

DISCOVERING ARCHAEOLOGY AND THE BRONZE AGE

drawing on sites along the English Channel
and North Sea

A subject knowledge and teaching guide



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SECTION 1

The discovery of the boat

Dover, Kent, England, Monday 28 September 1992, lunchtime. On the construction site of a new road running towards the ferry, without any warning, the bucket of a mechanical digger uncovered some wood nearly 6 metres down, its golden honey colour still visible when first exposed to the air. The machines stopped as the archaeologists on site looked down at the discovery, cleaning away the silts that covered it. There was no doubt about it, it was a very old but remarkably well-preserved piece of wood. Archaeologists from the Canterbury Archaeological Trust took over from the building contractors and began excavating as best they could under the time constraints of urban development. Conditions were exceptionally difficult. The excavation site, in the heart of the town, was very deep and the initial time given by the road builders for excavation was short, too short for a discovery of such importance. The archaeologists negotiated with the developer and managed to extend the deadline a little. Situated below sea level, not two hundred metres from the beach, the site was regularly flooded with water. Suction pumps worked from dawn until late at night so the work could continue, whilst at the same time the archaeologists sprayed the wood in order to stop it drying out. In less than a month, thanks to a tremendous effort amongst the racket of the machines and the media frenzy surrounding the event, one of the oldest sea-faring boats was brought into the light of day. The dig was completed on the 20th October after a period described by the excavators as chaotic, stressful – and fabulous.

To this day they regret that there was no possibility to open a third shaft in order to recover all of the boat. The position of the boat meant that they had to cut it into thirty-two pieces so that they could get it to the surface by means of a crane. It was restored by the Mary Rose Trust in Portsmouth, studied by an international team of experts for 12 years and has been on show in Dover Museum since November 1999.

Missing one end, which lay outside the area of excavation (and where it remains to this day), slightly crushed and partially dismantled, a length of 9.5 metres of the boat was recovered, with a width of over 2.2 metres. Experts in marine carpentry estimate that the original boat was about 18 metres long. It was propelled by paddles by a crew of sixteen men and could reach a speed of five knots in a force 3 wind. It was mainly made of oak planks. The original trees that were used, about 350 years old, must have been 11 metres high before the first branch appeared, with a diameter of 1.2 metres. Each of the two flat bottom planks were fashioned from half a log with a system of cleats and rails that allowed them to be joined together. They were joined along a central seam, with transverse timbers and wedges inserted through the cleats and central rails. Curving side planks were stitched to the bottom using twisted yew withies. These side planks also had cleats carved from the thickness of the wood.

The boat was partially dismantled and we need to imagine two additional planks on the original boat, which must have been dragged from the coast to its final resting place. The surviving remains do not suggest any navigational difficulties and we must seek other reasons than technical difficulties to explain why it was abandoned. It was made watertight by a mixture of beeswax and animal fat being pressed into the stitch-holes; while along the seams, pads of moss were positioned, compressed and held in place by long narrow oak lathes under the yew withies. All the organic material was remarkably well preserved. This is exceptional at these latitudes. It has been radiocarbon dated to c. 1550 BC, falling in the 'middle Bronze Age' (1600–1200 BC) according to the archaeological chronology of temperate Europe. Wear marks on the hull show that the boat was used several times, dragged over sandy beaches. Where had it been? Which seas had it crossed? Difficult questions. Oral societies of this period did not tell their story on tablets or parchment. They left behind them traces which the archaeologists bring to light and with which they reconstruct both the everyday or exceptional lives of these distant ancestors.

The excavators of the Dover boat and archaeological specialists in the Bronze Age wanted to share their findings and to make this period and the reality of an ancient cross-Channel community known to the general public. So experts from the south of England, the north of France and Belgian Flanders got together and came up with the European Interreg IVa 2 Mers/Seas/Zeeën 'BOAT 1550 BC' project. Led by the University of Lille 3 and the European Social Sciences and Humanities Research Institute (MESHS), the project brings together three countries, seven institutions and around 70 individuals involved at various levels.

The project developed slowly, step by step over the years until it finally took shape at the start of 2008, scheduled to celebrate the twentieth anniversary of the discovery of the Dover Boat and the latest in Bronze Age archaeology. Some of the initial dreams have had to be (temporarily) abandoned, in particular the desire to reconstruct the boat for a Channel crossing between Dover and Wissant (pas-de-Calais). This plan, seeking to renew ancestral connections, was thwarted by the difficulty in organising such a project in terms of time, cost and the need for trees over 350 years old! Begun in 2011, the project ran for 3 years. The programme was ambitious: a half-scale replica of the boat, experimental archaeology involving the production of metal axes identical to those used for making the boat, an itinerant trilingual exhibition in the three countries, a catalogue in three languages, fifteen public lectures, three international specialist conferences and the publication of the proceedings plus the creation of educational 'kits' produced for use with school children in the three countries with associated teacher training. The general objective was clear: to realise a specialist project based on the richest and most complex data archaeology has ever produced. The boat is a symbol at the heart of the project which seeks to disseminate the latest knowledge about a poorly known period, too rarely addressed in the school curriculum.

