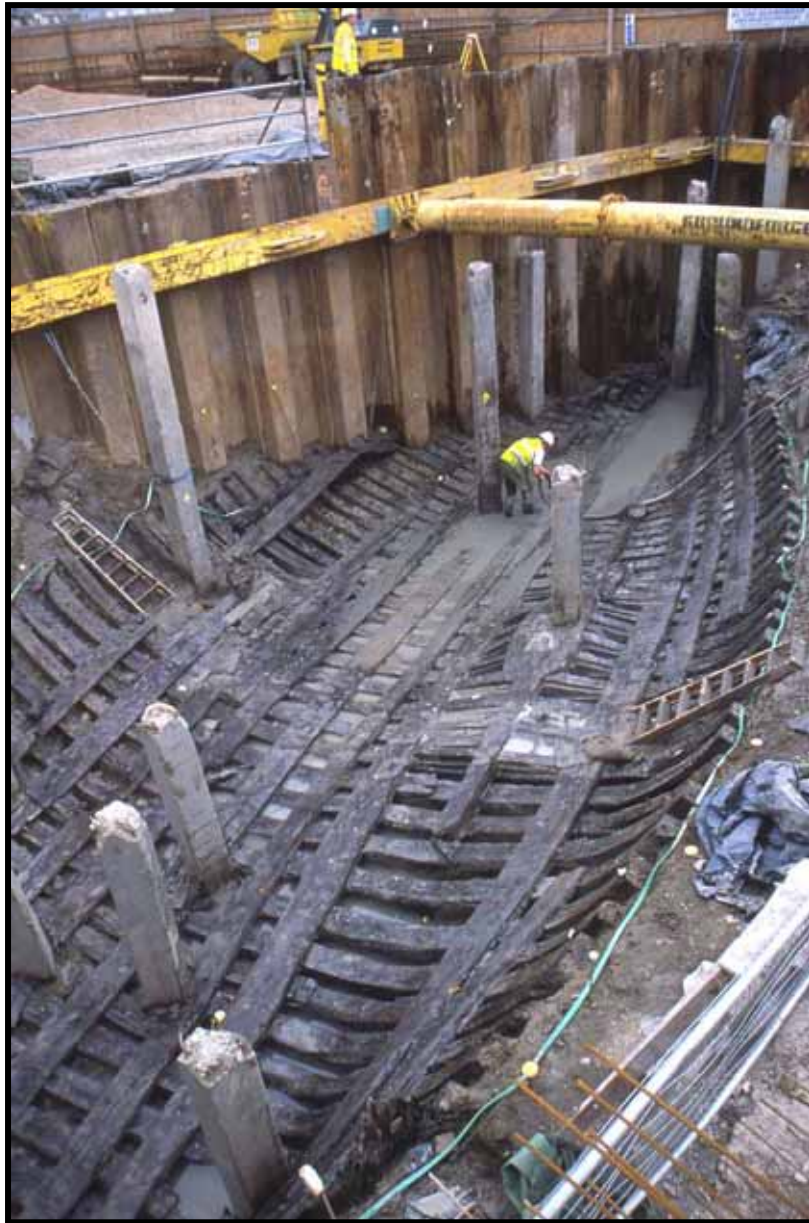


# Newport Medieval Ship Project

## Specialist Report:

### CASKS II



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# **The Newport Ship Project**

