Groove present and both ends bevelled, with howel cut at both ends. Croze measures 5mm wide and 4 mm deep. Width of stave unknown. Chime is chamfered. It appears to have been chamfered on the outer surface indicating it was not a closed barrel, but may have been an open cask. 30 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1425
Context: Unknown		Description: Groove present and both ends bevelled, with howel cut at both ends. Croze measures 5mm wide and 4 mm deep. Width of stave unknown. Chime is chamfered. It appears to have been chamfered on the outer surface indicating it was not a closed barrel, but may have been an open cask. 30 rings.
Component: Stave		
Cask Type: Possibly open		
Species: Oak		
Dimensions: 640mm long x approx 70mm wide		



Context: Unknown

Component: Stave or head

Cask Type: Unknown

Species: Oak

Dimensions: 465mm long x 105mm wide x 12mm thick.

Description: Chamfered at one end, damaged at the other end. Stop mark (possibly axe) visible on chamfer. Merchant mark, consisting of compass drawn arc with adjoining line. Second, slightly arced, line running along the width of the piece. 30 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1426
Context: Unknown		Description: Chamfered at one end, damaged at the other end. Stop mark (possibly axe) visible on chamfer. Merchant mark, consisting of compass drawn arc with adjoining line. Second, slightly arced, line running along the width of the piece. 30 rings.
Component: Stave or head		
Cask Type: Unknown		
Species: Oak		
Dimensions: 465mm long x 105mm wide x 12mm thick.		



Context: Unknown

Component: Head

Cask Type: Unknown

Species:

Dimensions: 55 cm long x 14.2 cm wide x 2.4 cm thick.

Description: Head component of barrel. Cowtag has been nailed into the surface. Bevelled scarfed ends, one end slightly damaged. Outer surface has two inscribed lines running across width. very good condition. Some small tool marks. 30 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1440
Context: Unknown		Description: Head component of barrel. Cowtag has been nailed into the surface. Bevelled scarfed ends, one end slightly damaged. Outer surface has two inscribed lines running across width. very good condition. Some small tool marks. 30 rings.
Component: Head		
Cask Type: Unknown		
Species:		
Dimensions: 55 cm long x 14.2 cm wide x 2.4 cm thick.		



Context: Unknown

Component: Stave

Cask Type: Closed

Species: Oak

Dimensions: 1185mm long x 120mm wide x 15mm thick.

Description: Both ends are chamfered. Howels present. 4 dowels, 2 at each end, 1 is only partial. 1 dowel is in situ. 8mm approx. diameter. 2 crozes on each end, the wider is 8 mm wide at one end and 9mm at the other. Inner surface is in good condition-tool marks visible throughout. Two plug holes in belly 9mm in diameter. One of chimes is cracked. 50 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1689
Context: Unknown		<p>Description: Both ends are chamfered. Howels present. 4 dowels, 2 at each end, 1 is only partial. 1 dowel is in situ. 8mm approx. diameter. 2 crozes on each end, the wider is 8 mm wide at one end and 9mm at the other. Inner surface is in good condition-tool marks visible throughout. Two plug holes in belly 9mm in diameter. One of chimes is cracked. 50 rings.</p>
Component: Stave		
Cask Type: Closed		
Species: Oak		
Dimensions: 1185mm long x 120mm wide x 15mm thick.		



Context: c.F40 overlying 1153- stbd.

Component: Stave

Cask Type: Closed

Species: Oak

Dimensions: 1205mm long x 110mm wide x 12mm thick.

Description: Barrel stave, excellent condition. Both chimes present, both ends chamfered. Crozes vary in width, 4mm at widest. Howels present at both ends. No plugs or dowels. One possible inscribed line on outer surface, widest end, running across the stave. A series of faint tool scratches at belly of stave on outer surface. 50 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1690
Context: c.F40 overlying 1153- stbd.		Description: Barrel stave, excellent condition. Both chimes present, both ends chamfered. Crozes vary in width, 4mm at widest. Howels present at both ends. No plugs or dowels. One possible inscribed line on outer surface, widest end, running across the stave. A series of faint tool scratches at belly of stave on outer surface. 50 rings.
Component: Stave		
Cask Type: Closed		
Species: Oak		
Dimensions: 1205mm long x 110mm wide x 12mm thick.		



