Dredged Up

Archaeology Finds Reporting Service Newsletter

Welcome to Issue 34 of **Dredged Up**, the newsletter of
the Marine Aggregate Industry
Archaeological Protocol. Since the
last newsletter in Autumn 2023, **52 finds** have been reported in
27 reports.

Flick to Pages **2** and **3** to discover best attitude by wharf, best attitude by vessel and best find for the 2022-2023 reporting year. Congratulations to all winners and another year of amazing finds!

Pages **4** and **5** showcase some interesting finds that have been reported since the last issue of *Dredged Up*. We thank each and every one for reporting these finds.

Ordnance and UXO finds are a hot topic in this issue. See pages **6** and **7** to learn more about them.

Just for fun, on page **8** we have a crossword. Just a hint, the answers are based on this issue of *Dredged Up*.





Team News

This year we welcome a new member to our Protocol Implementation Team. Dutch Maritime Archaeologist Kirsten Pollé (left) has joined the Wessex Coastal & Marine Team in December 2023. Kirsten is already busy writing Wharf Reports and has just started visiting wharfs for Awareness Visits.

Above: Finds Processor Tony Scothern (Wessex Archaeology) on a wharf visit

2022-2023 Finds Awards

Another terrific protocol year completed, and with so many great finds, it means it's time to celebrate the 2022-2023 annual Finds Awards! These awards celebrate those groups and individuals who have gone above and beyond during the last reporting cycle and a chance to look at some of the finds they have recovered. For details about all the discoveries that were made during the 2022-2023 reporting year, you can access and download a copy of the Annual Report: www.wessexarch.co.uk/sites/default/files/field_file/Protocol_annual_report_2022_2023.pdf

Best Attitude by a Vessel

This year we would like to congratulate the crew of *Britannia Beaver*, who managed to report a total of 19 finds over the course of the 2022-2023 reporting year. These ranged from small finds like a small brass key (**Britannia_1071**, below) to bomb shackles that came from American strategic bombers (**Britannia_1074**). All of *Britannia Beaver*'s finds were recovered from Licence Area 340 off the South Coast.

There were many other amazing finds reported by different vessels; we would like to say thank you to every vessel that has reported finds through the Protocol over the past year.

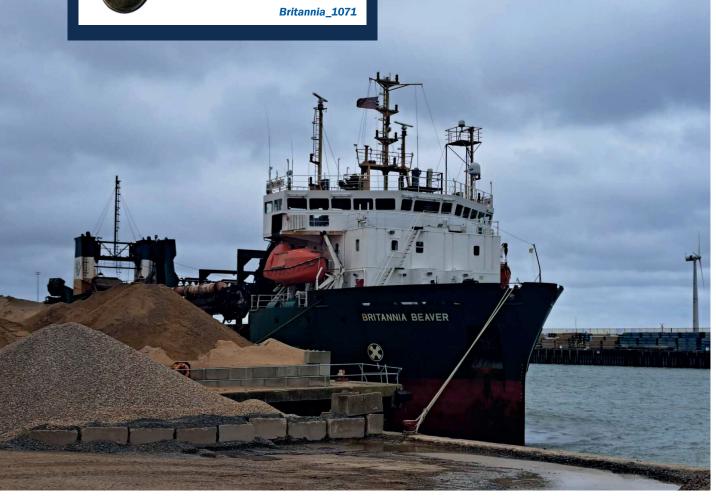


Best Find

The best find for this reporting year goes to **Britannia_1073**. Discovered by Dean Jackson and Robert Lockley, this find is a USAAF H1 oxygen cylinder, better known as a 'bailout bottle'.

For American bomber crews undertaking daytime raids, the chance of being shot down was uncomfortably high. It was therefore important that aircrew were provided with all the equipment they would need to give them the best chance of making it out of a disabled plane alive. The H1 oxygen cylinder contained around 124 bar of breathable gas and was part of the personal survival equipment carried by all USAAF aircrew. With the casualties that the USAAF Eighth Air Force were sustaining, they were desperately needed. In the event an aircraft suffered catastrophic damage, the crew's only means of escape would be to jump out of their very likely already burning aircraft.

