

Old Shipwrecks and New Dredging: An Elizabethan Ship in the Thames

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It is no accident that new dredging for historic ports can result in discoveries of old shipwrecks. In this recent case, a UK port authority has worked with archaeologists and heritage agencies to successfully reconcile the needs of the historic environment with the commercial need for ports to improve navigation by dredging.

Seafaring in the Thames Estuary stretches back several millennia, serving London and the coasts of Kent and Essex. The Thames Estuary continues to be hugely important for shipping, and is the responsibility of the Port of London Authority (PLA). Shipping routes in the outer estuary are restricted to channels between many large and dynamic sandbanks. The PLA has been seeking to improve access to the south by dredging one of these channels, Princes Channel, to make up for sand movements that are blocking previously-favoured channels.

A pre-dredging magnetometer survey in April 2003 showed an anomaly in the Princes Channel that was inspected by the PLA's own diving team in May 2003. The source of the anomaly was identified as a wreck, but it was thought to be a barge like the many other barges from the 19th and 20th centuries that can be found as decaying hulks all around the coasts of Kent and Essex. Like many UK port authorities, the PLA has not merely a right but an obligation to remove wrecks, of whatever age, if they present a hazard to navigation. These powers can override statutory heritage designations.

Unsuccessful attempts were made to disperse the wreck in June 2003 when some iron bars were recovered, so heavier equipment was called in and the wreck was cleared by grabbing in July 2003. Preliminary dredging operations, which had been excluded from the area of the wreck to avoid damage to dredging equipment, were then allowed to take place throughout the area. However, at this point it was realised that the debris from the grabbing included not only ship's timbers and iron bars, but also an anchor and a cannon. Recognising that this was possibly not just the wreck of an old barge, the PLA contacted Wessex Archaeology (WA), a not-for-profit charity, which carries out archaeological investigations for commercial developers, for assistance.

Following a brief inspection of the recovered material, which noted a possible second cannon, remedial archaeological recording was carried out. It was concluded that the remains were of a vessel up to 200 ton burden constructed between 1600 and 1850.

The PLA believed that the wreck had been completely recovered or dispersed, but a bathymetric survey to monitor the results of the channel dredging in October 2003 identified some 'high spots' in the vicinity of the wreck. A further diving



Figure 1: Part of a leather garment or jerkin excavated from the Princes Channel wreck

inspection by the PLA established that there was another piece of wooden wreckage. WA was commissioned to carry out an archaeological diving inspection, which confirmed the presence of a section of hull. A brief sidescan survey directed by WA on the same day also showed that there was yet further wreckage present, which probably represented the original site. As the section of hull was thought to be a hazard to navigation in the shallow channel, the PLA took the decision to recover it. The recovery took place later in November 2003, with WA staff in attendance. WA staff then carried out a diving inspection of what was thought to be the original site, which confirmed the presence of two sections of hull structure, partly covered by iron bars. A fragment of a Spanish olive jar was recovered.

In January 2004, the section of hull recovered in November was recorded in detail. Elements of the construction suggested that the ship was built in the 16th century, and possible Iberian influences were noted. Dendrochronological analysis indicated a building date in or shortly after AD 1574 and that the most likely source of the timbers was eastern England, particularly East Anglia and Essex. By this stage it was clear that not only was the wreck of considerable archaeological interest, but also that it needed to be entirely removed if the proposed dredging operations were to continue.

Attention turned to the further information required in order to design an archaeological mitigation strategy to accompany recovery of the remaining wreckage. A high-resolution sidescan survey of the site was undertaken by WA, which resulted in a geo-referenced mosaic that was used to plan operations and to identify targets around the main site. A further archaeological diving inspection, informed by the high-resolution survey, was undertaken to assess the overall disposition of major structural elements and to assess the presence and distribution of artefacts. The results of all these investigations were presented in an evaluation report, and a Project Design for the archaeological mitigation works was

