

Dredged Up

Issue 32
Spring 2023

Archaeology Finds Reporting Service Newsletter



Welcome to Issue 32 of ***Dredged Up***, the newsletter of the Marine Aggregate Industry Archaeological Protocol. Since the last newsletter in Autumn 2022, **10 finds** have been reported in 10 reports.

We celebrate this year's finds awards winners on pages **2** and **3!** A huge congratulations to the recipients of the awards that include best attitude by a wharf, best attitude by a vessel and best find.

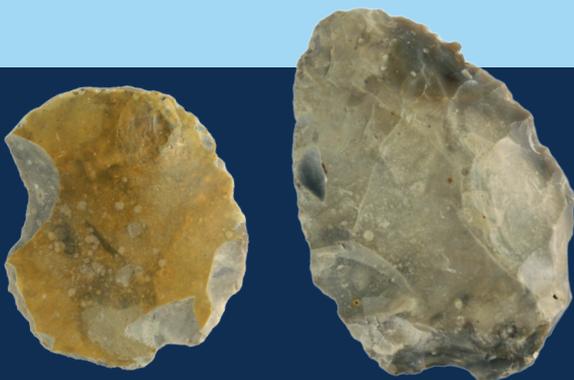
Pages **4** and **5** take a look at a selection of the amazing finds reported since the last newsletter. There were many to choose from and we would like to thank each and every person who reported them.

On Pages **6** and **7** we take a look at one of the most unique and exciting finds reported through the Protocol; a shipwreck found in CEMEX's Denge Quarry! Find out more about the first terrestrial find reported through the Protocol, as seen on BBC's Digging for Britain!

The first awareness visits of the year are celebrated on page **8**, when the Implementation Team went to Tarmac's Tilbury and Greenwich Wharves in February.



Archaeologist Ben Saunders investigating a section of the wooden shipwreck reported from CEMEX's Denge Quarry



Stone tools of late Middle Pleistocene age (337,000-130,000 BP)

Discover more of the fascinating prehistoric archaeology that has come to light through almost 20 years of Marine Aggregate Industry Archaeological Protocol in this handy digital StoryMap!

https://storymaps.arcgis.com/stories/2968f0b4062245ee815d04124bbd9368?fbclid=IwAR3hMODzQnq40XN9BMPiFRJBqIvJNngugqPL_E-PobuSGPr1oh60LPogJHBU

2021-2022 Finds Awards

It's time to celebrate the annual Finds Awards! In this issue, we are pleased to announce the winners and runners up from the 2021–2022 reporting year which runs from 1 October 2021 until 30 September 2022. Anything found after this date will be considered for the next Finds Awards in spring 2023. For details about all of the discoveries that were made during the 2021–2022 reporting year, you can access and download a copy of the Annual Report online: www.wessexarch.co.uk/sites/default/files/field_file/Protocol_annual_report_2021-2022.pdf

Best Attitude by a Vessel

This year we congratulate Hanson's *Arco Avon* for winning this award. During the 2021–2022 protocol year this vessel reported six finds within three reports: **Hanson_1026**, **Hanson_1035** and **Hanson_1036**. Congratulations to finders M. Morley and Lance Allen!

Hanson_1026 is a collection of three objects including a baseplate of a naval shell (Image 1), one mineralised animal bone from a large mammal (Image 2) and one item that has not yet been identified (Image 3) (although specialists agreed with the vessel staff that it could be a weight or a component associated with rigging gear).



Image 1: baseplate of a naval shell. **Image 2:** mineralised animal bone from a large mammal. **Image 3:** unidentified object, possibly a weight or a component associated with rigging gear



Above: Hanson_1036 (bottom) and Hanson_1035 (top) together

Hanson_1035 is a largely intact cannonball measuring over 150 mm in diameter. Images of the cannonball were sent to Charles Trollope, an expert in historical ordnance, who said that this is a nice example of a 68-pounder shot and must be English as neither the Dutch nor French used shots this large. The state of the cannonball shows that this was almost certainly cast direct from the furnace. The 68-pounder shot was made for carronade cannons, which made their first appearance with the Royal Navy in 1778. These cannons were developed in order to attack the ever more heavily armoured ships of the line and have been described by historian John Talbott as 'a bulldog of a naval gun: short, squat, ugly and extremely effective at close range.' (Talbott 2013).

