

# Dredged Up

Issue 31  
Autumn 2022

Archaeology Finds Reporting Service Newsletter



Welcome to Issue 31 of ***Dredged Up***, the newsletter of the Marine Aggregate Industry Archaeological Protocol. Since the last newsletter in Spring 2022, **41 finds** have been reported in 25 reports.

Pages **2** and **3** showcase some of the amazing finds that have been reported since the last issue of *Dredged Up* by wharves and vessels alike. There were many to choose from and we say thank you to each and every person who reported them.

Work to enhance the resolution of the existing British Geological Survey resource maps for the Marine Aggregate Industry have led to some impressive new finds. Pages **4** and **5** report an exciting new find revealed in these surveys.

Reminders of the United Kingdom's long and extensive naval history are often discovered within marine aggregate cargoes. Pages **6** and **7** will look at some of these exciting finds, including the numerous cannonballs reported through the Protocol as well as recently reported cannon fragments.

Just for fun, on page **8** we have a Marine Aggregate Industry Archaeological Protocol themed crossword!



Brad with remains of cannon - see page 6 to learn more!



## Latest Discoveries...

The latest discoveries reported through the Protocol are now available on the Marine Aggregate Industry Archaeological Protocol Facebook page. Like and follow our page to keep up to date!



[www.facebook.com/marineaggregateindustryarchaeologicalprotocol](https://www.facebook.com/marineaggregateindustryarchaeologicalprotocol)

## Finds Roundup

### CEMEX\_1027

**CEMEX\_1027** is a spoon which was discovered in Licence Area 137 in the South Coast dredging region, approximately 6.5 km south-west of the Isle of Wight. M Nichols discovered it at Shoreham Wharf. This find was the first to be found by the new *Hanson Thames* vessel!



This metal spoon measures approximately 200 mm in length and 60 mm at its widest point. The bowl of the spoon has sustained damage, although it is unknown whether this happened before entering the marine environment, whilst on the seabed or through the dredging process. Despite the damage on the bowl, the maker's stamp "John Round & Son Ltd" is very visible on the reverse of the handle. Research on the stamp revealed that it was made in Sheffield, as was a lot of cutlery during the 19th century. Based on the wording of this stamp containing the word "Ltd", this allows the spoon to be dated to between 1874 and 1962. Although the company that made it also produced silver cutlery, the lack of a hallmark indicates that this is not silver. It is possibly a base white metal such as nickel silver. How this object entered the maritime environment is unknown. It may be from an unknown wreck, but more likely it was lost or thrown overboard during everyday shipboard operations. There are some theories that cutlery were thrown overboard on a return journey to avoid washing them up!

### CLUBBS\_1030

**CLUBBS\_1030** is an unusual find made of limestone which was discovered in Licence Area 407 in the South Coast dredging region, approximately 15 km south-east of the Isle of Wight. Kevin Cruickshank discovered it at Clubb's Denton Wharf. This find was reported by the wharf as a mill stone weighing approximately 1.5 kg and with an approximate diameter of 240 mm. Wessex Archaeology Technical Specialist Phil Andrews and Senior Archives Manager Lorraine Mephram were sent the images and both agreed that the small size and soft material would make it unusual to be a mill stone or even a quern stone. The funnelling of the central hole on one side might be suggestive of this being the upper stone of a pair. On the funnelled side are three (originally likely to be four) little recesses which appear genuine, and one possibility is that it is a grindstone (though limestone would again be an unlikely choice). Our experts said that it could perhaps be a rotary grindstone mounted in a frame. If so, Lorraine found a possible medieval parallel from Exeter. After reviewing further photos provided by the wharf, they said it looks much less likely to be a grindstone as there is no flat grinding edge and so more likely to be a quern stone. They called it an interesting and slightly enigmatic find! It is unclear how this object made its way to a marine environment. Perhaps when this stone reached the end of its working life, on land, that it was used as a ballast stone on an older vessel.





## DEME\_1039

**DEME\_1039** is an animal bone which was discovered in Licence Area 478 in the East English Channel dredging region, approximately 12 km south-east of Great Yarmouth. Gerard Kegel discovered it at DBM Wharf in Vlissingen, Netherlands. This animal bone measures 300 mm long and 70 mm wide and shows no signs of butchery.