In theory, bailing out would be attempted after the pilot had safely lowered the plane to 15,000 feet. However, after taking enough damage to need to bail out, this was clearly not always possible. This could mean potentially bailing out of your bomber at 30,000 feet. At this height, the same as Mount Everest, there was less than a third of the oxygen at sea level and the air temperature would be around -45 degrees. Most bombers were not pressurised, so crewmen would connect





breathing apparatus to ports in the airframe. When bailing, these would need to be disconnected and hooked up to the H1 bailout bottle. These would give around 10 minutes of breathing time. If this system failed, the crew were told to 'take a deep breath' before disconnecting from the plane's air supply and jumping.

Freezing temperatures and a lack of oxygen could cause bailing crewmen to pass out during this desperate escape. The consequences could be disastrous for crewmen who needed to deploy their parachutes manually. The chances of being recovered if aircrew landed in the cold waters of the North Sea or English Channel were extremely slim. If a pilot could control the aircraft, they would attempt a water landing, known as ditching. The crew would deploy inflatable dinghies and could survive a few days with the provisions they had onboard.



Britannia_1073, a USAAF H1 oxygen cylinder or 'bailout bottle'

Best Attitude by a Wharf

This year, the winner of the best attitude by a wharf is Brett's Flat House Quay in Portsmouth. A total of 15 finds were submitted in eight different reports! Those finds included a wide selection of UXO and aircraft components. We would especially like to thank Ben Johnson, Nathan O'Sullivan, Paul Stevens and Kevin Ferguson Snr for reporting these finds. The finds included:

Brett_1064: this find was initially reported as the nose cone of an aircraft. However, aviation experts suggested that the find had come from a piece of ordnance, potentially the ballistic or penetrative cap of a naval shell. Caps like this were added to shells to make them more aerodynamic and to help penetrate armour. The role of the ballistic cap changed depending on the shell and the desired effect down range: a softer cap allowed the shell to 'squash' against the target instead of shattering or bouncing off; or hardened steel fitted with a delayed fuse could punch through armour before detonating.

Brett_1067: these eight parts were collected from a single cargo, and included two engine valves, a bearing ring, a crushed flat section of soldered exhaust pipe, part of a retaining ring and parts of what may have been control rods. While predominantly made of metal, some rubber elements are still present. Ewen Cameron from the RAF Museum said that the lack of markings, serial numbers and other diagnostic information makes the direct identification of these pieces difficult. However, he was able to confirm that the pieces were most likely aircraft components.

Mr Cameron was able to identify one component as a 7" diameter radial engine valve. Radial engines were favoured by American aircraft, particularly early in the war before the introduction of the P-51 'Mustang'.

Right: Brett_1064, the ballistic cap of a naval shell Below: five of the eight pieces making up Brett_1067, some of which are



Finds Roundup

Hanson_1105 - Ship's block

This ship's block (seen right) was recovered at Dagenham Wharf following dredging in Licence Area 240 off the East Coast. Wooden blocks such as this have been in use for thousands of years and even Hero of Alexander, an ancient Greek mathematician, discusses them. A block is an assembly of sheaves mounted within a frame; a collection of these with their accompanying rope is known as tackle. Block and tackle aid in lifting by amplifying the tension force of ropes and lines used to lift heavy objects. As vessels became larger and their rigging became more complex, a ship would need an enormous array of different blocks to function. A First-Rate ship of the line from Nelson's day would set sail with over a thousand onboard. In the 19th century, the Royal Navy would order around 100,000 a year, and an early form of mass production would be established to meet this demand.

The block we see here contains a single sheave made of lignum vitae. A sheave is the wheel-like runner contained inside the block that turns with the rope. Lignum vitae is a dense hardwood from the Caribbean that was quickly adopted as the material was three times as resistant as bronze or steel in a marine environment. While this suggests the block is from the late 18th to 19th centuries, the material was still popular into the 1920s. We can see that it is an 8" ship's block, and that the recesses cut into the shell of the block suggest it was bound by a rope strop instead of iron.