Context: Underlying 1426

Component: Stave

Cask Type: Closed

Species: Oak

Dimensions: 1180mm long x 90mm wide x 15mm thick.

Description: Split lengthways. Long barrel stave, broken along length. One chime is broken off at the croze. At the opposite end the croze measures 5mm wide and is 'v' shaped in section. Howel, croze and chamfered end are in good condition. Possible adze marks on inner surface. No merchants marks. 30 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1691
Context: Underlying 1426		Description: Split lengthways. Long barrel stave, broken along length. One chime is broken of at the croze. At the opposite end the croze measures 5mm wide and is 'v' shaped in section. Howel, croze and chamfered end are in good condition. Possible adze marks on inner surface. No merchants marks. 30 rings.
Component: Stave		
Cask Type: Closed		
Species: Oak		
Dimensions: 1180mm long x 90mm wide x 15mm thick.		



Context: c.F40 overlying 1153- stbd

Component: Stave

Cask Type: Open

Species: Oak

Dimensions: 1060mm long x 120mm wide x 10mm thick.

Description: Good condition. Some split damage on inner surface. Howel and groove on one end. Croze is approx. 8mm wide. Howel is 6cm wide from croze. Opposite end appears to have been cut but not chamfered. Three plugs, still in situ, 5 mm diameter. One has slightly protruding head on outer surface with a diameter of 9mm. 45 rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1692
Context: c.F40 overlying 1153- stbd		Description: Good condition. Some split damage on inner surface. Howel and groove on one end. Croze is approx. 8mm wide. Howel is 6cm wide from croze. Opposite end appears to have been cut but not chamfered. Three plugs, still in situ, 5 mm diameter. One has slightly protruding head on outer surface with a diameter of 9mm. 45 rings.
Component: Stave		
Cask Type: Open		
Species: Oak		
Dimensions: 1060mm long x 120mm wide x 10mm thick.		



Context: Underlying 1162

Component: Stave

Cask Type: Possibly open

Species: Oak

Dimensions: 1205mm long x 105mm wide.

Description: Good condition. One end has a chamfered chime, a 4mm croze & a howel. The opposite end has no chime, but does have a howel. It appears to have either been broken at the croze in antiquity or else this stave is from an open vessel. There is a bend at the belly, & a slight twist along its length. One possible inscribed line, running across the width.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1693
Context: Underlying 1162		Description: Good condition. One end has a chamfered chime, a 4mm croze & a howel. The opposite end has no chime, but does have a howel. It appears to have either been broken at the croze in antiquity or else this stave is from an open vessel. There is a bend at the belly, & a slight twist along its length. One possible inscribed line, running across the width.
Component: Stave		
Cask Type: Possibly open		
Species: Oak		
Dimensions: 1205mm long x 105mm wide.		



Context: Unknown

Component: Stave

Cask Type: Closed

Species: Oak

Dimensions: 1230mm long x 60mm wide x 15mm thick.

Description: Split along its length. Both chimes present. Croze is approx. 3mm wide. It appears one end is chamfered and the other is not, however both ends are slightly eroded. 4 plug holes, two still in situ, two partial holes. Diameter of approx 7mm. It appears both ends have howels, although faint. No merchant marks. Possible axe marks on inner surface.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1694
Context: Unknown	Description: Split along its length. Both chimes present. Croze is approx. 3mm wide. It appears one end is chamfered and the other is not, however both ends are slightly eroded. 4 plug holes, two still in situ, two partial holes. Diameter of approx 7mm. It appears both ends have howels, although faint. No merchant marks. Possible axe marks on inner surface.	
Component: Stave		
Cask Type: Closed		
Species: Oak		
Dimensions: 1230mm long x 60mm wide x 15mm thick.		



Context: Unknown

Component: Stave

Cask Type: Unknown

Species: Oak

Dimensions: 1150mm long x 120mm wide x 15mm thick.