Images of the bone were sent to Wessex Archaeology's animal bone specialist, Lorrain Higbee, who said that it is definitely the right radius of a bovine i.e., cattle. Along with the ulna, these two bones make up the forearm. In mammals each epiphysis (the end of long bones) is initially separate to the diaphysis (main shaft section of the bone). As an animal matures these parts of bone will fuse together, with each epiphysis having its own predetermined age of fusion. The timing of this fusion is well-known for humans, domestic mammals, and some wild animals (such as reindeer, deer, and brown bears, for example). Therefore, bones with unfused or fusing epiphyses can be used to estimate age-at-death. The distal epiphysis (the end of the bone which connects to the wrist) is unfused in this case. The epiphyseal fusion of this element in cattle is usually between 3.5-4 years old, therefore this indicates that the animal was still a juvenile.

The bone is largely intact indicating that it has been relatively undisturbed since it was deposited on the seabed. The remains of animal bones can end up in marine contexts having been washed from terrestrial deposits by rivers or eroded from cliffs or beaches. Alternatively, it may be the result of animals being carried on vessels to be consumed on board before the bones were discarded overboard. Beef seems to have been the staple diet of many ships but was more often than not transported in preserved form, which has 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.

## Brett\_1032

**Brett\_1032** comprised aircraft components that were discovered in aggregate from Licence Area 340 in the South Coast dredging region, approximately 8.5 km south-east of the Isle of Wight. Conrad Stuckey discovered them at Newhaven Wharf. These various aircraft parts, including an engine fragment, were discovered in the same cargo, alerting the wharf staff that they may have come across aircraft wreckage.

Images were sent to external specialist Steve Vizard who said that as far as he can tell, these parts are from a BMW 801. This particular engine was fitted to three types of German aircraft that operated over the UK. These being the Focke-Wulf 190 fighter (although not particularly common over here), the Dornier 217 bomber and the Junkers 88. Further research was done on Area 340. It was found that there is an exclusion zone in place for an aircraft wreck, however that is for a Piper aircraft that lost power in both engines and ditched at sea on 29 July 1975 (UKHO 19021) and therefore not related to these finds. An aircraft crash site location report revealed that there are no recorded losses in the immediate area. The closest record of German aircraft wreckage is a 1944 German Junkers Ju188, which was shot down and crashed off Sandown 6 km north-west of where these finds were discovered. The aircraft was part of Squadron 5/KG2. It is presumed that these parts wouldn't be too far away from the wreck site, however sometimes aircraft break up on entry to the water and scatter over a wide area. It cannot be confirmed whether these finds are related to this site.



Additionally, considering the amount of fishing and trawling that has taken place over the last 75 years, the parts could be distributed over a large area. Also, there is the possibility that fishermen may jettison such parts found in their nets in an area where they don't fish so they won't be netted again. Staff at the wharf have been advised to be vigilant for any other aircraft material dredged from this licence area.