Rigging material is often something that quickly degrades in the marine environment. The fact that this small piece of the fabric of naval technology, which helped build a global seafaring power, has been recovered shows what dredging can uncover.



Britannia_1107 - Parachute buckle

This piece of Second World War history was recovered through dredging operations in Area 340 off the south-east of the Isle of Wight. This buckle (seen right) formed part of the harness for either an Observer, or chest parachute harness, or seat parachute harness. The two different styles were used by aircrew depending on how mobile their role within the aircraft needed to be, with chest harnesses used by crew who might move around a larger aircraft, such as bombers, while seat harnesses were generally issued to pilots.

The buckle formed part of a Quick Release Box (QRB) that enabled aircrew to rapidly don or take off the harness as needed. Only a portion of the original markings are still visible. Originally, these markings would have read 'TURN TO UNLOCK' and 'PRESS TO RELEASE'. The flat top is fully circular, though many examples can be found to have had one edge ground down. While common, this was not an officially sanctioned modification until late in the war. The flat edge helped to prevent the release from being mishandled.

These buckles and their attached harnesses were produced in the UK and Canada during the war and were issued to RAF aircrew and American aircrew such as those flying with the 8th Army Air Force.



Britannia_1108 - Bomb shackle

Another piece of Second World War history, **Britannia_1108**, a B7 bomb shackle (seen right) was also recovered from Area 340, during dredging by *Britania Beaver*. It is the third such example that has been recovered. These bomb shackles were used to safely store munitions while in flight and then to release them over the desired target. These pieces of equipment were vital in USAAF bomber doctrine to utilise precision bombing of enemy targets. The B7 bomb shackle was fitted on the American B-17 Flying Fortress, B-24 Liberator and B-25 Mitchell.

The US 8th Army Air Force was deployed to Britain in 1942 initially as VIII Bomber Command. While RAF bomber command favoured night raids, which were safer, they did not allow for the targeted bombing of specific strategic targets. The massive armament of aircraft such as the B-17 convinced American leadership that American bombers would be able to fight through to targets to carry out daylight raids, despite the fact that in 1942 there were no Allied fighter aircraft with the range needed to escort the bombers. While the daylight raids conducted by VIII Bomber Command were undoubtedly effective, they caused significant casualties and damage to aircraft. It is possible that **Britannia_1108** represents some evidence of those damaged aircraft.

This situation would continue until the introduction of the P-51 Mustang. This fighter was capable of outflying most Luftwaffe aircraft and, most importantly, had the range needed to escort bombers all the way to their targets and safely back.





Crossword Answers (Page 8)

Across: 3. Bailing Out 4. Ditching 5. Viight Raids 6. Kirsten
7. Quick Release Box 9. Somme 12. Hero 13. Unexploded Ordnance
14. Vickers

Down: 1. Lignum Vitae 2. Britannia Beaver 8. Mustang

Down: 11. Sheave

Case Study - UXO

The seas surrounding Britain have been the battleground of many conflicts and wars. War leaves very visible evidence in the archaeological record, and some of that evidence has been recovered during dredging.

There have been eight pieces of UXO reported so far this year. They range from solid shot cannonballs from wars centuries past (Brett_1128, see image A) to less lethal ammunition from the 21st century (Brett_1124, see images B and C).

Hanson_1091 (see image **D**, relevant finds shown are one furthest left and three furthest right) and **Hanson_1097** (see image **E**) are examples of ammunition and casings. The most common round represented is the .50 BMG round, which was ubiquitous throughout Allied and later NATO forces. The round could carry an explosive, armour piercing or incendiary payload, making it very effective against aircraft.

Signal pistol rounds are further evidence of the air war that took place. What's interesting is that we now have an example of the kind of pistol that would have been used to fire them (Hanson_1100, see image F). Pistols like this fired the 26.65 mm ammunition, we can see this in Hanson_1091 (see image D) and they were used for illumination and signalling.







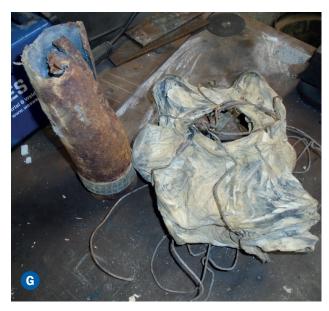








Company Health & Safety policies and established operational procedures should always take priority over archaeological reporting.