Hanson_1036 consisted of two objects, including the ball end of a bar shot and a conical object, that looks like a sounding weight. Bar shots are a type of cannon projectile formed of two cannonballs, or half-balls, joined by a solid bar. The weight on either end of the bar would cause it to partially rotate after it was fired out of a cannon, inflicting maximum damage on sails and rigging. It is possible the shot was fired, causing the ball end to break off from the bar shot but this is not certain, though its excellent condition indicates that it has been undisturbed since its deposition. Charles Trollope, an expert in historical ordnance, identified this one to be a 3 to 4 pounder size and dates to the 17th century.

Euan McNeill of the Coastal & Marine team at Wessex Archaeology suggested the conical object looked like a sounding weight, used to measure the depth of a body of water, but missing the attachment point. Tallow would be placed in the depression at the bottom to check seabed type by examining sediment collected from the seafloor, which stuck to the animal fat. Alistair Byford-Bates, also from the Coastal & Marine team suggested it appears to be made of ironstone but as there is no oxidation, this is unclear. The object may have snapped loose during use or fallen overboard.

References

Talbott, J. E. (2013). *The Pen and Ink Sailor: Charles Middleton and the King's Navy, 1778-1813*. London, Routledge.

Best Attitude by a Wharf

This year we would like to recognise the staff at **Clubbs Denton Wharf!** Since new manager Mark Wraight started, he and the rest of the Wharf staff have had a great attitude with requesting a visit from the Implementation Team for awareness training. They have subsequently reported many great finds, including cannon fragments that were featured in the last edition of *Dredged Up* alongside aircraft components and a mill stone.

Image 1: Tony McKenna (Assistant Manager of Denton Wharf) holding *Clubbs_1030* and *Clubbs_1031*.

Image 2: Brad with remains of cannon *Clubbs_1024*.



Best Find

The best find of this reporting year goes to **Brett_1019**. This find consists of three aircraft parts and 43 munitions all discovered within the same cargo dredged from Licence Area 340 in the South Coast dredging region, approximately 8.5 km south-east of the Isle of Wight. Paul Russell and Conrad Stuckey discovered the objects at Newhaven Wharf.

Wharf staff alerted the Implementation Team that they may have come across aircraft wreckage. In the initial report they highlighted that there is still paint remaining on one of the parts, potentially in a camouflage pattern. Images were sent to external specialist Steve Vizard who said that the larger piece (seen below) is an engine valve that looks to be from a radial engine type, and the ammunition is .50 calibre, therefore initially pointing towards an American aircraft. Apart from the Mustang, which had an inline Merlin engine, most Second World War American aircraft used a radial engine and all American aircraft had .50 calibre Browning machine guns. He said that previous experience would lead him to believe that it's more likely to be a bomber than a fighter, which could mean that if it were outbound, there could well be heavy ordnance in the area. However, most ditched their ammunition on the way back. Steve confirmed with a colleague that the engine valve is from a Wright Cyclone. This large radial engine was predominantly fitted to the American B-17 Flying Fortress and this is further confirmed by the aluminium strut section that appears to be a wing rib brace from a B-17.



The American Boeing B-17 Flying Fortress is a four-engine heavy bomber developed in the 1930s for the United States Army Air Corps (USAAC). It proved reliable and efficient enough to be used in almost every theatre of the Second World War. Legendary for its ability to sustain heavy damage in battle and bolstered by its nearly self-sufficient firepower, B-17s were most often used for daytime raids over Germany, as well as to wreak havoc on enemy shipping in the Pacific. Steve was also asked what the likelihood was of an entire aircraft wreck being on the seabed in this area. He said that it would be presumed that these parts wouldn't be too far away from the wreck site, however, depending on the amount of fishing and trawling that has taken place over the last 75 years, the parts could be distributed over a large area. Staff at the wharf have been asked to be vigilant for any other aircraft material dredged from this licence area.

More details about this find can be seen in the 2021-2022 Annual Report where it featured in Case Study 2 alongside Brett_1032.

All our winners receive a £100 cheque and a certificate of their achievement. Congratulations to you all!