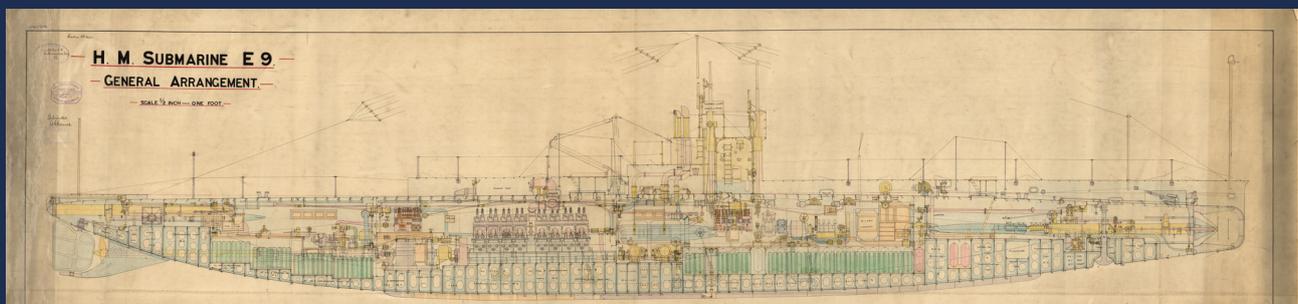
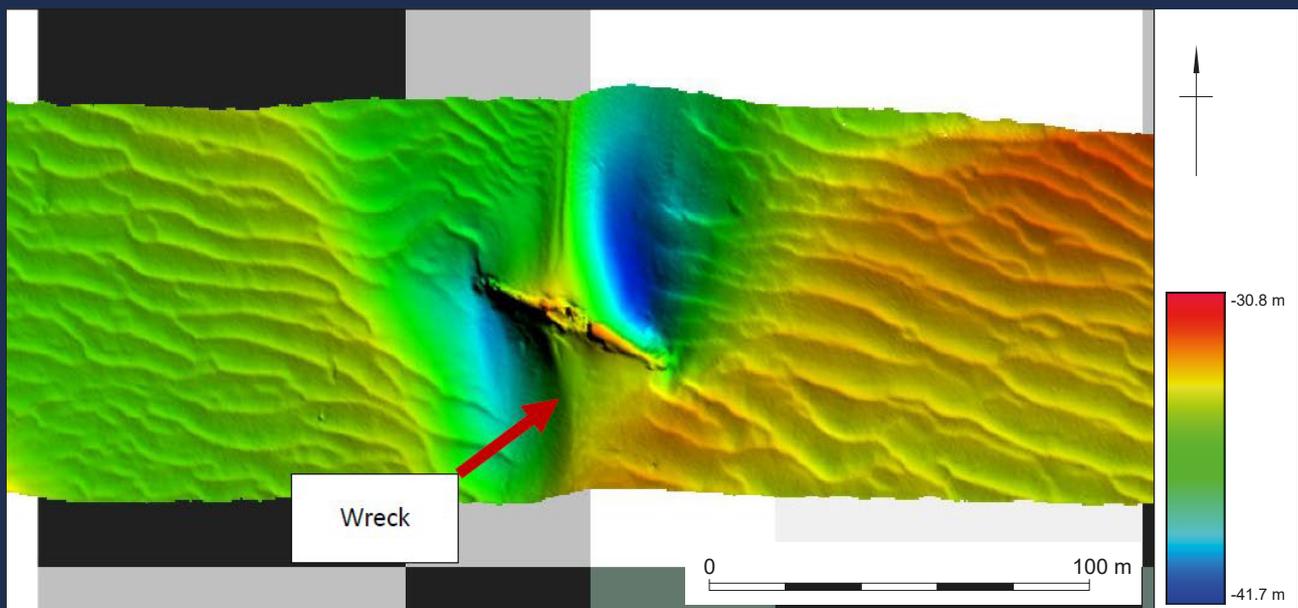
## WWI Submarine Wreck Revealed by Geophysical Survey

Marine aggregates are an essential component of the UK building materials supply chain, and the anticipated scale and speed of marine development is leading to increasing competition for seabed space and environmental capacity. In 2019-20, The Crown Estate commissioned Royal HaskoningDHV to undertake work to enhance the resolution of the existing British Geological Survey (BGS) resource maps, with the aim of creating a High-Resolution Resource Inventory for marine aggregates in English and Welsh waters. The project identified a requirement for geophysical data recovery from a total of 1,300 kilometres of survey lines, targeting the upper portion of the seabed, across four key seabed regions; the East English Channel; the Thames Estuary, the East Coast, and the Humber.