Description: Poor condition. Damaged at both ends, full length unclear. Clean break at croze. Other end has only part of howel present. One dowel. Large crack in belly of stave.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1695
Context: Unknown		Description: Poor condition. Damaged at both ends, full length unclear. Clean break at croze. Other end has only part of howel present. One dowel. Large crack in belly of stave.
Component: Stave		
Cask Type: Unknown		
Species: Oak		
Dimensions: 1150mm long x 120mm wide x 15mm thick.		



Context: Unknown

Component: Stave

Cask Type: Open

Species: Oak

Dimensions: 1150mm long x 120mm wide x 15mm thick. Dowel hole - 12 mm diameter. Croze is 5mm wide, and 5mm deep, and howel is 60mm x 90mm.

Description: Good condition. End A has chamfered chime with one dowel hole - 12 mm diameter. Croze is 5mm wide, and approx. 5mm deep, and a howel 60mm x 90mm. End B has no chime, the inner surface has been chamfered at the end. This lack of croze may indicate that this stave is from an open cask.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1785
Context: Unknown		Description: Good condition. End A has chamfered chime with one dowel hole - 12 mm diameter. Croze is 5mm wide, and approx. 5mm deep, and a howel 60mm x 90mm. End B has no chime, the inner surface has been chamfered at the end. This lack of croze may indicate that this stave is from an open cask.
Component: Stave		
Cask Type: Open		
Species: Oak		
Dimensions: 1150mm long x 120mm wide x 15mm thick. Dowel hole - 12 mm diameter. Croze is 5mm wide, and 5mm deep, and howel is 60mm x 90mm.		



Context: Unknown

Component: Cant

Cask Type: Unknown

Species: Oak

Dimensions:

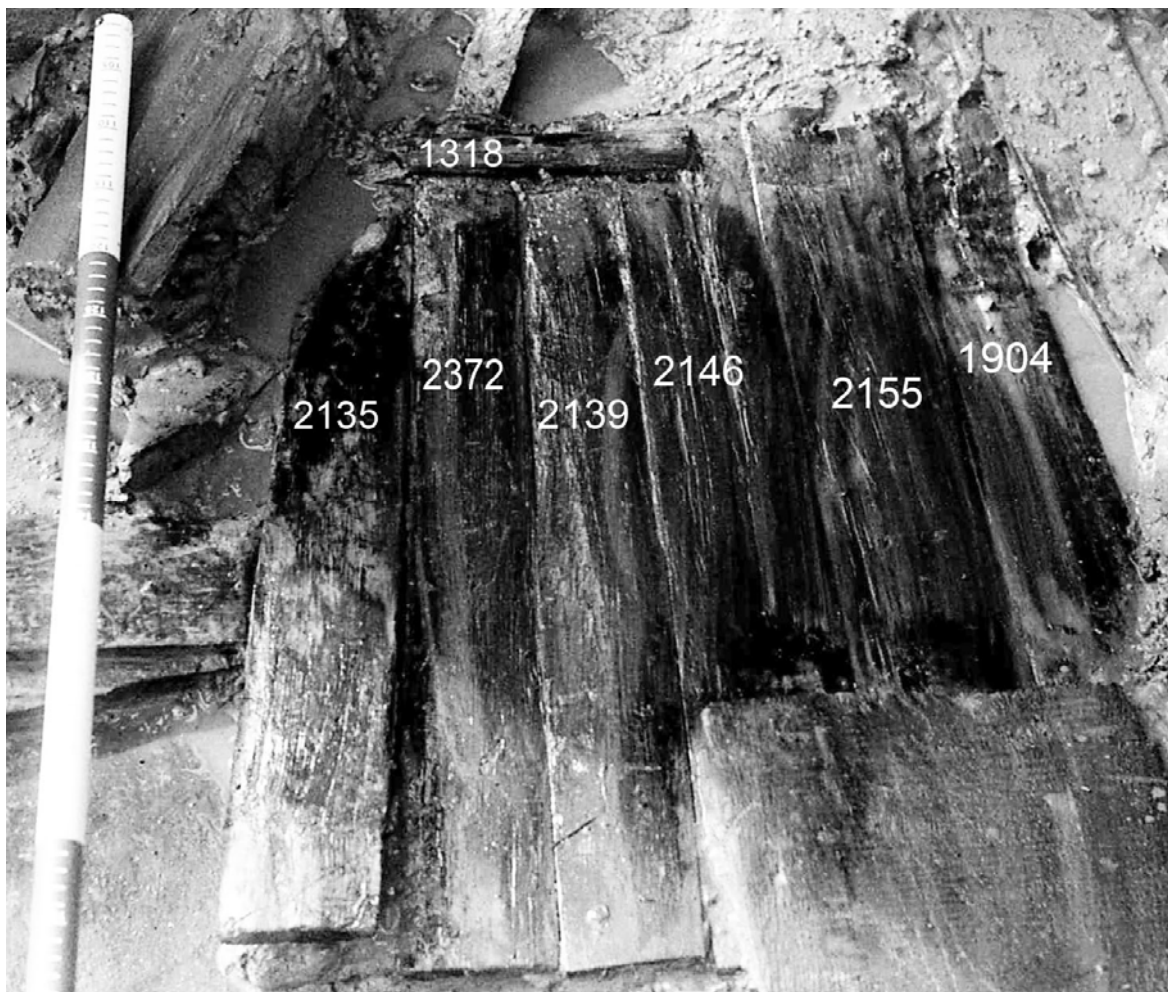
Description: Excellent condition. Chamfered along curved edge on inner surface. No chamfer on outer surface. Some dark staining on inner surface - possibly due to storage conditions. No plugs or inscribed lines.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1786
Context: Unknown		Description: Excellent condition. Chamfered along curved edge on inner surface. No chamfer on outer surface. Some dark staining on inner surface - possibly due to storage conditions. No plugs or inscribed lines.
Component: Cant		
Cask Type: Unknown		
Species: Oak		
Dimensions:		