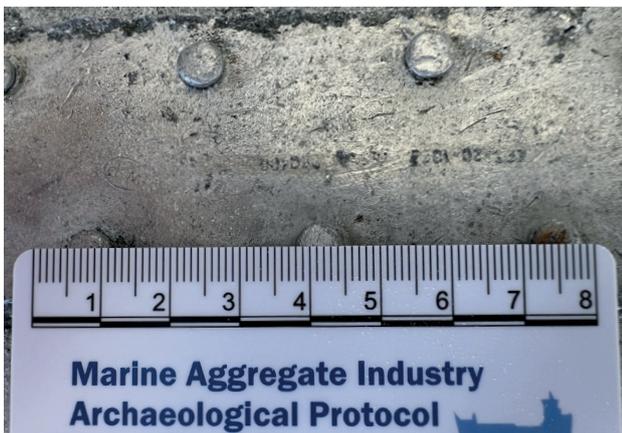
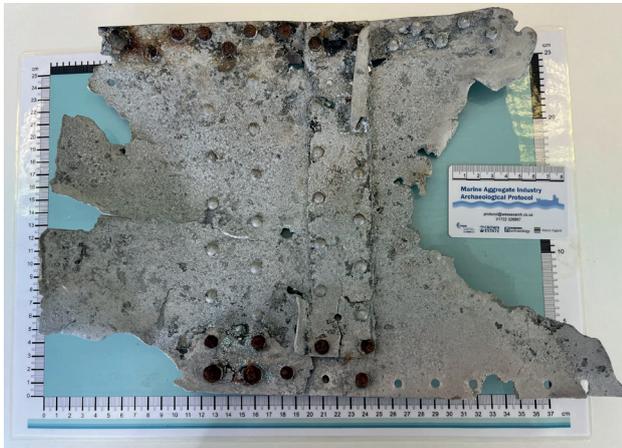
Finds Roundup

Tarmac_1049

Tarmac_1049 (seen below) is a fragment of aircraft that was discovered in Licence Area 430, in the East Coast dredging region, approximately 23 km east-south-east of Southwold. Lewis Bell, Mark Wakefield and Ben Macmillan discovered it on board the *City of London*.

This find was reported as a piece of aluminium covered in rivets or bolts measuring approximately 420 mm by 320 mm. Photographs of the object were sent to external aircraft specialist, Steve Vizard. He stated that it appeared to be from an aircraft, possibly a web plate from a wing spar or a large wing rib. Following consultation with an American aircraft specialist, the object is thought to have come from a United States Air Force aircraft, but it is impossible to say which one. Unfortunately, the visible numbers and markings present on the object (WP, EF3520 10, 00.0 01.02.37) don't give any clues.

As this item is related to an aircraft, it may be part of an aircraft site for an aircraft that was ditched or crashed. There are no records of an American aircraft crash site off the coast of Great Yarmouth, although there are records for several RAF crash sites as well as the site of a German Dornier Do 217 approximately 12 km away. Depending on the amount of fishing and trawling that has taken place over the last 75 years, there is the possibility of parts being dragged or dumped by fishing vessels. For instance, fishermen may jettison such objects found in their nets in an area where they don't fish, so that they won't be netted again. Therefore, this part could come from a site located some distance away.



Brett_1054

Brett_1054 (seen above) is a torpedo depth gauge cover that was discovered in Licence Area 351 in the South Coast dredging region, approximately 12 km south-east of the Isle of Wight. Matthew Reardon discovered it at Cliffe Wharf.

This find was described by wharf staff as being a brass and copper item, possibly a pressure or temperature gauge. Wharf staff noted many details about the find including that it is curved, possibly in order to be mounted on the inside curve of a cylinder with a rubber diaphragm on the mounting face. There are also many small details present on the find including a series of stamps which include letters, numbers, and a MOD broad arrow mark.

Images of the find were sent to senior naval engineer, Anthony Mansfield. He agreed with wharf staff that it is some sort of pressure sensing device, as the rubber diaphragm makes that reasonably clear. Anthony agrees that the curve on it seems to indicate that it would have been mounted inside a cylindrical object. Combined with the clue offered by the broad arrow, Anthony suggested that this find was part of a depth control device for a torpedo. With this information, images were then sent to ordnance specialists Mark Khan and Trevor Parker. They stated that the stamps on the find, including the broad arrow, indicate that this was indeed part of a torpedo. The stamps include '18" VIII' which implies that this was part of an 18" Mark VIII Torpedo. These torpedoes were used on submarines during the First World War and also dropped from aircraft between 1920 and 1937. They weighed 1736 kg and had an explosive charge of 145 kg TNT. Mark suggested that the '1035' stamp might be linked to the manufacture date as it's within the service date range of use.

Trevor contacted further specialists who concluded that the part appears to be the external hydrostatic piston and pendulum depth control cover of the torpedo. The black oval shape would be the diaphragm part that 'flexes' and relays the external water pressure to the internal pendulum mechanism. The mechanism then controls the set depth of the torpedo and performed by mechanical linkage to the depth planes located on the tail section. We cannot be sure exactly how this find entered the marine environment, however, it is likely that the torpedo was fired as a training exercise or in conflict.



Tarmac_1055

Tarmac_1055 (seen below) is a cattle femur that was discovered in either Licence Area 430 or 460 in either the East Coast or East English Channel dredging region, off the coasts of Southwold and Eastbourne, respectively. Ian Massey discovered it at Tilbury Wharf and it is the first find reported to the Protocol by this wharf.