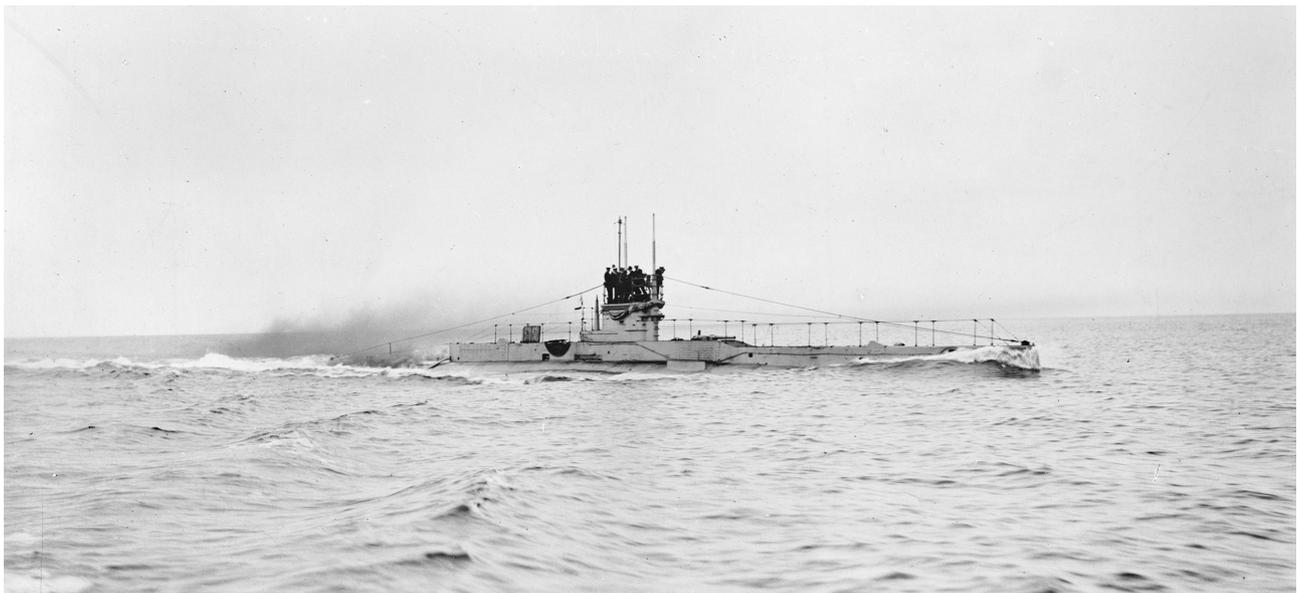
Marine geophysical survey is a collective term for remote-sensing techniques which can be used to investigate the physical characteristics of the underwater landscape. These methods allow us to assess the archaeological potential of the marine environment in a non-intrusive manner. Bathymetry uses sonar pulses to measure and record the sea floor depth and any anomalies which may be present.

During the survey, the high-resolution bathymetry images revealed the wreck of a submarine, located around 70 km off the coast of East Anglia. The almost intact vessel was lying, totally uncovered, on the seabed, in around 35 m of water, with the hull broken just behind the conning tower.

Due to its location, it was identified as wreck ID 28012 on the Admiralty database. Following the long and successful relationship between Wessex Archaeology, The Crown Estate, and the British Marine Aggregate Producers Association (BMAPA) to protect our underwater cultural heritage by running the Marine Aggregate Industry Archaeological Protocol, The Crown Estate asked Wessex Archaeology to assist with identifying this wreck and researching its history. Subsequent research shows that the submarine wreck is that of HMS E22. The E-class submarines served with the Royal Navy throughout the First World War as the backbone of the submarine fleet with the last surviving ones withdrawn from service by 1922. HMS E22 had a total length of 180 feet (55 m) and a beam of 22 feet 8.5 inches (6.9 m).



**Above:** a bathymetric image of wreck ID 28012, HMS E22.  
**Below:** a plan of the E9 submarine, similar to the E22



**Above:** E-class Submarine underway

**Right:** a photograph of the conning tower of the E22 with members of her crew aboard

The E22 was involved in the first experiment by the Royal Naval Air Service to use a submarine to carry aircraft on 24 April 1916. The submarine was modified to carry two Sopwith Schneider seaplanes on the rear casing. The boat would then submerge in calm waters and the planes would float on the surface before taking off and then returning to the East coast of England at Felixstowe. The trials were not repeated due to the structural failures the two aircraft suffered during the trial, leading to neither taking off, compounded by the subsequent loss of the E22 and its logbook (Treadwell 2009).