## **Introduction**

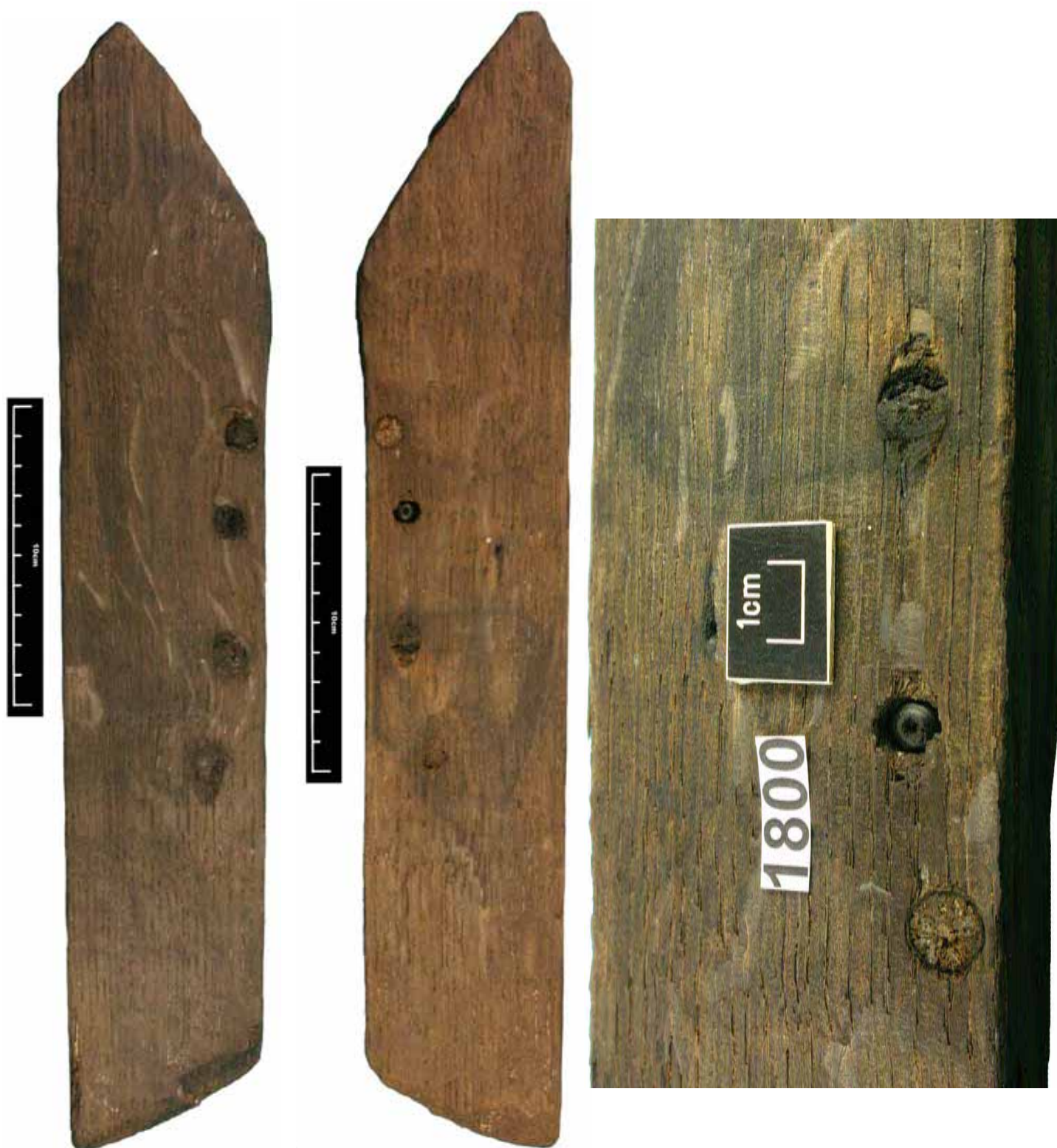
In 2002, during the construction of the Riverfront Theatre, on the banks of the River Usk in Newport, South Wales, an archaeological find of great significance was unearthed. In the summer of that year, while undertaking the excavations for the theatre's orchestra pit, the well-preserved remains of a 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:** c.F40s

**Component:** offcut poss oak barrel head fragment

**Cask Type:** Unknown

**Species:**

**Dimensions:** 355mm long x 62mm wide x 26 mm thick.

**Description:** Function unclear. No chimes but chamfered at one end, with possible stop mark half way down. Good condition, no makers marks, but long groove running diagonally across fragment. Four wooden dowels. For recording purposes, the inner surface is so called due to chamfered edge.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1800
Context: c.F40s	Description: Function unclear. No chimes but chamfered at one end, with possible stop mark half way down. Good condition, no makers marks, but long groove running diagonally across fragment. Four wooden dowels. For recording purposes, the inner surface is so called due to chamfered edge.	
Component: offcut poss oak barrel head fragment		
Cask Type: Unknown		
Species:		
Dimensions: 355mm long x 62mm wide x 26 mm thick.		





1cm



1cm

Context: Unknown

Component: Unknown

Cask Type: Possible stave

Species:

Dimensions: 615mm long x 73mm wide x 8mm thick, split into three fragments of lengths 164mm, 240mm, 210mm.

Description: Very soft condition, possible cause of dents. Slightly bevelled at one end, possible howel at opposite end. May have been cut in antiquity at croze. Some possible adze marks on inner surface.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1809
Context: Unknown	Description: Very soft condition, possible cause of dents. Slightly bevelled at one end, possible howel at opposite end. May have been cut in antiquity at croze. Some possible adze marks on inner surface.	
Component: Unknown		
Cask Type: Possible stave		
Species:		
Dimensions: 615mm long x 73mm wide x 8mm thick, split into three fragments of lengths 164mm, 240mm, 210mm.		



**Context:** Unstratified

**Component:** Head

**Cask Type:** Unknown

**Species:** Oak

**Dimensions:** 577mm long x 155mm wide x 25mm thick.

**Description:** Some orange iron staining and some black staining. Chamfering on inner surface of both short edges. Head is punctured by 15 dowel holes, 11 of which are in situ. The inner surface features some splitting damage at one end, and the outer surface displays some marks, but these are unlikely to be stop marks.



Newport Medieval Ship Cask Component Catalogue		Cowtag: 1813
Context: Unstratified	Description: Some orange iron staining and some black staining. Chamfering on inner surface of both short edges. Head is punctured by 15 dowel holes, 11 of which are in situ. The inner surface features some splitting damage at one end, and the outer surface displays some marks, but these are unlikely to be stop marks.	
Component: Head		
Cask Type: Unknown		
Species: Oak		
DImensions: 577mm long x 155mm wide x 25mm thick.		