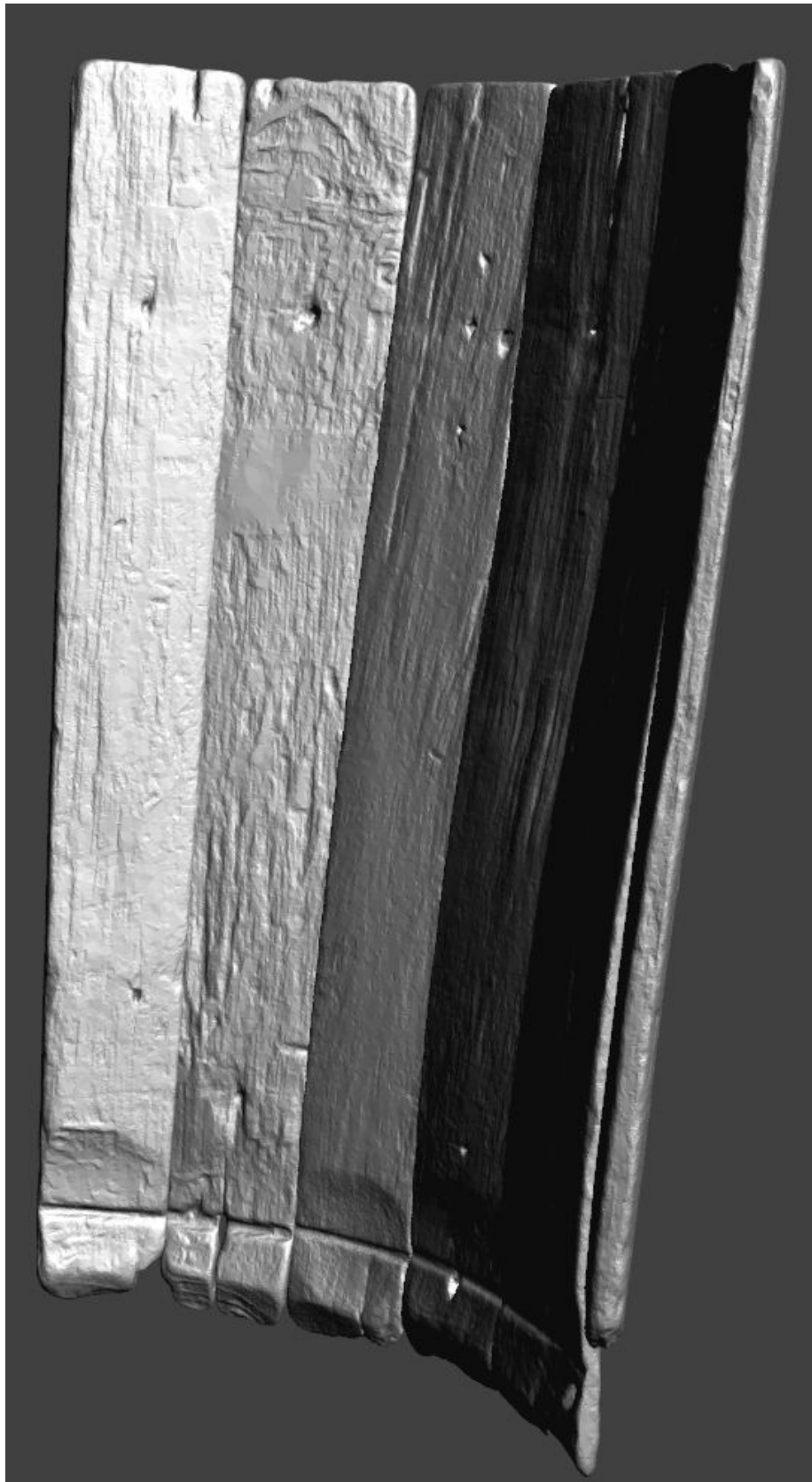
Cask Component Notes

The remains of stave built casks were found on the Newport Ship. These remains consisted of 87 components which can be broken into three categories- head pieces, staves and hoop fragments. 55 staves were found on board, 26 head pieces and 6 hoop fragments.

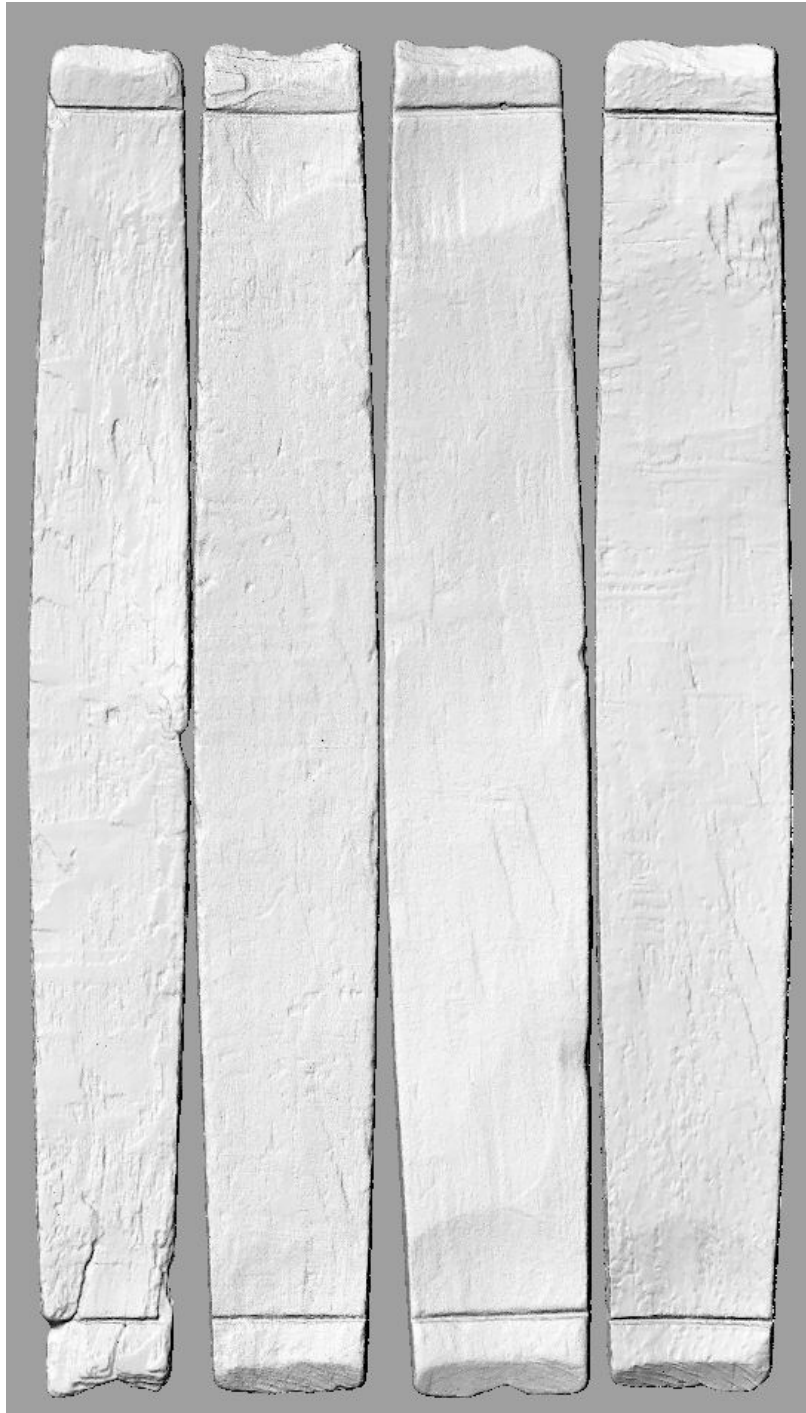
One group of six staves (context 151) were found together in situ and are undoubtedly from the same cask. No head pieces were associated with context 151. Staves numbered CT2139, CT2372, CT2135, CT1904, CT2155 and CT2146 and hoop fragment CT1318 are part of this group and are seen photographed together on site (below). This cask would have been open at one end and was 570mm from croze groove to top. An open cask like this may have been used on board the vessel to store dry goods or possibly was used as a bucket.