The following day, at around 11:50 am, the E22 was torpedoed whilst on the surface by the German U-boat, UB-18, off Great Yarmouth. At which time the submarine's commander Lieutenant Reginald Thomas Dimsdale had been in command of the submarine for only six days. The only two survivors, Engine Room Artificer Frederick Samuel Buckingham (aged 26) and Signalman William Thomas George Harrod (aged 23), who was the lookout, were taken prisoner by the U-Boat. The two men were recovered after an hour and a quarter in the water by UB-18, commanded by Lieutenant Commander Otto Steinbrink, and became Prisoners of War for the remaining duration of the war at a prison camp in Dülmen, near Münster, in Westphalia.

We are fortunate that the German Navy's records for the attack have survived. The war diary for the UB-18 patrol concerning the sinking of HMS E22 was translated during this research and was an interesting counterpoint to the statement by Buckingham, including that the U-boat also hunted for a second British submarine that it had seen before returning to pick up the two survivors.

The E22 was one of only four submarines known to have been lost to a German submarine torpedo attack during the First World War, out of a total of 137 in service, with 54 boats, including 26 of the 57 E-class vessels built, being lost or scuttled during the conflict. This very human story involves the loss of 33 of the 35 crew aged between 17 and 38 onboard, and is a sobering reminder that the sea, which offers so much opportunity for us, can also be a difficult and dangerous place.



The Crown Estate are confident that the output of this project will assist marine planning capabilities and support decision-making in relation to the future deployment of a range of offshore assets. It will also add to society's wider understanding of the seabed, helping a broad range of stakeholders including the government, regulators, industry and academia.

**Reference**

Treadwell, T.C., 2009. *Strike from Beneath the Sea*. The History Press, Stroud.

## Clubbs Cannon Fragments

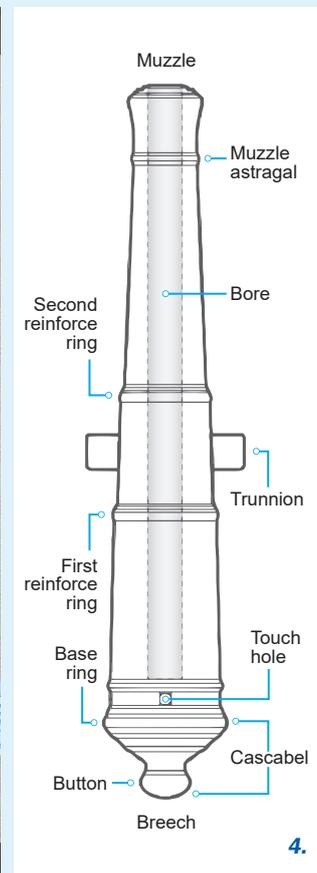
These cannon fragments were discovered in aggregate dredged from either Licence Area 512 in the East Coast dredging region, approximately 14.5 km east-north-east of Lowestoft, or Licence Area 407 in the South Coast dredging region, approximately 15 km south-east of the Isle of Wight. Brad Johnson and Adrian Hatcher discovered them at Clubbs Denton Wharf. The muzzle (**Clubbs\_1024**, Image 1) was found shortly before the cascabel, first reinforcement and second reinforcement (**Clubbs\_1025**, Image 2) were reported.



Senior Maritime Technical Specialist Graham Scott and historical ordnance expert Charles Trollope, respectively, identified these fragments as possible parts of English swivel guns. Although cast iron swivels existed before, they did not become common until after 1700.

The term 'swivel gun' refers to a small cannon, mounted on a swivelling stand or fork, which allows a wide arc of movement. Swivel guns are among the smallest types of cannon, typically measuring less than 1 m in length and with a bore diameter of up to 35 mm. Their small size enabled them to be used by a wide variety of vessels, including those too small to accommodate larger cannons, serving as short-range anti-personnel ordnance. They were not ship-sinking weapons, due to their small calibre and short range, but they could do considerable damage to those caught in their line of fire. Unlike larger cannon which were useless if they were on the wrong side of the ship, swivel guns were highly portable and could be carried across the deck to face the enemy. It is not uncommon to find a broken off muzzle as they become extremely hot when fired and can break off if they strike anything whilst recoiling.