The bone is approximately 200 mm in length and has a width of 140 mm. Staff noted that it was a clean cut straight through the shaft of the bone. Images were sent to Wessex Archaeology's animal bone specialist, Lorrain Higbee. She identified the bone as the distal end of a right cattle femur that has been sawn through. The femur, or thigh bone, is the longest and strongest bone in the body. The distal end is the lower part of the bone, which is identifiable by two large prominences (or condyles) on either side of the end of the bone that form the upper half of the knee joint, which is completed below by the patella (the kneecap) and then the tibia (the shin bone) below that.

The clean cut is most likely a saw mark, however the characteristic lines have eroded away. Wessex Archaeology Geoarchaeologist Sander Aerts described the find as 'classic butchering waste'. This gives us a clue into how the bone may have entered the marine environment. Butchered animal parts as well as live animals were carried on vessels to be consumed on board, with bones and waste products usually discarded overboard. Beef seems to have been the staple diet of many ships but was often transported in butchered and preserved form, examples of which have been found in many shipwrecks. This includes the *Mary Rose*, in which excavations of the wreck recovered eight casks containing over 2,000 butchered cattle bones.



Hanson_1047

Hanson_1047 (seen above) is a munition that was discovered in Licence Area 461 in the East English Channel dredging region, approximately 49 km south of Eastbourne. Tom Shenton discovered it at Frindsbury Wharf. This UXO was reported by the staff to the explosive ordnance disposal (EOD) team to be blown up. Afterwards, the safe shell was returned to the wharf with a new split. Staff reported the shell as containing a parachute in the backend and some markings on the exterior. From this they identified the find as a 4-inch star shell.

Images of the find were sent to ordnance specialists Trevor Parker and Mark Khan. Both agreed with the wharf staff's identification of the find as a star shell. However, Trevor wasn't sure about the calibre, as it might be a slightly more recent example of a 4.5-inch star shell rather than a 4-inch. Not all artillery shells are designed to be destructive, and could be designed to carry objects, create smoke screens, or in this case offer illumination. The star shell carries a very bright flare that is attached to a parachute. At the peak of its arc of flight a small charge 'kicks' the flare out of the shell, which slowly descends whilst lighting up an area beneath and around it. Typically, the flares would burn for about 60 seconds. This could be used to illuminate a battlefield or as a means of passing signals between groups. These flares were sometimes multi-coloured with different colours serving to pass along a pre-given signal and were sometimes sent up without parachutes. These flares were used at sea, although radar has mainly replaced them. This find may originate from a wreck or may have been lost overboard.

An Unexpected Discovery in CEMEX Quarry

In April 2022, during dredging operations at CEMEX's Denge Quarry near Lydd-on-Sea, on the Romney Marshes in Kent, a number of substantial ship's timbers were recovered by the backhoe dredger that operates at the quarry. These included at least four large sections of hull which were recovered alongside other timbers from approximately 4–6 m below the water level of the quarry.

CEMEX voluntarily established an archaeological exclusion zone around the location of the finds, as it is believed that further material could be present. The wreck was reported to the Marine Aggregate Industry Archaeological Protocol and an initial site visit was carried out by Wessex Archaeology in order to confirm whether the material was of archaeological interest. It was immediately identified that the wreck could be significant due to its construction method and lack of iron fastenings. Due to the potential significance of the remains and rapid degradation it was agreed with Kent County Council and Historic England to proceed with a phase of emergency recording whilst a wet storage solution could be arranged. A team of archaeologists from Wessex Archaeology recorded the timbers using a mixture of sketches, traditional tape measurements, detailed photography, an Artec 3D scanner, and photogrammetric survey. In order to inform the dating assessment, a programme of dendrochronological sampling was carried out alongside the recording.

Over 140 timbers from the ship's hull were recovered. Dendrochronological analysis funded by Historic England and undertaken by Robert Howard confirmed the vessel was made of English oak and dated the timbers used to build the ship to between 1558 and 1580. This date range places the ship at a transitional period in Northern European ship construction when ships are believed to have moved from a traditional clinker construction (seen in Viking vessels) to frame-first-built ships (as recorded here). Using this carvel construction technique, the internal framing is built first and flush-laid planking is later added to the frames to create a smooth outer hull. The *Mary Rose*, which was built between 1509 and 1511, is one example of this technique alongside the ships that would explore the Atlantic coastlines of the New World.