It was possible, after laser scanning each of context 151's staves individually, to digitally reconstruct the section of the barrel as was found in situ. Seen below is a screen capture of a 3d pdf of context 151.



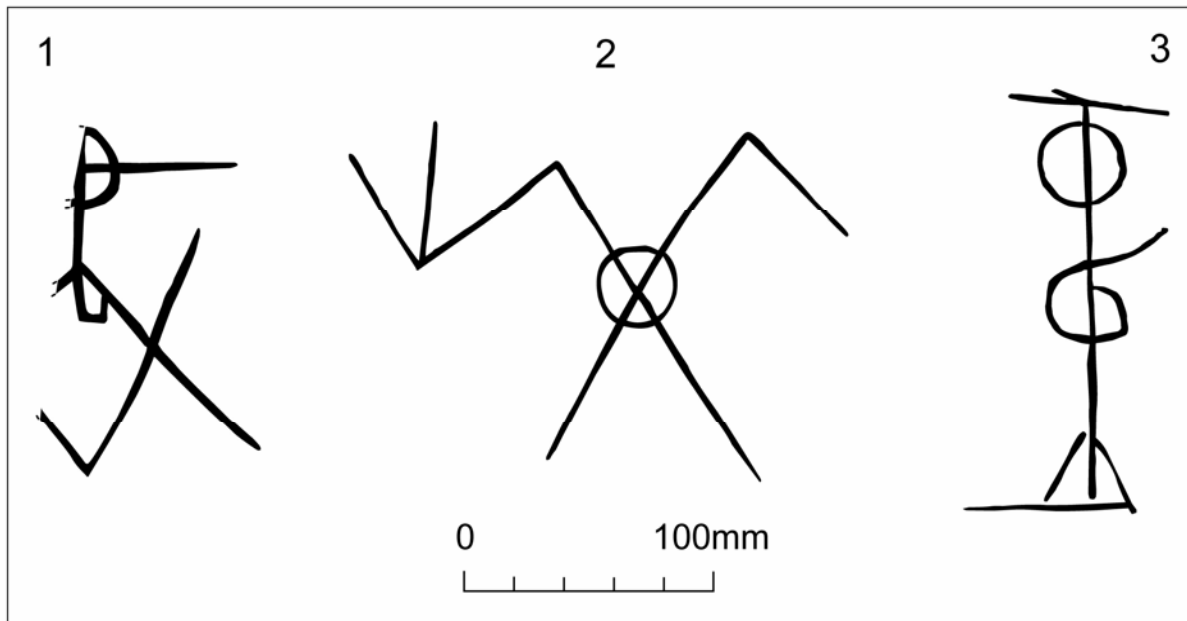
A second group of staves, CT2113, CT2143, CT2148 and 1951 are quite possibly associated with one another. Seen below are the staves side by side (not in their original order). The presence of a croze groove at either end, unlike context 151, indicates this cask was constructed to be sealed at both ends with a head.