It is difficult to say whether these parts are one gun. It is thought that the two body pieces are the same gun and while all three pieces have the same diameter bore, the muzzle itself seems to be of a slightly wider diameter. The wall thickness of the two body pieces where they would connect are consistent at 27 mm and they do match up relatively well (see Image 3, below). The wall thickness of the muzzle is slightly less but this may be because it tapers. The section of the body that would connect to the muzzle is very corroded and has lost a lot of thickness. If it was in better condition, it might be more comparable to the muzzle fragment, although the direction of the break may indicate that it belongs to the same gun. Graham noted that it is strange that the gun is in three pieces. It is unlikely that a dredger could have caused this damage and questioned why salvagers would bother breaking it into three if it's scrap, and it is a strange explosion if it's an accident. He suggested it could be fire damage but was unsure. Staff should be vigilant for other finds from the same areas.



**Above:** a photograph of the cannon fragments arranged as if part of one gun (Image 3) and a diagram of a cannon (Image 4)



# Cannonballs

Cannonballs are a common but exciting find. 10 have been reported so far this year and we've had over 100 reported since the Protocol started!

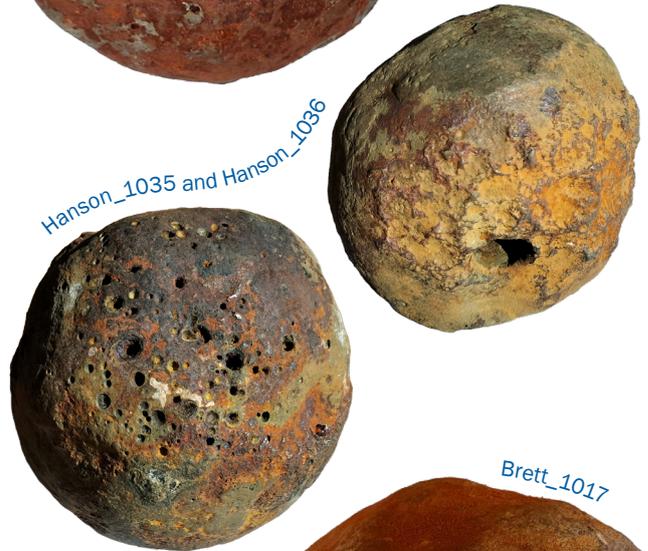
The type of shots reported vary greatly in many different factors. Qualities such as materials, weight, and size allow experts to identify the exact type of cannonball, what type of gun it may have been fired from and the original location. Examples of English, Dutch, French and Spanish cannonballs have been reported over the years, including **Volker\_0984**, which was originally an English shot but was potentially modified to be used by the Dutch or French!

