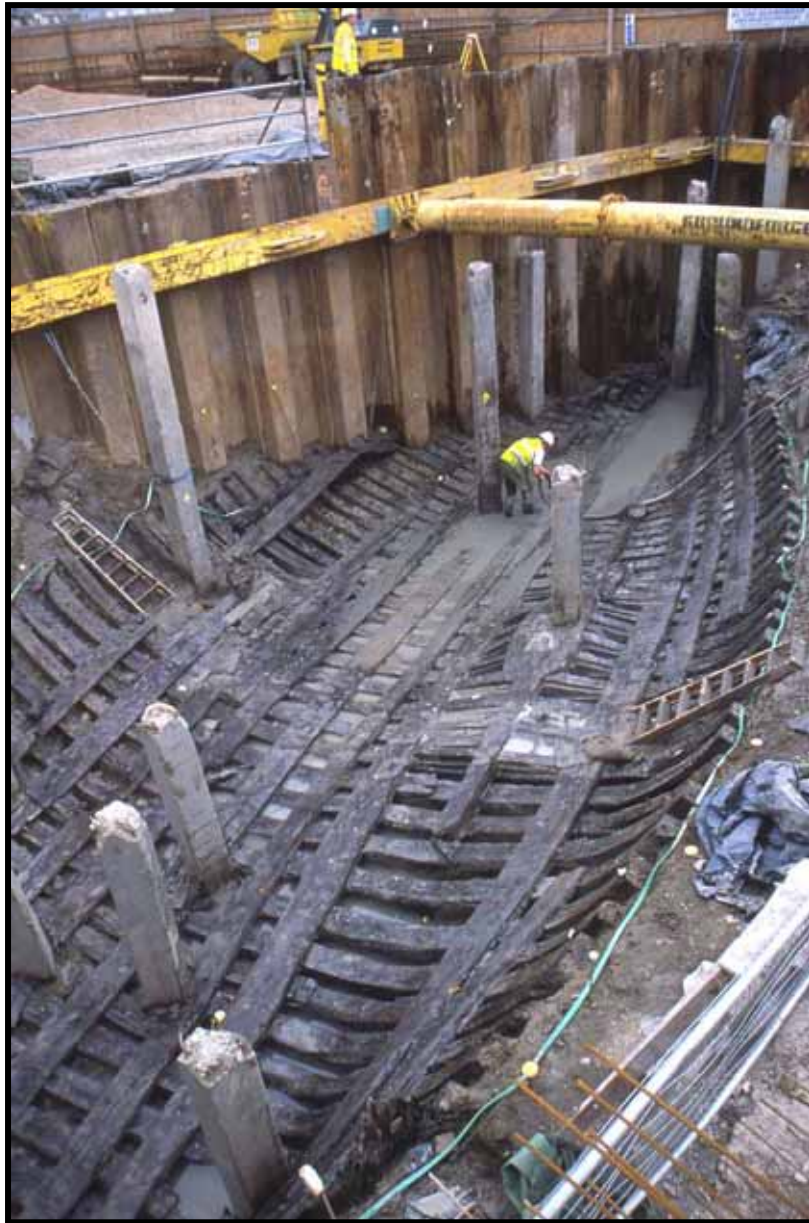


Newport Medieval Ship Project

Specialist Report:

CASKS IV



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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: Unknown

Component: Stave

Cask Type: Open

Species: Oak

Dimensions: 645mm long x 74mm wide x 12 mm thick.

Description: Tapered, narrowest end is 68mm wide, widest is 77 mm. The narrow end has a howel, & a 5mm wide croze. The chime has an indentation of the wood, and a chamfered end. The stave has five holes at the wide end, two still retain wooden pegs. Stop marks throughout. It is in good condition, some iron staining. on both surfaces. 23 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2139
Context: Unknown	<p>Description: Tapered, narrowest end is 68mm wide, widest is 77 mm. The narrow end has a howel, & a 5mm wide croze. The chime has an indentation of the wood, and a chamfered end. The stave has five holes at the wide end, two still retain wooden pegs. Stop marks throughout. It is in good condition, some iron staining. on both surfaces. 23 tree rings.</p>	
Component: Stave		
Cask Type: Open		
Species: Oak		
Dimensions: 645mm long x 74mm wide x 12 mm thick.		



Context: Unknown

Component: Stave

Cask Type: Closed

Species: Oak

Dimensions: 710mm long x 110mm wide x 10mm thick.