Other than the two groups mentioned above, the staves do not appear to match in length. This indicates the staves may have been waste from disused casks of varying sizes.

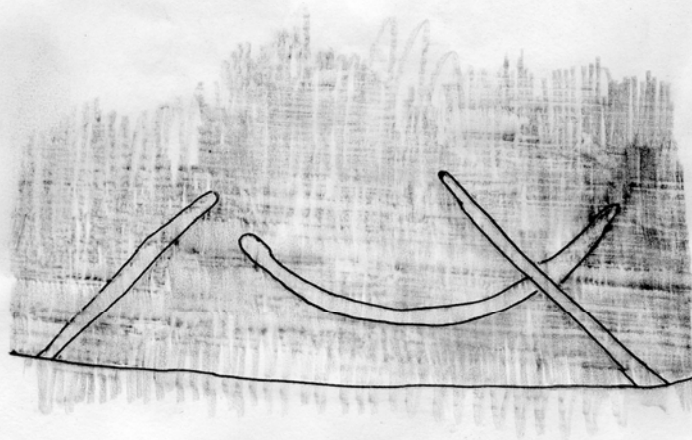
Merchant Marks found on Newport Ship Timbers

1. Cow 2369
2. Cow 1555 (Found on non-cask artefact (the 'door'))
3. Cow 2137 (Cask Head)



4. Cow 2136

TRACING OF MAKER'S MARKS ON INSIDE OF BARREL STAVE 21.
1:1



CASK NOTES from Meeting with Ken Kilby, 12 October 2011

Cow 1689: Deliberate Grooves – possibly fixing a mistake/making cask volume smaller

Cow 1949: Latch/Lid

Cow 2145: Probably part of a dry cask

Cow 2137: Wet cask

Cow 2251: Holes to put wood/rope through to stiffen/strengthen/reinforce cask. A hole put outside or above the croze was to reinforce the head.

Cow 2238 and 1839: same vessel?

Cow 1693: Odd stave, wider at one end, possibly broken off at croze.

Cow 1813: Numerous holes could have been caused by wood worm and then drilled out and plugged by carpenter/cooper.

Cow 1786: Bevelled on edge, probably to reduce the size of the cask. Head will sink further in, reducing the capacity.

Cow 1951, 2148, 2113, 2143 may be part of an 18 gallon cask

General Observations:

Crozes seem to be made with a one handed draw knife (jigger)

A chine generally indicates a wet cask

> wet cask | dry cask

Thin staved vessels generally hold dry goods

In water casks, holes were sometimes drilled to get above the sediment.

In London certain casks sizes were standardised (not sure when)

Memel Oak preferred for cask construction (from Russian port of Memel)

English oak tended to be knotty and short grained.

Probably hazel hoops, nailed on dry casks

Flags/River Rushes were placed between cants in heads....swelled immediately when wet

For Newport Ship, also need to look at possibility of local cooperage waste.

To Note

Staves

- CT1951, CT2113, CT2143 and CT2148 appear to match in size and may be part of the same barrel.
- CT2135, CT2139, CT2146, CT2155, CT2372 and CT1904 were found together in situ have been successfully digitally reconstructed. (Context 151) Photo of staves together in ground is available. Digital reconstruction has been created. Open at one end, 640mm in height.
- CT1426, CT2136 and CT2210 have maker's marks.

Heads

- 12 cants, 10 middle pieces.
- CT1400 & CT1440 appear to fit side by side.
- CT1846 & CT1949 may be from the same head.
- CT2157 & CT2203 may be from the same head.
- CT2137 has a maker's mark.