The “BOAT 1550 BC” story starts with the discovery of the boat, so how can it not be granted pride of place? In January 2012, two archaeological experiments were launched: one in Dover for building the half-scale replica of the boat and the other in a bronzesmith’s workshop in France to make an axe. Reliving the actions carried out thousands of years ago is essential to understand the specialist crafts of those oral societies: taking into account the traces found on archaeological remains, the logical progression through the processes of fabrication, the duration of the work and the difficulties of manufacture. Making the replica has enabled the specialists to gain a better understanding of the original, even though the wood behaves a little differently at half scale. Facing practical reality meant that the timetable for construction had to be revised. The four months allowed were not enough for the completion and the launch of a correctly caulked boat. In the bronzesmith’s workshop, the time needed for making a beautiful golden yellow bronze axe took longer than planned. Should this be seen as a failure? Certainly not. Our modern day societies are accustomed to obtaining objects quickly from an assembly line, with scant concern for the difficulties involved in producing something complex, by hand.

The men and women of the Bronze Age had a different attitude to time and consumption. Experimental archaeology opens up the possibility of seeing another approach to manufacturing, where the craftsman’s patience and meticulousness were essential. The completed replica boat, the replica axe and the by-products of its manufacture (pieces of moulds, wax, metal, etc) were included in the exhibition when it opened in Boulogne-sur-Mer (France) in June 2012.

Website : <http://boat1550bc.meshs.fr>

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The Dover Bronze Age Boat

At one time it was possible to walk between Calais and Dover, but then the climate changed and sea levels rose, creating the English Channel. This was not a barrier to communication, but instead formed a new route for connection between the inhabitants of what had now become two coast lines. From the start of the Neolithic period, people settled and took up agriculture in new lands. This intensified during the Bronze Age, over short and long distances. People migrated, traded and no doubt there were also conflicts.

The Discovery of the Dover Bronze Age Boat

The communities of the Bronze Age had efficient means of crossing the sea and a community was born out of the exchanges that were made. We know that around 1550 BC, the people of the Transmanche zone were making wooden boats around 20 metres long, as one example was miraculously preserved in Dover. Its discovery and study have changed our understanding of that time.

In September 1992, builders were working in Dover on the construction of a road between the port and the Channel Tunnel. Six metres down, some timber was unexpectedly revealed, then the bottom of a 'sewn plank' boat, perfectly preserved and nearly 9 metres long, was found. The sediments had even preserved its organic stitches. It was a major discovery. The archaeologists were able to extend the time available for excavation from 24 hours to 3 weeks. Although this very short time allowed them to salvage the boat, it meant they had to cut it into pieces in order to lift it to the surface. It was then treated with chemicals in order to conserve it. In 1999 the boat was put on display in a special gallery at Dover Museum where visitors can discover it today.

Dating and Understanding the Boat

The boat has been the subject of extensive examination, including the nature of its wood and stitches and the layout and size of its constituent parts. Laboratory techniques allow us to date many materials found by archaeology. Wood is suitable for two techniques: dendrochronology, which is based on the annual growth rings of trees and a base line which fixes a sample in time; and radiocarbon dating, which compares the amount of carbon 14 remaining in the wood at the time of its discovery with that found in living trees. In this way we can calculate that the boat was constructed in c. 1550 BC.

The Expertise and Status of the Boat builders

The creation of such a boat requires the expertise of different specialists: woodworking and plant experts, metallurgists for making tools and carpenters for the construction of the finished product. This boat, the best preserved example of many that once existed, is therefore a result of collaboration between specialist craftsmen.

The woodworking involved in making the boat is exceptional. The planks were hewn from oak logs 350 years old with a diameter of at least 1.2 metres and then carved to leave cleats and ridges upstanding in the wood of the flat bottom of the boat. The planks making up the vessel were joined and secured by stitches of vegetable fibre. Finally, the joints were made watertight by beeswax, animal fat and moss. These techniques, unique to the construction of these 'sewn plank' boats, no doubt originated during the Neolithic period in the Transmanche area and Northern Europe.

Archaeological remains like the boat, tools and miscellaneous metal objects testify to the existence of specialist craftsmen in Bronze Age society 3,500 years ago. To conceive the complex design of boats, to master the carving of the wood, to control the mix of metals in an alloy along with the melting temperatures and to select the processes of cold-hammering bronze require specific specialist skills. Certain individuals possessed this knowledge, but we do not know their status in these societies, which left no written record. We can nevertheless assume that their artistry conferred upon them a special place in society.

Peaceful sailors?

Weapons are among the most common metal finds from the Bronze Age. Excavated from graves or hoards, they make us wonder if the people of this time were not just peaceful farmers or merchants. Some weapons played a social role in ceremonies where their owners reaffirmed their privileged status. There is also the equipment of warriors, as shown by the damage that these objects so often bear. Furthermore, weapons seemed to have played a major role in the technical innovations in metallurgy at the start of the second millennium BC. Above all, the invention of the sword led to changes in the style of combat.