Description: Excellent condition. both grooves present. Crozes are 5mm wide. Pronounced howels at both ends. Both ends are chamfered. Axe marks visible on inner surface. Hole through one of the grooves, approx. 2mm diameter, appears to have been keeping base or lid in place. Evidence for splitting on outer surface. No merchant marks. 80 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2143
Context: Unknown		Description: Excellent condition. both grooves present. Crozes are 5mm wide. Pronounced howels at both ends. Both ends are chamfered. Axe marks visible on inner surface. Hole through one of the grooves, approx. 2mm diameter, appears to have been keeping base or lid in place. Evidence for splitting on outer surface. No merchant marks. 80 tree rings.
Component: Stave		
Cask Type: Closed		
Species: Oak		
Dimensions: 710mm long x 110mm wide x 10mm thick.		



Context: Unknown

Component: Possible cant

Cask Type: Unknown

Species:

Dimensions: 540mm long x 156mm wide x 25mm thick.

Description: Very good condition. One large dowel/plug hole in centre with diameter of 35mm. Small lines at plug hole possibly marking spoyt for hole. No chamfered edges. Possible axe marks. 10 inscribed lines running across piece.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2145
Context: Unknown	Description: Very good condition. One large dowel/plug hole in centre with diameter of 35mm. Small lines at plug hole possibly marking spoyt for hole. No chamfered edges. Possible axe marks. 10 inscribed lines running across piece.	
Component: Possible cant		
Cask Type: Unknown		
Species:		
Dimensions: 540mm long x 156mm wide x 25mm thick.		



Context: 151

Component: Stave

Cask Type: open

Species: Oak

Dimensions: 635mm long x 105mm wide x 15mm thick.

Description: Very good condition. Chime & croze on one end only. Wooden peg in crack at opposite end to chime - 7 mm diameter, in situ. 3 other holes, 2 in body 1 in the chime. Iron staining around all holes. Howel is present. Croze is 6mm wide. Nail hole approx. 5mm diameter cuts across the croze. Some tool marks, possibly an axe. 20 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2146
Context: 151		Description: Very good condition. Chime & croze on one end only. Wooden peg in crack at opposite end to chime - 7 mm diameter, in situ. 3 other holes, 2 in body 1 in the chime. Iron staining around all holes. Howel is present. Croze is 6mm wide. Nail hole approx. 5mm diameter cuts across the croze. Some tool marks, possibly an axe. 20 tree rings.
Component: Stave		
Cask Type: open		
Species: Oak		
Dimensions: 635mm long x 105mm wide x 15mm thick.		



Context: Unknown

Component: Stave

Cask Type: Closed

Species: Oak

Dimensions: 685mm long x 80mm wide x 10mm thick.

Description: Damage along sapwood edge. Both chimes present. Possible inscribed line on outer surface. Toolmarks, possibly an axe, visible on inner surface. One end is slightly damaged, chamfer is either not present, or not visible due to damage. Other end is chamfered. Howel exists on both sides of the croze. 35 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2147
Context: Unknown		Description: Damage along sapwood edge. Both chimes present. Possible inscribed line on outer surface. Toolmarks, possibly an axe, visible on inner surface. One end is slightly damaged, chamfer is either not present, or not visible due to damage. Other end is chamfered. Howel exists on both sides of the croze. 35 tree rings.
Component: Stave		
Cask Type: Closed		
Species: Oak		
Dimensions: 685mm long x 80mm wide x 10mm thick.		



Context: Unknown

Component: Stave

Cask Type: Closed

Species: Oak

Dimensions: 715mm long x 100mm wide x 10mm thick.

Description: Very good condition. Croze, 4mm wide + howel + chamfered ends at both ends of stave. Howels are shallow. No dowels or dowel holes present. Some black staining on outboard, possibly due to storage conditions. No makers/ merchant marks. Some tool marks visible on inner surface. 50 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2148
Context: Unknown	Description: Very good condition. Croze, 4mm wide + howel + chamfered ends at both ends of stave. Howels are shallow. No dowels or dowel holes present. Some black staining on outboard, possibly due to storage conditions. No makers/ merchant marks. Some tool marks visible on inner surface. 50 tree rings.	
Component: Stave		
Cask Type: Closed		
Species: Oak		
Dimensions: 715mm long x 100mm wide x 10mm thick.		



Context: Unknown

Component: Stave

Cask Type: Closed

Species: Oak

Dimensions: 720mm long x 129mm wide x 10mm thick.