**Context:** Behind and under rider on F9

**Component:** Stave

**Cask Type:** Possibly open

**Species:** Oak

**Dimensions:** 415mm long x 90mm wide x 13mm thick.

**Description:** . Good condition. Intact chime at one end. The other is broken. Croze is 7mm wide. Howel is visible on both sides of the croze. Chamfer is 2cm wide at widest. Outer surface is slightly degraded. Outer surface, broken end appears to be chamfered, may just be damage. No visible tool marks.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1833
Context: Behind and under rider on F9		Description: . Good condition. Intact chime at one end. The other is broken. Croze is 7mm wide. Howel is visible on both sides of the croze. Chamfer is 2cm wide at widest. Outer surface is slightly degraded. Outer surface, broken end appears to be chamfered, may just be damage. No visible tool marks.
Component: Stave		
Cask Type: Possibly open		
Species: Oak		
Dimensions: 415mm long x 90mm wide x 13mm thick.		



**Context:** Unknown

**Component:** Possibly a stave

**Cask Type:** Unknown

**Species:**

**Dimensions:** 390mm long x 60mm wide x 17mm thick.

**Description:** Large nail, 2 original faces, beveled edge. Function unclear. No stave features. No tool marks visible or fasteners. Straight end appears to have been cut. Opposite end tapers to a point.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1837
Context: Unknown	Description: Large nail, 2 original faces, beveled edge. Function unclear. No stave features. No tool marks visible or fasteners. Straight end appears to have been cut. Opposite end tapers to a point.	
Component: Possibly a stave		
Cask Type: Unknown		
Species:		
Dimensions: 390mm long x 60mm wide x 17mm thick.		





**Context:** F4 - F6

**Component:** Stave

**Cask Type:** Possibly open

**Species:** Oak

**Dimensions:** 230mm long x 75mm wide x 15mm thick.

**Description:** . Deep howel. Chime present at one end. Croze is 4mm wide, chamfer is 15mm wide. Opposite end is chamfered. Width of stave originally is not known due to damage along its length. No visible tool marks.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1839
Context: F4 - F6		Description: . Deep howel. Chime present at one end. Croze is 4mm wide, chamfer is 15mm wide. Opposite end is chamfered. Width of stave originally is not known due to damage along its length. No visible tool marks.
Component: Stave		
Cask Type: Possibly open		
Species: Oak		
Dimensions: 230mm long x 75mm wide x 15mm thick.		



**Context:** F30-31s

**Component:** Cant

**Cask Type:** Unknown

**Species:** Oak

**Dimensions:** 200mm long x 60 mm wide x 10mm thick.

**Description:** Chamfered along curved edge on inner surface. Tool marks visible on chamfer. This piece is dark in colour on inner surface and pale on the outer surface and soft. No plugs, dowels or merchant marks. The inner surface is possibly charred.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1842
Context: F30-31s	Description: Chamfered along curved edge on inner surface. Tool marks visible on chamfer. This piece is dark in colour on inner surface and pale on the outer surface and soft. No plugs, dowels or merchant marks. The inner surface is possibly charred.	
Component: Cant		
Cask Type: Unknown		
Species: Oak		
Dimensions: 200mm long x 60 mm wide x 10mm thick.		