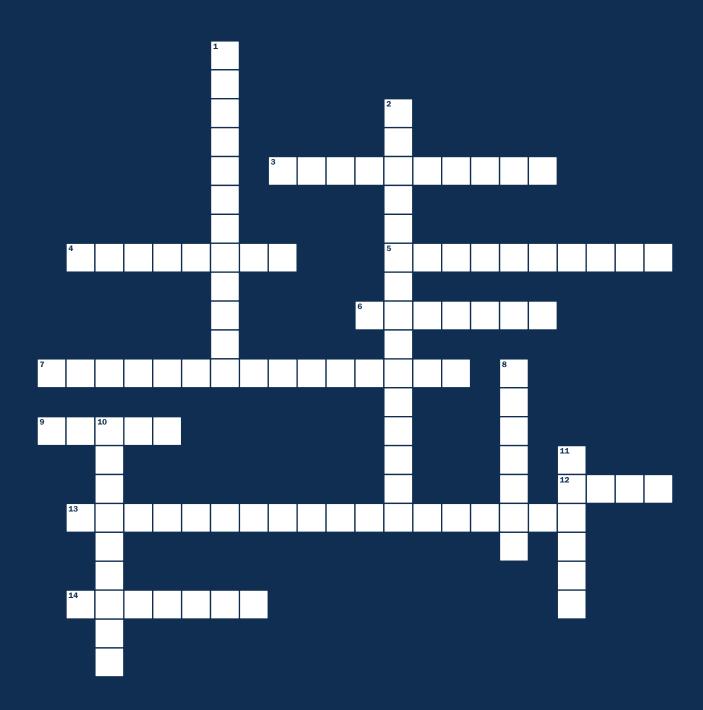


There have also been examples of larger ordnance recovered. **Hanson_1093** (see image **G**) is a 'star shell', which is an illumination round, used either for signalling or lighting up an area. Once fired at a predetermined height, the shell would deploy a parachute, allowing the burning magnesium payload to slowly descend. Exact measurements of munitions can help identify munitions and their provenance; however, company Health & Safety policies must always be adhered to, and measurements should only be taken if safe to do so.

Hanson_1102 (see images H and I) is a Type 80 time and percussion fuse. These fuses were produced by Vickers Armament from 1907 and were still in British service until 1943. During the First World War, fuses would be set depending on the target and intended effect. To remove barbed wire defences, a shell would be set to detonate on impact, blowing the wire apart and creating gaps. When attacking men in trenches, the fuse would be set to detonate at shoulder height, allowing shrapnel to rain down into open defences. Ensuring the right setting was used could be crucial to the outcome of a battle. During the 1916 Battle of the Somme, most shells were set to maximise shrapnel. This proved hopelessly ineffective at creating gaps in the German wire or against the troops sheltering in concrete reinforced dugouts.

It is important that all munitions and UXO are handled with care. However, if safe to do so, photographing and reporting munitions can enable us to learn about the struggles and sacrifices that were made in and around British waters.





Across

- **3.** Jumping from your crashing aircraft (7, 3)
- **4.** A controlled crash landing into water (8)
- **5.** Favoured RAF bombing strategy in WWII (5, 5)
- **6.** Name of archaeologist introduced in this copy of Dredged Up (7)
- **7.** QRB (5, 7, 3)
- **9.** Name of battle which took place in France, 1916 (5)
- **12.** Name of ancient Greek mathematician (4)
- **13.** UXO (10, 8)
- **14.** Name of British Arms manufacturer producing fuses in WWI (7)

Down

- **1.** Caribbean hardwood used in ships blocks (6, 5)
- 2. Name of this years best attitude of a vessel award (9, 6)
- 8. Name of American fighter aircraft in WWII (7)
- 10. Substance burned inside a 'Star Shell' (9)
- **11.** Wheel like pully inside a ship's block (6)

Check out Page 5 for all the answers!