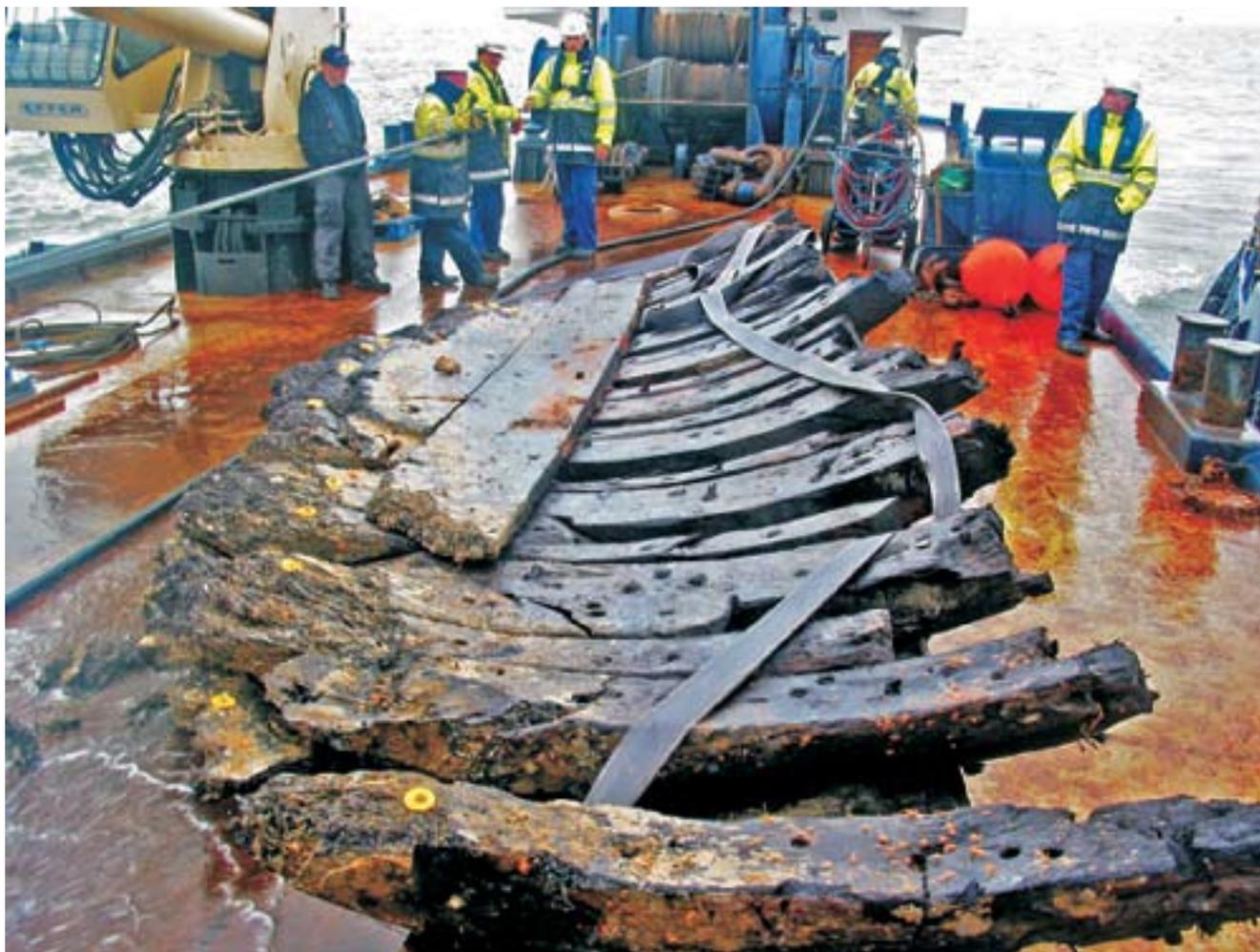
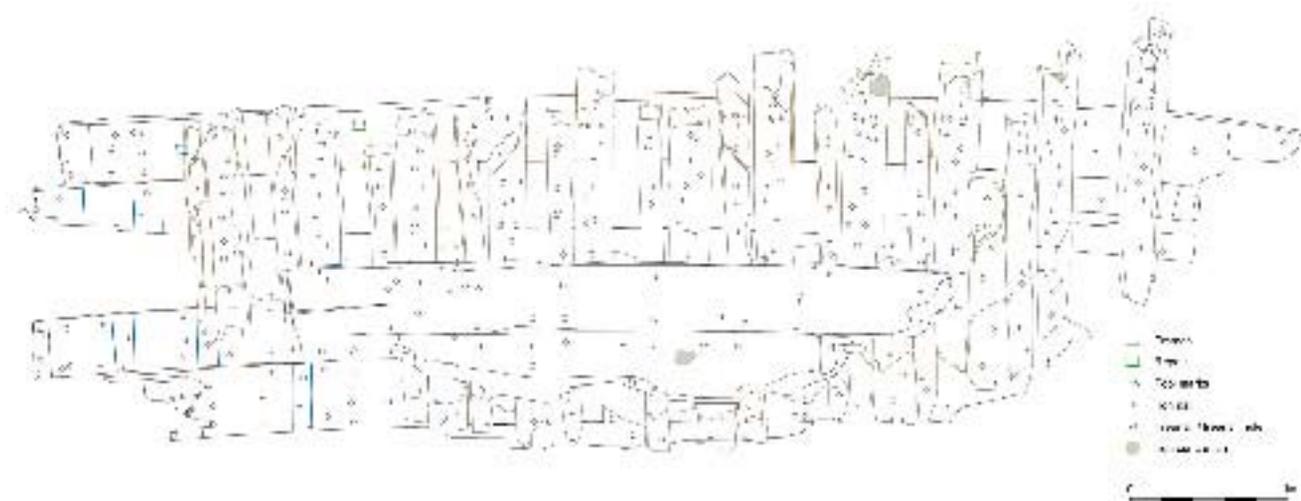