One of the biggest mysteries regarding this wreck is how it got to its current location, as the quarry is 300 m from the sea. Unlike the site today, until at least the 13th century the area was made up of marshes, islands, open water courses and a changing landscape, with the estuary of the river Rother just to the north. Large scale ship building still occurred at Smallhythe until the 1600s, when the river Rother estuary silted up, moving the river course to the south of the Isle of Oxney. Experts believe the quarry site would have once been on the coastline, and that the ship either wrecked on the shingle headland or was discarded at the end of its useful life and subsequently became buried by the accumulated sands and gravels.

Very few English-built 16th century vessels have survived, making this a very rare and exciting discovery from what was a fascinating period in the history of seafaring. Its discovery presents a fascinating opportunity to understand the development of the coast, ports and shipping of this stretch of the Kent coast. Once recording was completed the timbers were reburied in the quarry lake where they had been discovered so that the sediment can continue to preserve the remains.

This is the first time that a find has been reported from a terrestrial quarry to the Protocol. The discovery really highlighted the robustness of the Protocol, and the fact that wharf staff are so well trained in the reporting process that they carry their training over to new situations. A huge thank you to staff at CEMEX's Denge Quarry for their reporting of the wreck and for hosting the archaeologists during the recording phase. A huge thank you also to Kent County Council for managing the project and to Historic England for the emergency funding.

The story of the recovery, recording and dendrochronological analysis of the ship was featured on Episode One, Series Ten of Digging for Britain on BBC2, which aired on 1 January 2023 (and can still be viewed on BBC iPlayer).

Image 1: One of the Wessex Archaeology team carefully records the timbers. **Image 2:** Marine archaeologist Paolo Croce recording the timbers using an Artec 3D scanner.

Image 3: A team of archaeologists from Wessex Archaeology recording a section of the hull. **Image 4:** Archaeologist Ben Saunders taking detailed photos of timbers. **Image 5:** Andrea Hamel in Digging for Britain studio.

"To find a late 16th-century ship preserved in the sediment of a quarry was an unexpected but very welcome find indeed. The ship has the potential to tell us so much about a period where we have little surviving evidence of shipbuilding but yet was such a great period of change in ship construction and seafaring."

Andrea Hamel, Marine Archaeologist at Wessex Archaeology

"The remains of this ship are really significant, helping us to understand not only the vessel itself but the wider landscape of shipbuilding and trade in this dynamic period. CEMEX staff deserve our thanks for recognising that this unexpected discovery is something special and for seeking archaeological assistance. Historic England has been very pleased to support the emergency work by Kent County Council and Wessex Archaeology."

Antony Firth, Head of Marine Heritage Strategy at Historic England



Protocol Awareness Visits

We kicked this year off with our first Awareness Visits to wharves in February. Andrew Bellamy, Resources Manager at Tarmac, reached out to the Implementation Team to organise Awareness Training for Greenwich and Tilbury wharves. Tilbury wharf is Tarmac's newest marine aggregate landing point and it had been some years since the last visit was held at Greenwich, so there was a need to revitalise the Protocol initiative at these sites!

The sessions are designed to be informal and involved an interactive presentation from the implementation team to explain the different ways archaeology can reach the seabed and what to do if it is found in the cargo landed at the wharf. The reporting process was discussed and an array of archaeological finds previously reported through the Protocol were passed around for staff to handle. Andrew also attended the training sessions and brought a large fragment of mammoth tusk with him from Tarmac's own display case! Handouts, laminated scale sheets, photo scale cards and the last edition of *Dredged Up* were also passed around. The handouts are designed to be left at the wharf to enable Site Champions to

induct future new employees and so that current employees can refresh their memories. All archaeological awareness materials can be accessed through the Protocol pages on Wessex Archaeology's website (www.wessexarch.co.uk/our-work/marine-aggregate-industry-protocol-reporting-finds-archaeological-interest) and are available in English, Dutch and French.

The Protocol Implementation Team firmly believe that these visits are key to the scheme's success as it promotes enthusiasm and resolves any issues that may arise. As well as delivering the training, the visits allow the team to maintain contact with wharves and vessels, keep the content fresh, boost interest in the Protocol and promote it to both new and existing staff. Since the Awareness Visit we have already had several great finds reported, including the first to be reported by Tilbury wharf, Tarmac_1055!

If you would like to book a Protocol Awareness Visit or would like to receive more advice on finds and the reporting process, then please get in touch by emailing protocol@wessexarch.co.uk or calling 01722 326867.



Top left: Tilbury Wharf. **Top right:** Greenwich Wharf. **Bottom:** City of London, taken by Wessex Marine Archaeologist Lowri Roberts during a wharf visit.