Description: Both ends broken at croze. Shallow howels at both ends - cracked and slightly bent. Surface is slightly degraded, however inscribed lines remain on outer surface. These lines appear in no particular pattern and may have been made by scatching of a knife. Small hole from pin securing cowtag. 90 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2154
Context: Unknown		Description: Both ends broken at croze. Shallow howels at both ends - cracked and slightly bent. Surface is slightly degraded, however inscribed lines remain on outer surface. These lines appear in no particular pattern and may have been made by scatching of a knife. Small hole from pin securing cowtag. 90 tree rings.
Component: Stave		
Cask Type: Closed		
Species: Oak		
Dimensions: 720mm long x 129mm wide x 10mm thick.		



Context: 151

Component: Stave

Cask Type: Open

Species: Oak

Dimensions: 630mm long x 125mm wide x 12mm thick.

Description: Good condition. Chime at one end, only. Split damage on inner surface. Tool marks, possibly axe, visible on inner surface. Hole, diameter 10mm, located between croze and chamfer. Two iron nails still in situ, 2mm x 2mm. Two possible hoop impressions on outer surface. Sapwood is sandwiched between heart wood, visible at the chime. 60 tree rings

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2155
Context: 151	<p>Description: Good condition. Chime at one end, only. Split damage on inner surface. Tool marks, possibly axe, visible on inner surface. Hole, diameter 10mm, located between croze and chamfer. Two iron nails still in situ, 2mm x 2mm. Two possible hoop impressions on outer surface. Sapwood is sandwiched between heart wood, visible at the chime. 60 tree rings</p>	
Component: Stave		
Cask Type: Open		
Species: Oak		
Dimensions: 630mm long x 125mm wide x 12mm thick.		



Context: Unknown

Component: Head

Cask Type: Unknown

Species: Oak

Dimensions: 635mm long x 95mm wide x 20mm thick.

Description: Chamfered at both ends on inner surface only. Some split damage visible, stop marks visible, possibly an axe, on both inner and outer surfaces. Some possibly deliberate marks on inner surface. Varies in thickness. Some dark staining on outer surface - may be due to storage conditions i.e. wrapped in plastic. 40 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2157
Context: Unknown		Description: Chamfered at both ends on inner surface only. Some split damage visible, stop marks visible, possibly an axe, on both inner and outer surfaces. Some possibly deliberate marks on inner surface. Varies in thickness. Some dark staining on outer surface - may be due to storage conditions i.e. wrapped in plastic. 40 tree rings.
Component: Head		
Cask Type: Unknown		
Species: Oak		
Dimensions: 635mm long x 95mm wide x 20mm thick.		



Context: Unknown

Component: Head

Cask Type: Unknown

Species: Oak

Dimensions: 648mm long x 85mm wide x 8mm thick.

Description: Piece is tapered, measuring 90mm at widest end & 68mm at narrowest. Chamfered at both ends. One dowel hole, 5mm in diameter. Dowel no longer in situ. Some damage along one length edge as well as some original split damage. Small patches of iron staining. Wood also has rebate in one long edge, which looks to have been deliberately cut. 40 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2158
Context: Unknown	<p>Description: Piece is tapered, measuring 90mm at widest end & 68mm at narrowest. Chamfered at both ends. One dowel hole, 5mm in diameter. Dowel no longer in situ. Some damage along one length edge as well as some original split damage. Small patches of iron staining. Wood also has rebate in one long edge, which looks to have been deliberately cut. 40 tree rings.</p>	
Component: Head		
Cask Type: Unknown		
Species: Oak		
Dimensions: 648mm long x 85mm wide x 8mm thick.		



Context: cF40's

Component: Stave

Cask Type: Open

Species: Oak

Dimensions: 593mm long x 85mm wide x 25mm thick.

Description: Inner surface - one end has howel. Croze groove is 4mm wide and 4mm deep. Full width of stave is unknown due to damage. Chime is chamfered. Opposite end doesn't have a croze, howel or chime. Outer surface has chamfered end with clear stop marks. Some dark staining on stave, most likely due to present tank conditions. 25 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2162
Context: cF40's		Description: Inner surface - one end has howel. Croze groove is 4mm wide and 4mm deep. Full width of stave is unknown due to damage. Chime is chamfered. Opposite end doesn't have a croze, howel or chime. Outer surface has chamfered end with clear stop marks. Some dark staining on stave, most likely due to present tank conditions. 25 tree rings.
Component: Stave		
Cask Type: Open		
Species: Oak		
Dimensions: 593mm long x 85mm wide x 25mm thick.		



Context: Unknown

Component: Hoop

Cask Type: Unknown

Species:

Dimensions: 75mm long x 20mm wide x 9mm thick.

Description: Barrel hoop. 3 tree rings.