**Context:** March

**Component:** Cant

**Cask Type:** Unknown

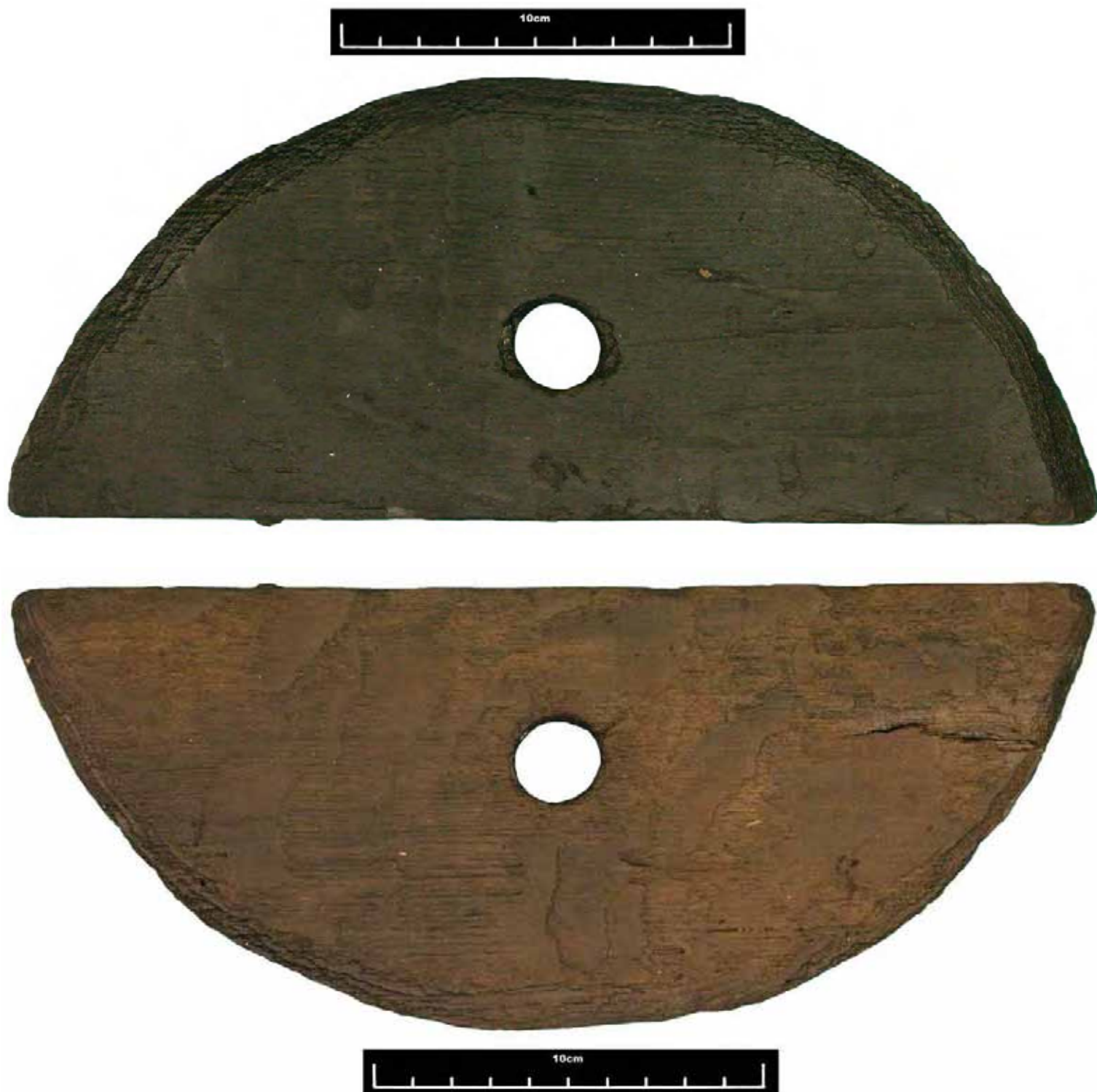
**Species:** Oak

**Dimensions:** 235mm long x 45mm wide x 15mm thick.

**Description:** Excellent condition, however damaged along the straight edge. Chamfered along curved edge on both inner and outer surface. Possible croze impression on curved edge. Tool marks visible on inner surface (surface with wider chamfer) Worked facets can be seen.



Newport Medieval Ship Cask Component Catalogue		Cowtag: 1846
Context: March	Description: Excellent condition, however damaged along the straight edge. Chamfered along curved edge on both inner and outer surface. Possible croze impression on curved edge. Tool marks visible on inner surface (surface with wider chamfer) Worked facets can be seen.	
Component: Cant		
Cask Type: Unknown		
Species: Oak		
Dimensions: 235mm long x 45mm wide x 15mm thick.		



**Context:** Unknown

**Component:** Cant

**Cask Type:** Unknown

**Species:** Oak

**Dimensions:** 275mm long x 110mm wide x 15mm thick. One hole in centre measures 25mm diameter. Two dowels are 7mm in diameter.

**Description:** One plug/ dowel hole in the centre measures 25mm diameter. Two dowels on straight edge to attach to next piece of head still in situ, 7 mm diameter. Curved edge is chamfered on both inner and outer surface

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1847
Context: Unknown	Description: One plug/ dowel hole in the centre measures 25mm diameter. Two dowels on straight edge to attach to next piece of head still in situ, 7 mm diameter. Curved edge is chamfered on both inner and outer surface	
Component: Cant		
Cask Type: Unknown		
Species: Oak		
Dimensions: 275mm long x 110mm wide x 15mm thick. One hole in centre measures 25mm diameter. Two dowels are 7mm in diameter.		



**Context:** F4-6

**Component:** Stave

**Cask Type:** Unknown

**Species:** Oak

**Dimensions:** 120mm long x 43mm wide x 15mm thick. Croze is 5mm wide.

**Description:** Croze is 5mm wide. Chime is bevelled, 10mm wide. Howel is present. Opposite end is damaged. Original width and length is unknown. Damaged end appears to have cracked at a plug hole.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1850
Context: F4-6		Description: Croze is 5mm wide. Chime is bevelled, 10mm wide. Howel is present. Opposite end is damaged. Original width and length is unknown. Damaged end appears to have cracked at a plug hole.
Component: Stave		
Cask Type: Unknown		
Species: Oak		
Dimensions: 120mm long x 43mm wide x 15mm thick. Croze is 5mm wide.		





**Context:** Unknown

**Component:** Cant

**Cask Type:** Unknown

**Species:** Oak

**Dimensions:** 295mm long x 65mm wide x 15mm thick.

**Description:** Good condition. Inner surface is chamfered along curved edge. One small nail hole - most likely modern, 2 mm in diameter. No merchant marks. Two lines on inner surface, possibly modern damage.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1876
Context: Unknown		Description: Good condition. Inner surface is chamfered along curved edge. One small nail hole - most likely modern, 2 mm in diameter. No merchant marks. Two lines on inner surface, possibly modern damage.
Component: Cant		
Cask Type: Unknown		
Species: Oak		
Dimensions: 295mm long x 65mm wide x 15mm thick.		