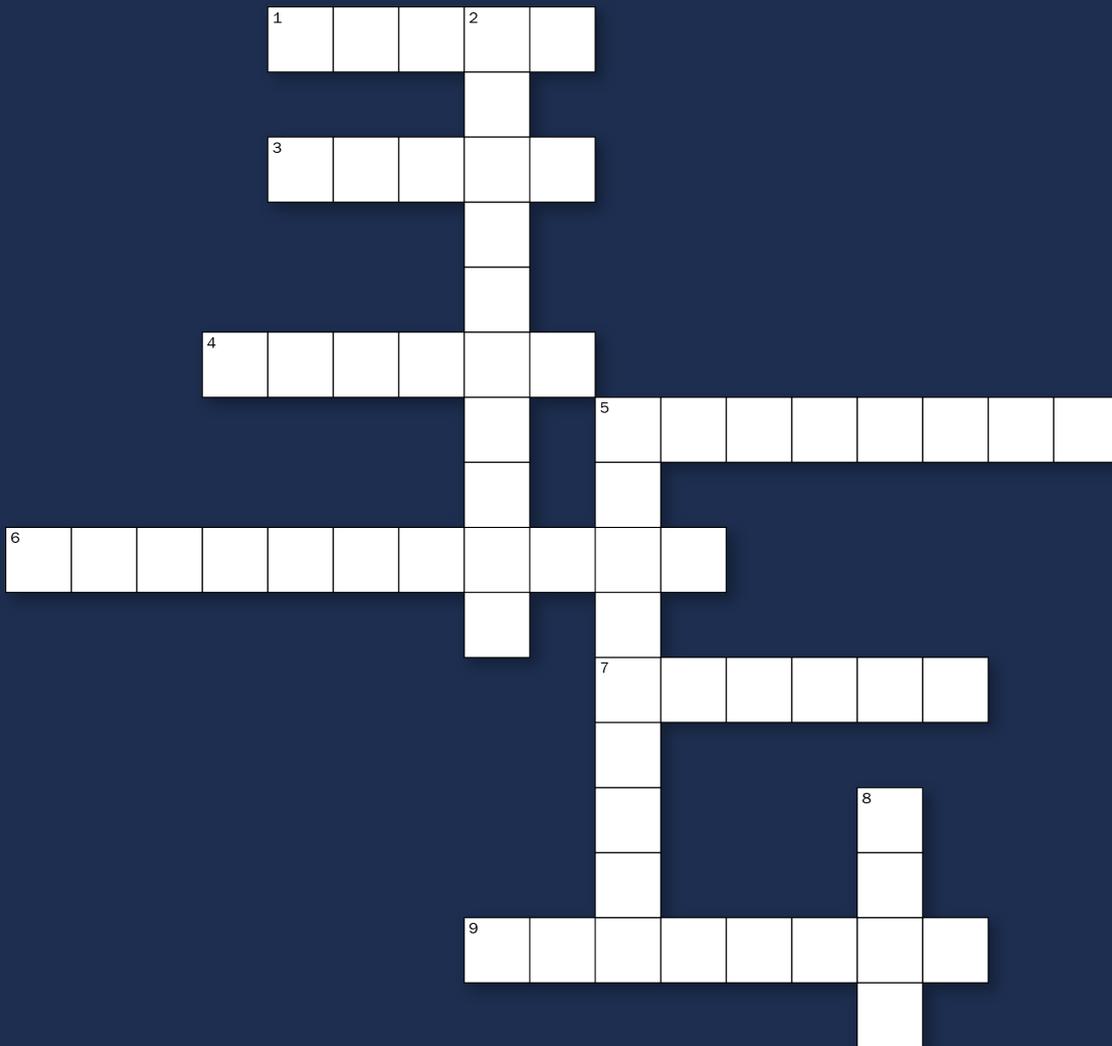
There are many different reasons why these cannonballs end up on the seabed. They could have been fired during battle, or in training exercises, or as part of salutes. They could have not been used and simply lost overboard. If we find a high volume of cannonballs in a certain area, this may be indicative of an area associated with naval warfare. The highest number of cannonballs in one report is held by **Tarmac\_0808** with a collection of a whopping 15 cast iron cannonballs. Arts University Bournemouth student James Sanchez reached out to Wessex Archaeology to ask to make a model based on one of our finds. A cannonball was a perfect choice, and he created a remarkable model, complete with removable magnetic concretion based on LTM\_0537.



**Above:** a model cannonball made by James Sanchez, based on Tarmac\_0761, **below.** Spot the difference!

**Right:** a collection of cannonballs reported through the Protocol, not shown to scale.





**Across**

- 1. A ship, aircraft or submarine that has been badly damaged and sank to the seabed (5)
- 3. Material used in the manufacture of tools during the Stone Age (5)
- 4. Relating to or found in the sea (6)
- 5. An object made by a human being, typically one of cultural or historical interest (8)
- 6. The study of human history and prehistory through the excavation of sites and the analysis of artefacts (11)
- 7. A machine with moving parts that converts power into motion (6)
- 9. Suction of material from the seabed (8)

**Down**

- 2. A round metal or stone projectile fired from a cannon (10)
- 8. Material dredged from the seabed (9)
- 8. Pieces of hard tissue making up the skeleton (4)

**If you would like to book an awareness visit then get in touch by emailing [protocol@wessexarch.co.uk](mailto:protocol@wessexarch.co.uk) or calling 01722 326867.**

**If you haven't received a mug or photo scale card then please get in touch!**

**Answers**

**Across:** 1. Wreck 3. Flint 4. Marine 5. Artefact 6. Archaeology  
 7. Engine 9. Dredging

**Down:** 2. Cannonball 5. Aggregate 8. Bone