Context: 151

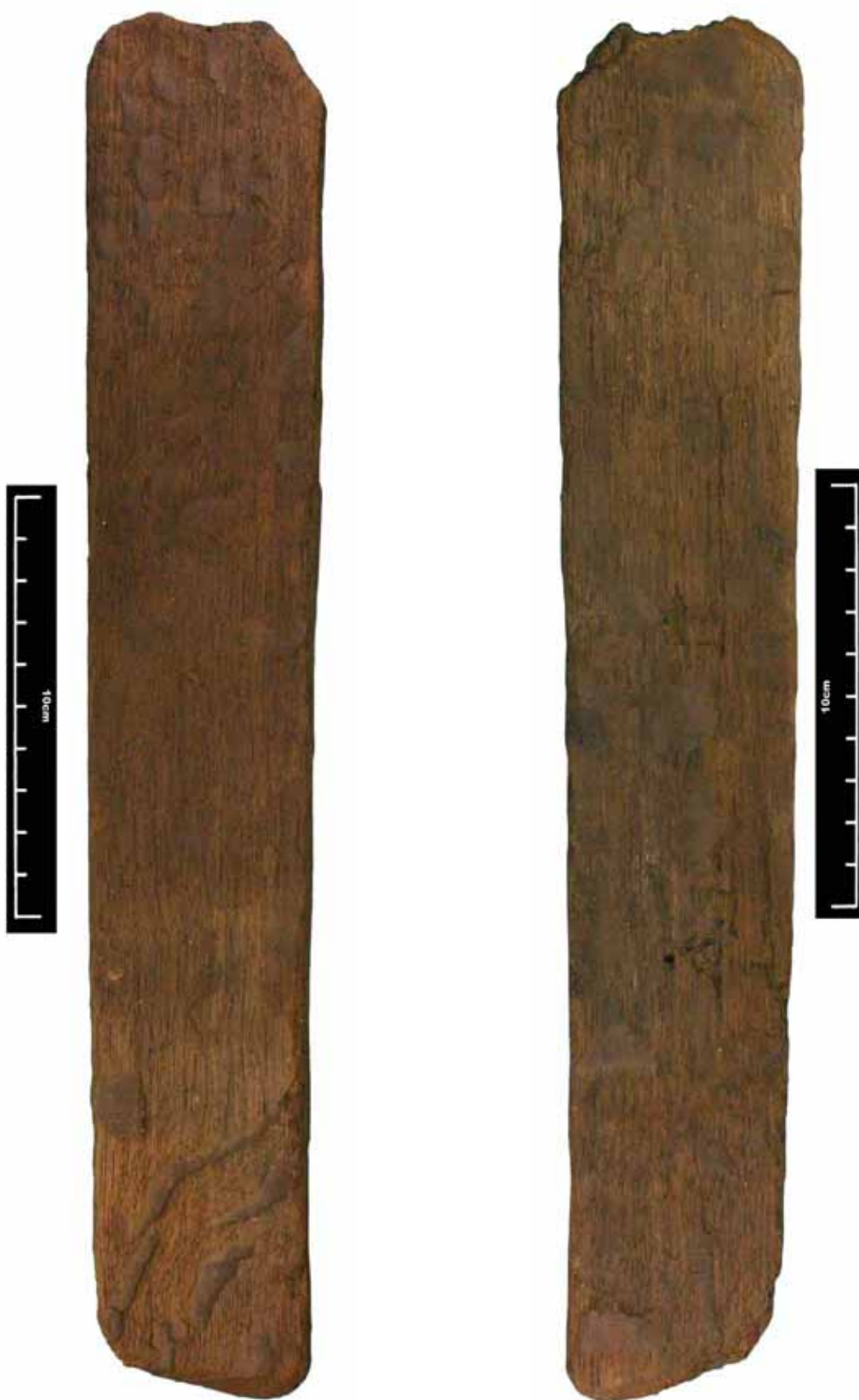
Component: Hoop

Cask Type: Unknown

Species:

Dimensions: 116mm long x 35mm wide x 11mm thick.

Description: Half split round wood in three fragments. 4 tree rings.



Context: Unknown

Component: Possible stave fragment

Cask Type: Unknown

Species: Oak

Dimensions: 315mm long x 55mm wide x 16mm thick.

Description: Possible stave Fragment. One end appears to have a howel and this end is chamfered on both inner and outer surface. Opposite end has a chamfer on the outer surface. Full width of stave is unknown as it is broken along its length. May have been re-used.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2182
Context: Unknown		Description: Possible stave Fragment. One end appears to have a howel and this end is chamfered on both inner and outer surface. Opposite end has a chamfer on the outer surface. Full width of stave is unknown as it is broken along its length. May have been re-used.
Component: Possible stave fragment		
Cask Type: Unknown		
Species: Oak		
Dimensions: 315mm long x 55mm wide x 16mm thick.		