**Context:** F42-43s

**Component:** Hoop

**Cask Type:** Unknown

**Species:**

**Dimensions:** 30mm wide x 15mm thick.

**Description:** Two fragments join. Outer surface is curved (outer surface of branch) Inner surface is flat.



**Context:** . F35-45

**Component:** Hoop

**Cask Type:** Unknown

**Species:**

**Dimensions:** 11mm thick.

**Description:** Two pieces possibly join around a nail hole corrosion. 11mm thick. All damaged along the length, i.e. original width unknown. Concretion present. Outer surface is curved, presumably flat surface lay on the stave



**Context:** Unknown

**Component:** Hoops

**Cask Type:** Unknown

**Species:**

**Dimensions:** 32 mm wide, lengths vary. Nail hole is 4mm x 4mm

**Description:** 5 pieces. large cracks present on two. 32 mm wide, lengths vary. Poor condition. Concretions present around a nail hole 4mm x 4mm Larger fragments badly cracked.





**Context:** Unknown

**Component:** Stave or head

**Cask Type:** Possibly open.

**Species:** Oak

**Dimensions:** 545mm long x 100mm wide tapering to 85mm wide.

**Description:** No chimes One end cut. Other end is slightly damaged but chamfer is visible. 3 nail holes (2 poss modern). Good condition. Appears to have been split then worked. One possible adze mark. This piece is either part of an open cask, in which case the 'chamfer' is a partial howel and therefore the bottom of the cask or otherwise it is a head piece.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1904
Context: Unknown	Description: No chimes One end cut. Other end is slightly damaged but chamfer is visible. 3 nail holes (2 poss modern). Good condition. Appears to have been split then worked. One possible adze mark. This piece is either part of an open cask, in which case the 'chamfer' is a partial howel and therefore the bottom of the cask or otherwise it is a head piece.	
Component: Stave or head		
Cask Type: Possibly open.		
Species: Oak		
Dimensions: 545mm long x 100mm wide tapering to 85mm wide.		



**Context:** F25-26p

**Component:** Hoop

**Cask Type:** Unkown

**Species:**

**Dimensions:** 130mm long x 30mm wide x 15 mm thick. nail hole is 4mm x 4mm.

**Description:** . Half split, curved outer surface, falt on inner surface. nail hole left (iron nail sample taken 2849) 4mm x 4mm approx. Very little concretion. No visible tool marks.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1920
Context: F25-26p	Description: . Half split, curved outer surface, falt on inner surface. nail hole left (iron nail sample taken 2849) 4mm x 4mm approx. Very little concretion. No visible tool marks.	
Component: Hoop		
Cask Type: Unkown		
Species:		
Dimensions: 130mm long x 30mm wide x 15 mm thick. nail hole is 4mm x 4mm.		



**Context:** F25-26p

**Component:** Stave

**Cask Type:** Possibly open

**Species:** Oak

**Dimensions:** 160mm long x 42mm wide x 13mm thick.

**Description:** Stave, either from small vessel or, was chopped in antiquity. Croze is 6mm wide, howel is present. Chime is chamfered. Whiteish residue remains in croze. Opposite end to croze is chamfered on inner surface. Suitable for scanning.



Newport Medieval Ship Cask Component Catalogue		Cowtag: 1922
Context: F25-26p	Description: Stave, either from small vessel or, was chopped in antiquity. Croze is 6mm wide, howel is present. Chime is chamfered. Whiteish residue remains in croze. Opposite end to croze is chamfered on inner surface. Suitable for scanning.	
Component: Stave		
Cask Type: Possibly open		
Species: Oak		
Dimensions: 160mm long x 42mm wide x 13mm thick.		



**Context:** F25-26p

**Component:** Cant

**Cask Type:** Unknown

**Species:** Oak

**Dimensions:** 160mm long x 50 mm wide x 18mm thick.

**Description:** Eroded. Nail hole may be modern. Roughly semi circular in shape. All edges and surfaces have sustained some damage, although original edges and surfaces survive in places. May be part of 1652.

Newport Medieval Ship Cask Component Catalogue		Cowtag: 1927
Context: F25-26p	Description: Eroded. Nail hole may be modern. Roughly semi circular in shape. All edges and surfaces have sustained some damage, although original edges and surfaces survive in places. May be part of 1652.	
Component: Cant		
Cask Type: Unknown		
Species: Oak		
Dimensions: 160mm long x 50 mm wide x 18mm thick.		



**Context:** F38-42.

**Component:** Cant/swivel lid

**Cask Type:** Semi-closed

**Species:** Oak

**Dimensions:** 360mm long x 110mm wide x 15mm thick. Large plug hole is 25mm diameter. Nine dowel holes with diameters of 8mm.

**Description:** Very good condition. Chamfered along curved edge. One large dowel or plug hole - 25mm diameter. Row of holes along straight edge. No visible tool marks. No makers marks.