Figure 2: A section of the lower port side of the hull of the Princes Channel wreck, onboard a PLA salvage barge

Figure 3: Digital record of one of the hull sections from the Princes Channel wreck



prepared. The overall approach combined outline recording of structural remains on the seabed with detailed digital recording of recovered structure once onshore, all within the context of an explicit research strategy. The Project Design was prepared in accordance with the ICOMOS Charter on the Protection and Management of the Underwater Cultural Heritage 1996, which formed the basis for the Rules of the Annex of the 2001 UNESCO Convention, and other relevant professional standards. English Heritage had been informed and consulted on various aspects of the investigations throughout the process, and they approved the Project Design.

Diving operations were severely hampered by weather, taking place on eighteen days from mid-August to mid-October 2004 using a WA team supported by PLA divers, vessels and crews. As well as hull structure – including a rare section of ship’s stem – a range of artefacts including iron bars, lead and tin ingots, two further cannon and personal effects were surveyed and recovered. Environmental samples were also obtained. All of the hull sections have been transferred to the care of the Nautical Archaeology Society (NAS) and placed in a brackish lagoon near Portsmouth where they are being used for training purposes. The cannon are in the care of the Royal Armouries, and arrangements are being made to conserve the assemblage of small finds.

A full analysis is yet to be carried out, but a number of conclusions about the vessel can be drawn. The wreck is of a 16th century armed merchantman that was carrying iron, lead and tin. Although certain elements of the construction suggest a Mediterranean or Iberian influence, dendrochronological analysis demonstrates that the ship was built in England, most likely Essex or East Anglia, in or just after 1574. The keel length was probably 20-30m and the possible overall length around 35m. The vessel was probably three-masted, though no elements of rigging were found. The lowest deck served as a gundeck; two gun ports have been recorded in the recovered structure above the main wale, and a total of six to eight gun ports per side can be assumed. One of the cannon recovered during mitigation was marked with the initials “TG” and a grasshopper emblem, linking it to the influential Elizabethan financier, merchant and gunfounder, Thomas Gresham. The Gresham cannon, and the other cast-iron guns, are rare examples of early English cast-iron gun founding. Although the evidence is mixed, the ship was possibly outbound from London or another harbour on the Thames or Medway. The cause of the shipwreck is unknown, but stranding on an adjacent sandbank could have led to the loss; there were no indications of general unseaworthiness or previous damage on the recorded hull elements. It seems likely that the wreck may have been subject to salvage in the 19th century, as there is a

report dating to 1846 that refers to the recovery by divers from Whitstable (the same harbour used for the mitigation work) of iron guns, curious ingots and iron from an ancient wreck in the vicinity of Princes Channel.

As well as being significant for its analytical potential, the Princes Channel wreck was very important as a first example of marine development-led archaeology in the UK. This is the first time that a wreck has been discovered, investigated and recovered directly as a result of dredging. It was also the PLA’s first major encounter with archaeological procedures, and the first experience of WA and of English Heritage with dealing with this particular set of circumstances. The outer Thames Estuary is a very demanding environment, distant from harbours, subject to strong tides and poor visibility, exposed to the weather, and frequented by large ships at very close quarters. Many lessons have been learned, and some issues remain unresolved.

Key lessons include the successful development of a close working relationship between the port authority and archaeologists, especially in using the considerable experience and facilities of the port authority to support archaeological investigations. The adoption of a “staged approach” to investigation ensured that resources were carefully targeted to enable successive decisions to be taken, and that the eventual mitigation strategy was well-founded. The integration of marine geophysics, diver-based methods, and digital surveying onshore achieved a good overall record of the site on the seabed and of the recovered timbers and artefacts, even though on-site visibility varied from zero to 20-30cm. Despite clearance and dispersal operations before the possible importance of the wreck was recognised, and despite possible 19th century salvage operations and probable impacts from historic fishing activity, the Princes Channel wreck retained considerable archaeological integrity and was certainly worth thorough investigation. Some problems are more intractable, especially the logistical difficulties of operating efficiently in the outer Thames. Also, existing problems relating to the handling, ownership, analysis, publication and long-term curation of shipwreck material in the UK were brought into sharp focus.

It would be fair to say that the learning curve for all parties was very steep, and the PLA committed considerable resources to the investigations. The result, so far, has been very rewarding, presenting an evocative and informative window into the Elizabethan past of today’s port.

Further Reading

<http://www.wessexarch.co.uk/projects/marine/thameswreck/index.html>