Context: stbd side of F58

Component: Possible stave

Cask Type: Unknown

Species:

Dimensions: 138mm long x 67mm wide x 10mm thick.

Description: Thin piece of wood, possible cask fragment. Overall wood is in good condition. Roughly rectangular in plan. One edge appears to be slightly chamfered, opposite edge may not be original. Surfaces have few notable features, apart from one or two possible stop marks. 17 tree rings.



Context: Over F58

Component: Possible stave

Cask Type: Unknown

Species: Oak

Dimensions: 135mm long x 75mm wide x 4mm.

Description: . Fragment is tapered, 50mm at narrow end and 83mm at wider end. One end is chamfered. One profile features a possible nail hole. The opposite profile appears to have sections of original edge with other parts of the profile being stepped as if cut away. Some iron staining. Narrow end also displays possible stop mark. 29 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2195
Context: Over F58	Description: . Fragment is tapered, 50mm at narrow end and 83mm at wider end. One end is chamfered. One profile features a possible nail hole. The opposite profile appears to have sections of original edge with other parts of the profile being stepped as if cut away. Some iron staining. Narrow end also displays possible stop mark. 29 tree rings.	
Component: Possible stave		
Cask Type: Unknown		
Species: Oak		
Dimensions: 135mm long x 75mm wide x 4mm.		



Context: F62.0 - F63.0

Component: Stave

Cask Type: Unknown

Species: Oak

Dimensions: 105mm x 65mm x 7mm.

Description: Very soft. No markings or tool marks. Croze present, 3mm wide. No original edge remains. 34 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2198
Context: F62.0 - F63.0	Description: Very soft. No markings or tool marks. Croze present, 3mm wide. No original edge remains. 34 tree rings.	
Component: Stave		
Cask Type: Unknown		
Species: Oak		
Dimensions: 105mm x 65mm x 7mm.		



Context: F62.0-F63.

Component: Stave

Cask Type: Unknown

Species: Oak

Dimensions: 630mm long x 115mm wide x 20mm thick.

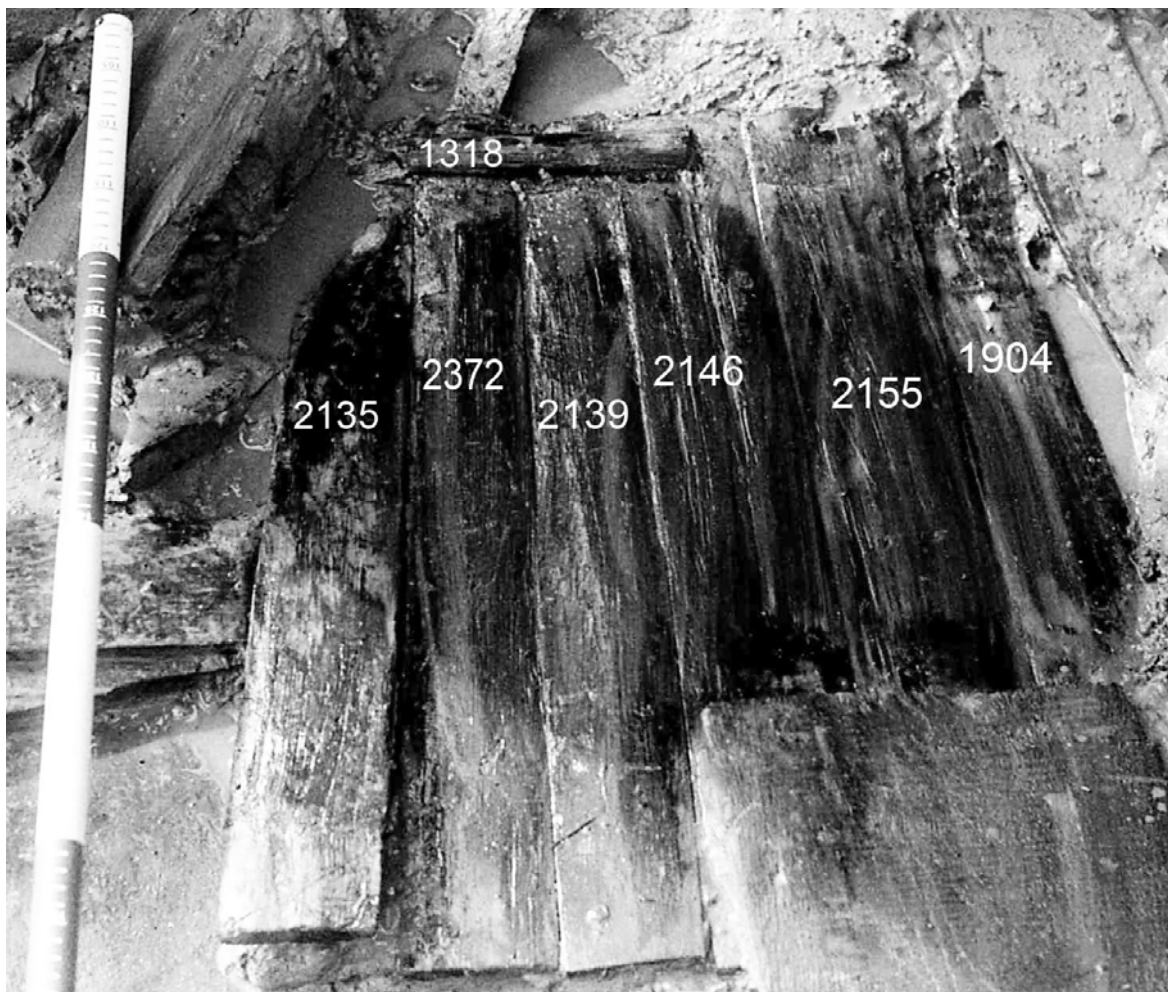
Description: No chimes present. Large notable howel at wider end, broken at croze. Narrower end has no evidence of howel. Both modern and original damage. No merchants marks or plugs. Substantial belly to the stave, however it is unclear whether this is original. 40 tree rings.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 2200
Context: F62.0-F63.		Description: No chimes present. Large notable howel at wider end, broken at croze. Narrower end has no evidence of howel. Both modern and original damage. No merchants marks or plugs. Substantial belly to the stave, however it is unclear whether this is original. 40 tree rings.
Component: Stave		
Cask Type: Unknown		
Species: Oak		
Dimensions: 630mm long x 115mm wide x 20mm thick.		