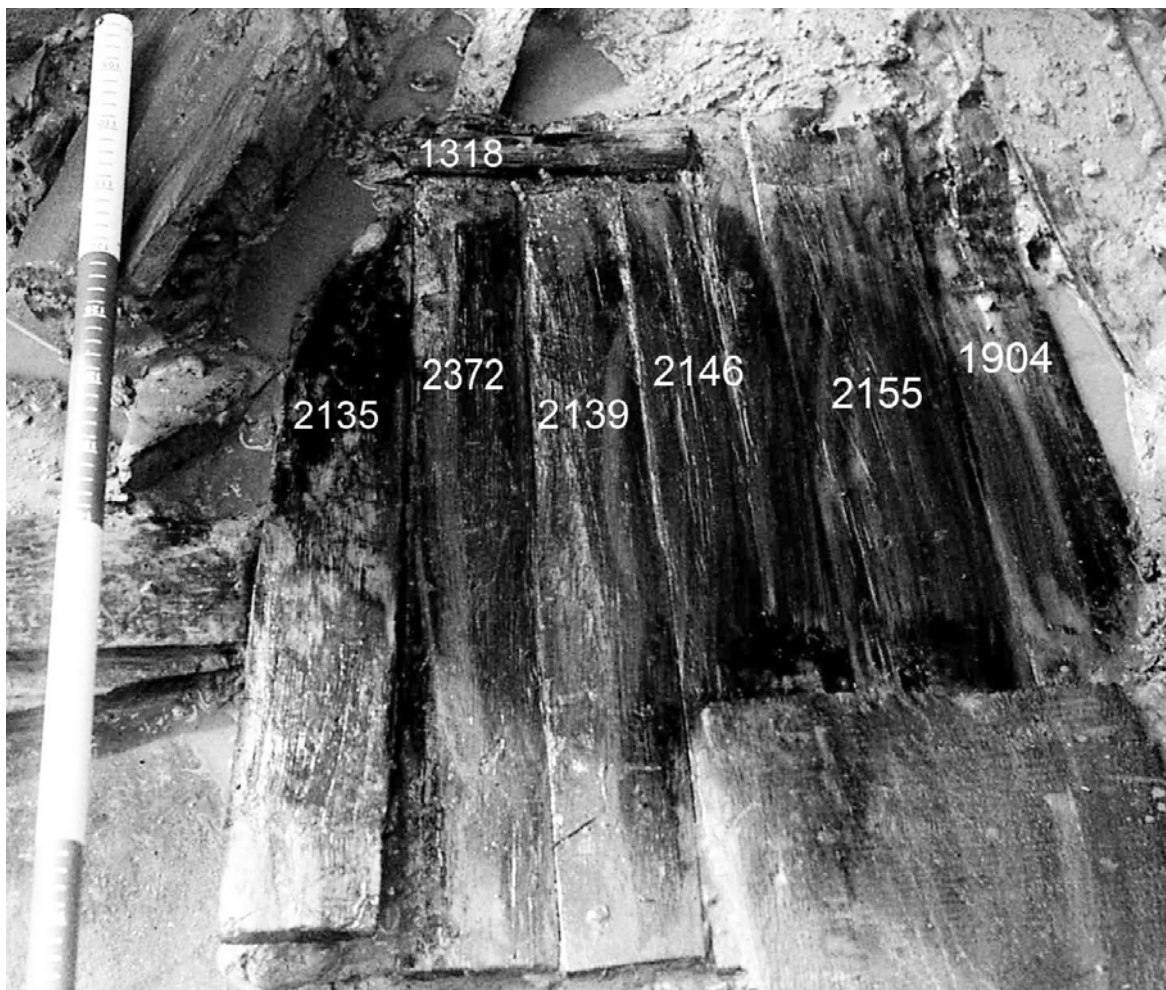
Newport Medieval Ship Cask Component Catalogue		Cowtag: 1949
Context: F38-42.	Description: Very good condition. Chamfered along curved edge. One large dowel or plug hole - 25mm diameter. Row of holes along straight edge. No visible tool marks. No makers marks.	
Component: Cant/swivel lid		
Cask Type: Semi-closed		
Species: Oak		
Dimensions: 360mm long x 110mm wide x 15mm thick. Large plug hole is 25mm diameter. Nine dowel holes with diameters of 8mm.		



