



## **Alexandria Centre for Maritime Archaeology & Underwater Cultural Heritage**

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### **Shipbuilding Tools in Roman World**

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## Introduction

The early primitives have tamed every available resource to survive. They built ships to travel sometimes looking for food or maybe looking for safety, showing remarkable resourcefulness even at times when life was materially poor. One of these resources that the core of archaeology concerned with is the construction process of ships starting by timbers and planning shaping and ending with fitting everything together on the berth forming the hull.

The following section will illustrate the shipbuilding tools in Roman Empire which is categorized as cutting, bouncing, measuring and finally smoothing tools.

### 1 Cutting tools:

#### 1.1 Axe: secures

Inscription on a roman coin stored at the Museum of Carthage a ship depicted with an axe and an adze upon it (Figure 1)



Figure 1: Roman coin show ship depicted with an axe and an adze stored at the Museum of Carthage (By Mirime Mastoury)

## 1.2 Adze: ascia

Adzes used for appropriate shaping the curved structural timbers, and smoothing work.

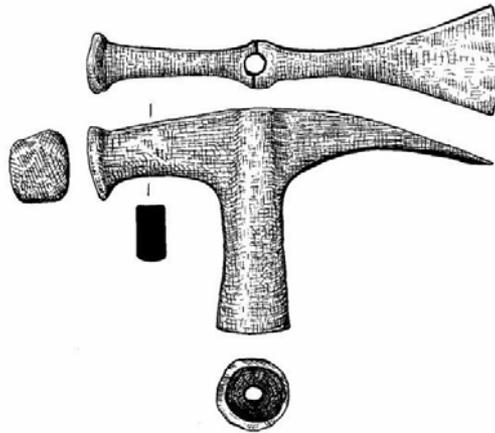


Figure 1: Iron adze-hammer, the adze-blade is strongly splayed and has a curved edge b16 at (British museum).

Adze-hammer blades: Romans commonly Combined the adze blade with a second tool counterfeit on the opposite side; a cutting edge on one side and a striking head on the other (Figure 2) (Ulrich2007:16), the British museum had a well preserved collection of adzes hammer from Romano-British (Figure 3).



Figure 3: Iron adze-hammer on display with reconstruction of handle. The adze-blade is turned through a sharp angle and has straight sides which splay out to give a relatively wide, slightly convex b17 at (British Museum).

### **1.3 Saw: serra**

Roman-period depictions of craftsmen using their saws appear frequently in painted scenes of daily life. On the mosaic of Rotande from the roman 2nd century AD, which found at baths of Thayna (ancient Thaenae) Tunisia frigidarium in 1904, a carpenter was represented with a frame saw, also a bow drill and an adze inside a box appeared between his leg (Figure 4) (Gauckler1910: 11-18).

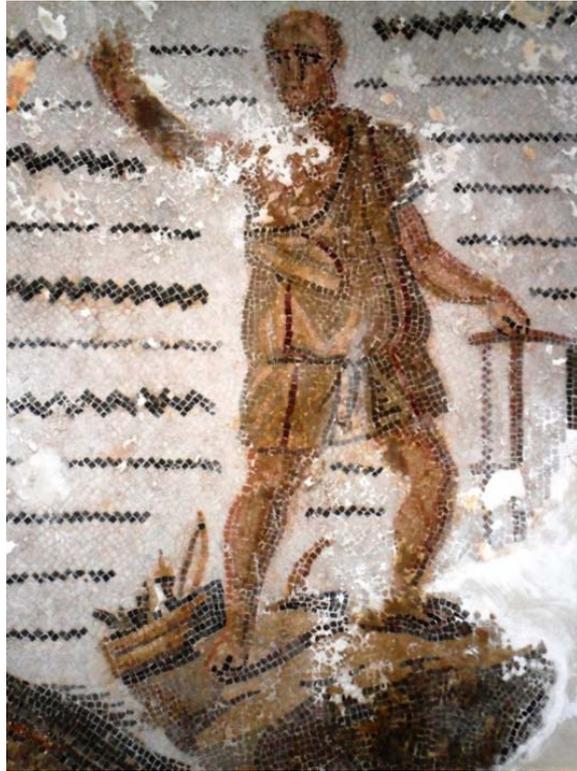


Figure 4:A part of round mosaic found at the frigidarium bath of Thayna Tunisia carpenter is holding a saw and a box beside him contains carpenter tools as bow drill and adze between his legs ( by Mirime Mastoury)

#### **1.4 Chisel: scalp rum**

The chisel or as in Latine *scalp rum* for shaping wooden joints: cutting mortises, forming tenons and dovetails through using thick and heavy blade and applying pressure; therefore, it was indispensable tool for shipwrights. Standard chisel blades were flat, that taper from the handle toward the blade (Ulrich2007:26-27).

The mortising chisel: Its blade was thick, and heavy; was used for cutting deep mortises in wooden stock with mallet (Figure 5) (Ulrich2007:28)



Figure5: Carpenter using mallet and chisel (By Mirime Mastoury).

## 2 Bouncing tools

### 2.1.Mallet :

Representation of mallet on mosaic was discovered in 1895 in Tunisia showed Roman vessel Representation of the complete profile of vessels that appear to be on the water with their name of the head of Ocean god and river god late third century A.D at Altiburos ( El MDAINA )( see figure 5) (Duval, 1949) Furthermore, the remains of a Roman ship discovered in 1962 discovered mallet that made from one piece of wood (Figure 6).



Figure 6: Mallet made from one piece of wood (British Museum).

## **2.2.Hammer :**

A hammer was found at the 4th-century-BC Roman shipwreck Mateille A<sup>1</sup> in Gruissan, with two broken ends; nevertheless, it is possible to see the departure of ends that are section rectangular, the wooden handle is not preserved but the opening provided to its location east (Figure7) (Postiaux 2015:135)

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<sup>1</sup> Matrille A shipwreck is located in the Narbonne region at the south west of France, date by century ( Solier 1981: 176-177)

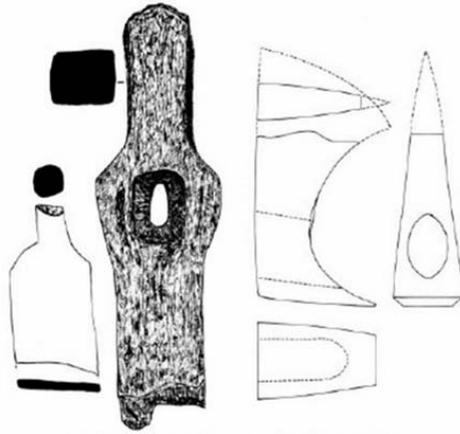


Figure 7: Hammer from Mateille A shipwreck (Postiaux2015:48,fig. 48.1).

### 3 Smoothing tools

#### 3.1. Plane: runcina

The rabbeting planes: fitted with narrow blades, designed for cutting long grooves parallel to the grain of the work piece used in the keel (Figure 8).



Figure 8: Used of rabbeting planes to make garboard under keel (Doorninck 1976 :118 ,fig 3,4)

## **Conclusion :**

Most of the tools like the saw - especially the frame saw-, the adze-hammer, and finally the plane are frequently present. We know that the Romans followed the same principles and methods of construction as the second Greek phase (Abd el-Maguid 2009: 309-311). So, the saw would be of great importance in cutting the less thick planking of the hull. The Adze-hammer, two tools in one, would be used in shaping frames and then hammering nails for fastening. One of the perforating tools for making holes for pegs or treenails and finally the plane.

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