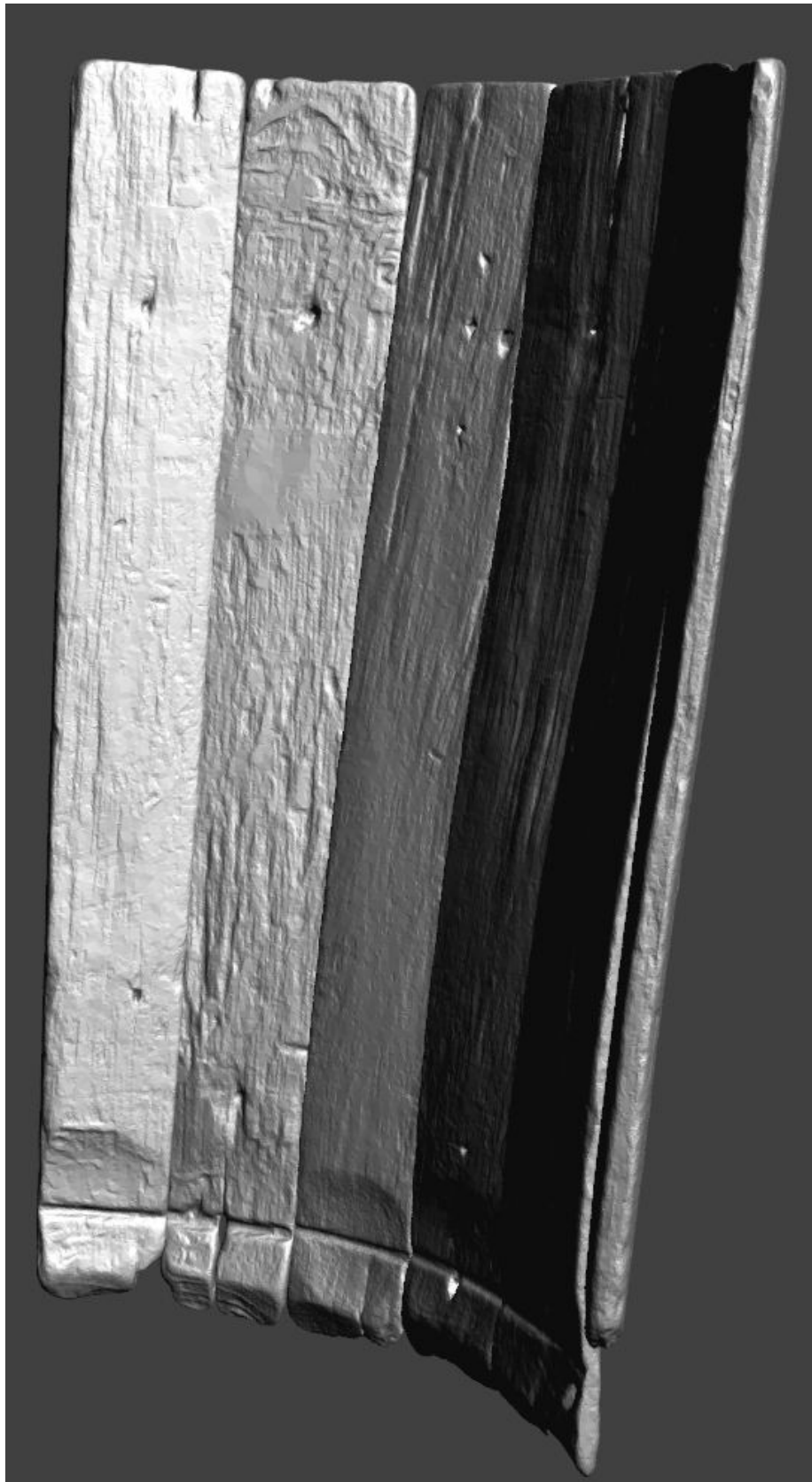
Cask Component Notes

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.

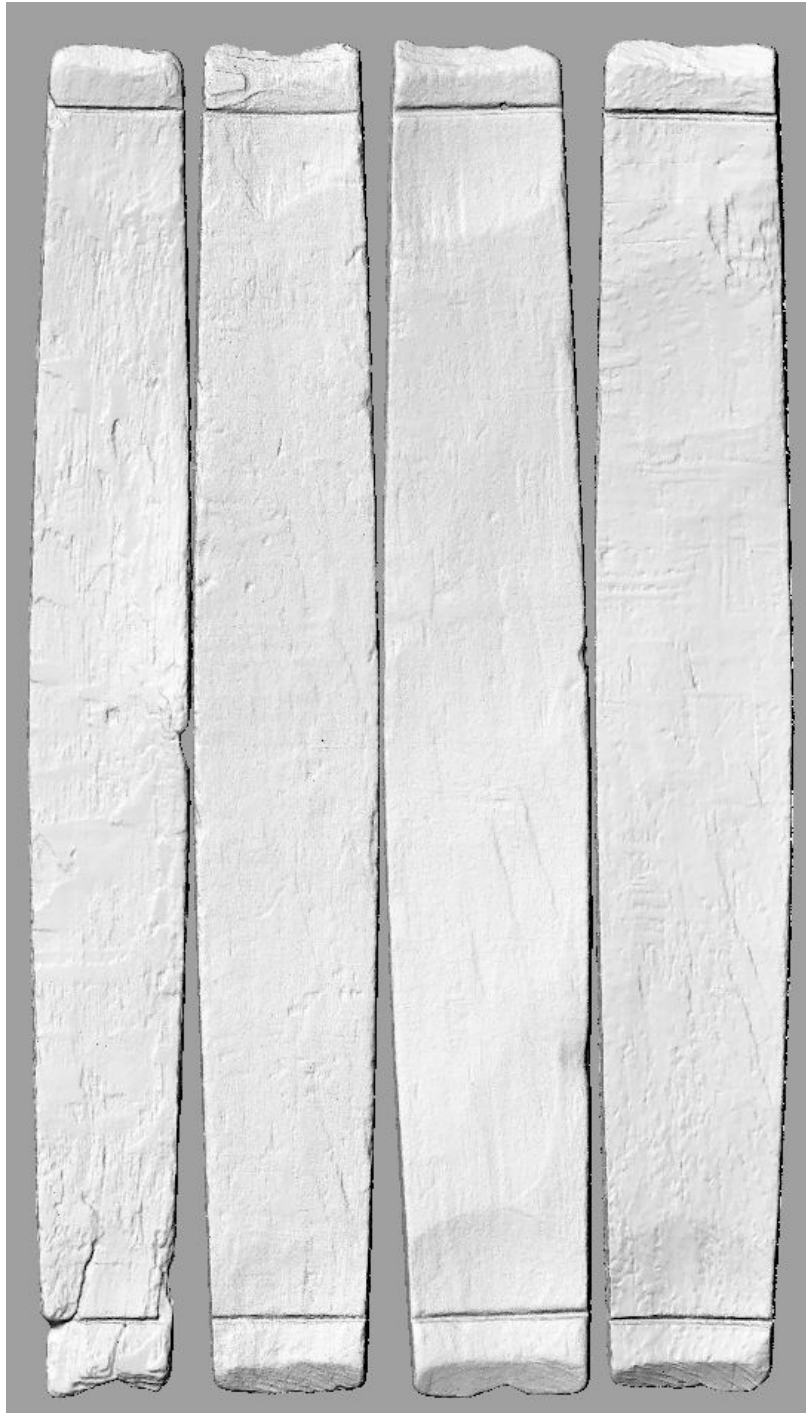
One group of six staves (context 151) were found together in situ and are undoubtedly from the same cask. No head pieces were associated with context 151. Staves numbered CT2139, CT2372, CT2135, CT1904, CT2155 and CT2146 and hoop fragment CT1318 are part of this group and are seen photographed together 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.