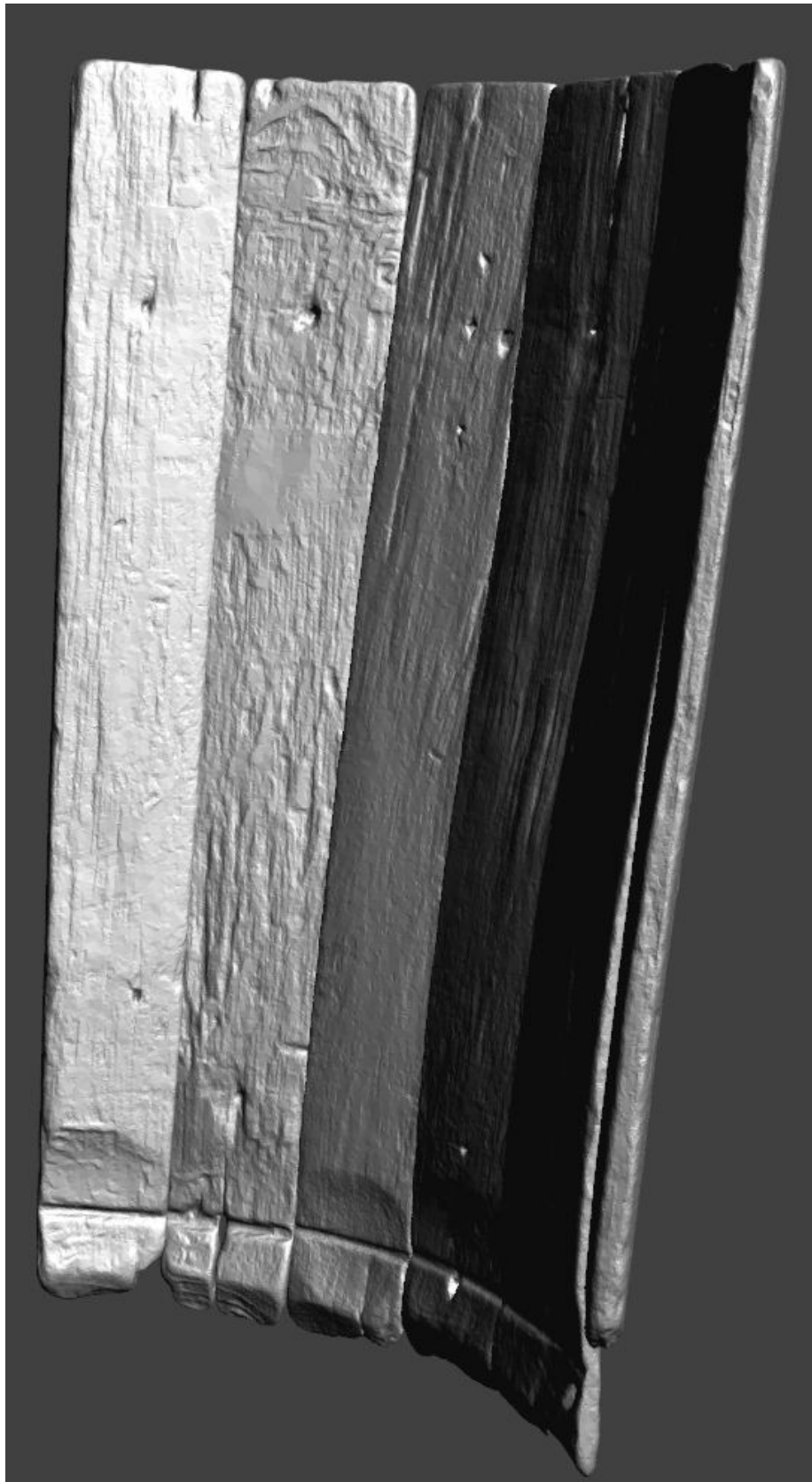
### Cask Component Notes

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.

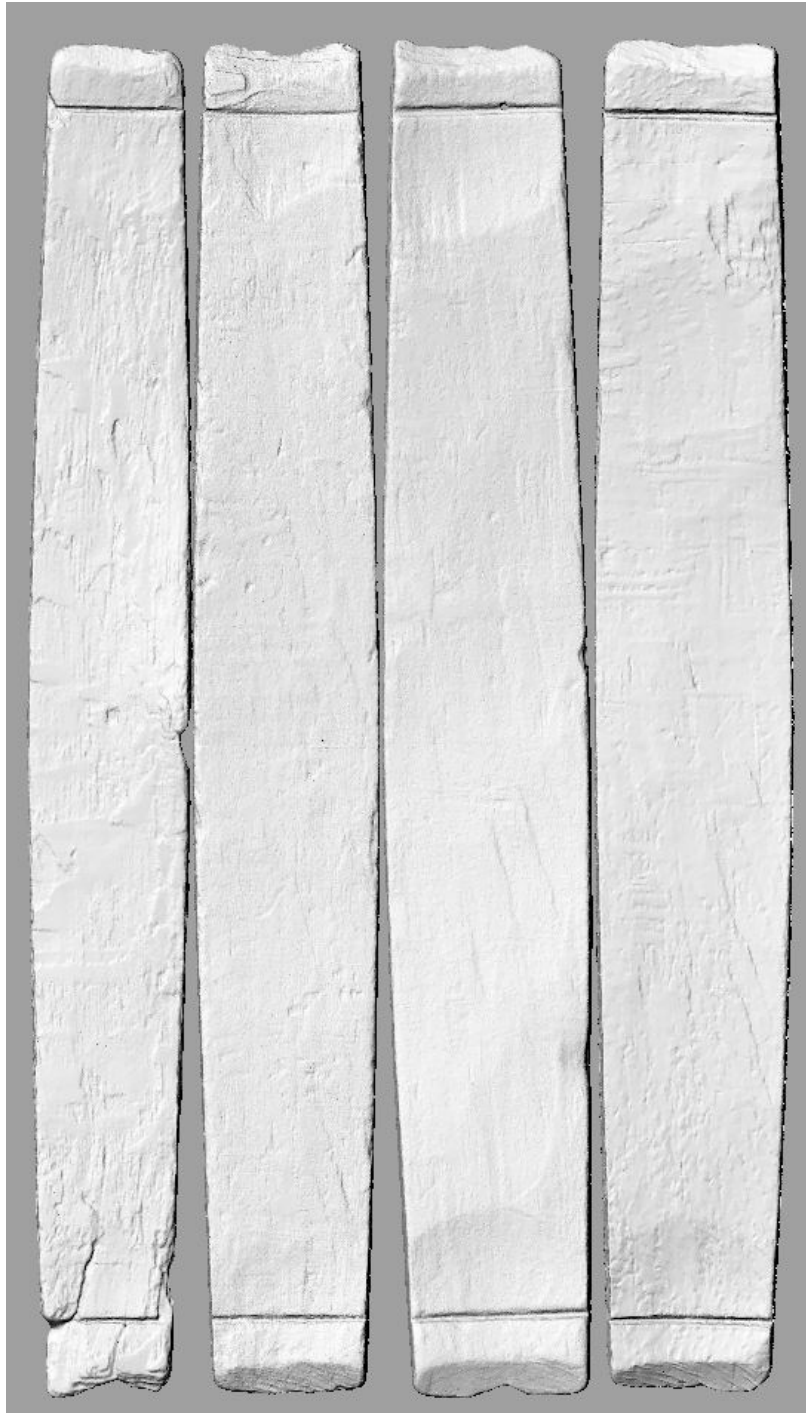
One group of six staves (context 151) were found together in situ and are undoubtedly from the same cask. No head pieces were associated with context 151. Staves numbered CT2139, CT2372, CT2135, CT1904, CT2155 and CT2146 and hoop fragment CT1318 are part of this group and are seen photographed together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



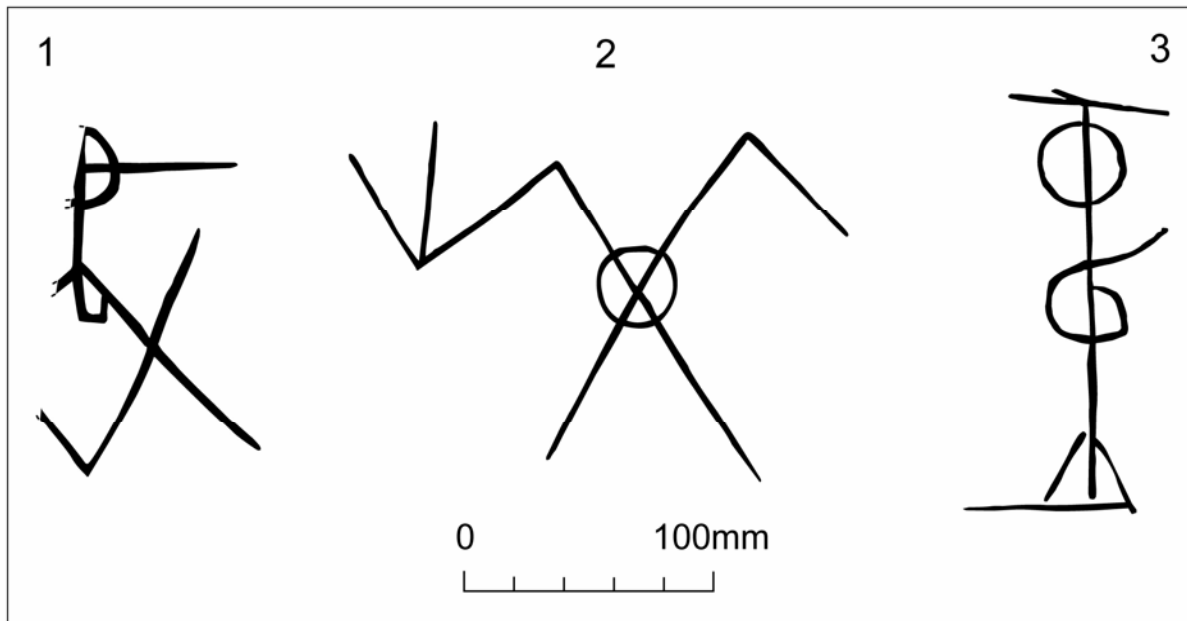
A second group of staves, CT2113, CT2143, CT2148 and 1951 are quite possibly associated with one another. Seen below are the staves side by side (not in their original order). The presence of a croze groove at either end, unlike context 151, indicates this cask was constructed to be sealed at both ends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

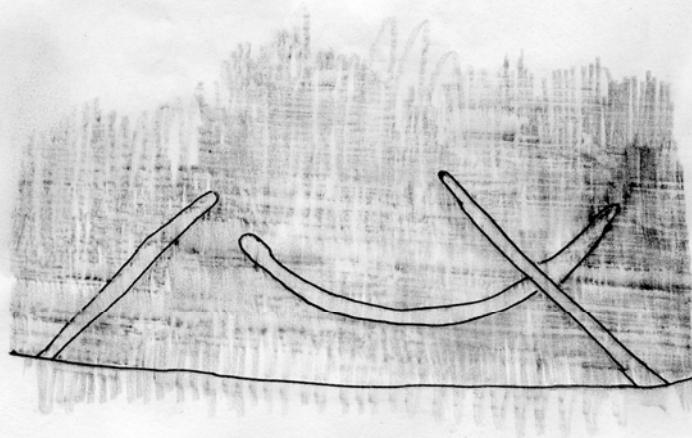
1. Cow 2369
2. Cow 1555 (Found on non-cask artefact (the 'door'))
3. Cow 2137 (Cask Head)





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.