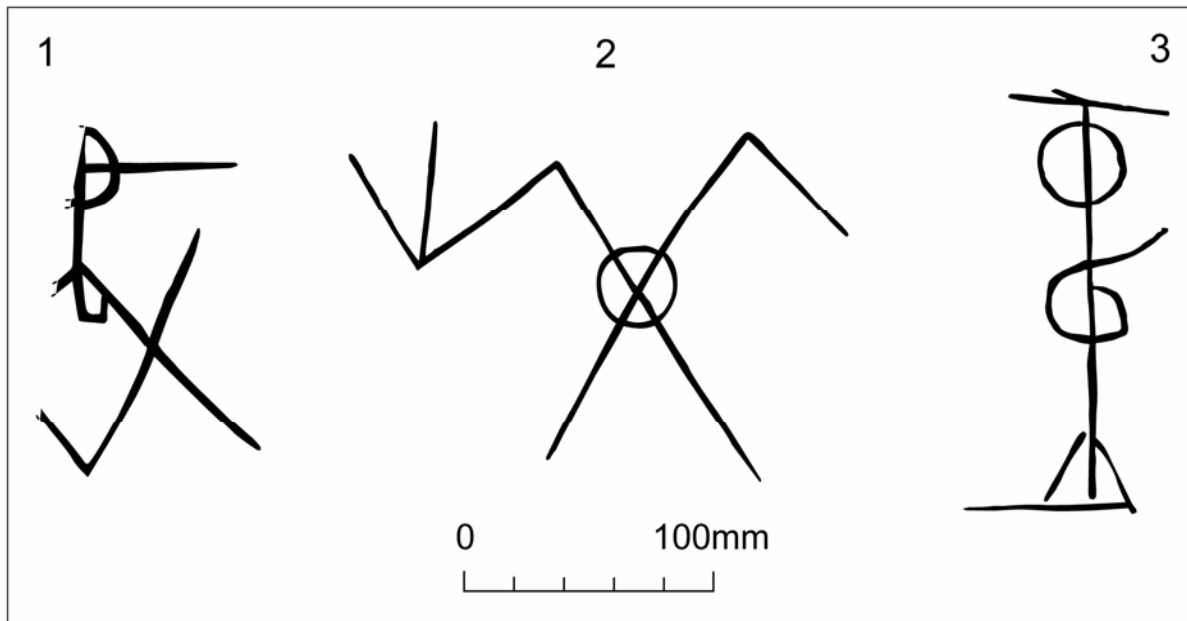
A second group of staves, CT2113, CT2143, CT2148 and 1951 are quite possibly associated with one another. Seen below are the staves side by side (not in their original order). The presence of a croze groove at either end, unlike context 151, indicates this cask was constructed to be sealed at both ends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

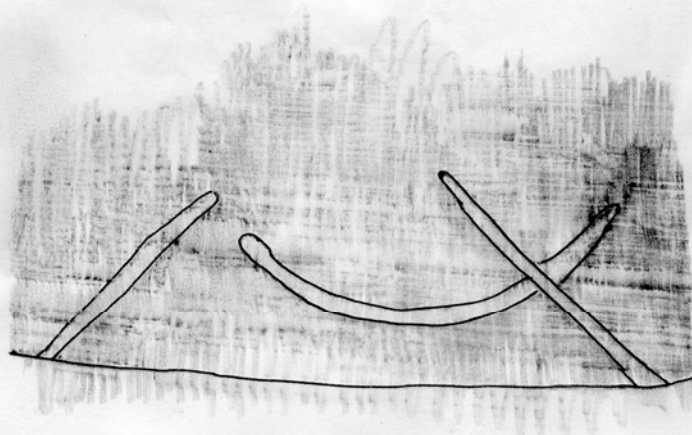
Merchant Marks found on Newport Ship Timbers

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.