

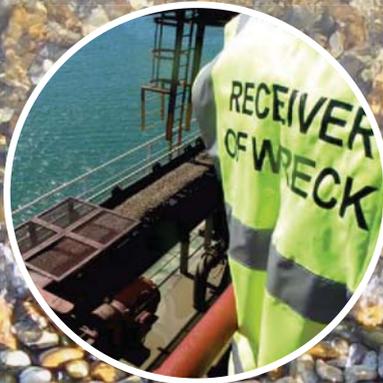
British Marine Aggregate Producers Association, Historic England and The Crown Estate

Protocol for Reporting Finds of Archaeological Interest

Annual Report to BMAPA 2014-2015

December 2015

Prepared by
Wessex Archaeology



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Project background

The Protocol is the last stage in a rigorous process to protect our submerged heritage during marine aggregate dredging.

Prior to a marine Licence being granted to dredge a particular marine aggregate production area, an intensive archaeological investigation is undertaken to identify potential submerged heritage. Archaeologists examine geophysical and geotechnical surveys, and analyse available records to identify and protect known and suspected sites of interest within aggregate extraction regions. Even after this level of investigation, unidentified sites and stray artefacts may be found with dredged loads. In response to this, a Protocol was proposed to define a framework through which such material could be reported, investigated and, crucially, protected. The Protocol ensures that any items of potential heritage importance recovered during aggregate dredging, whether encountered on the seabed, on a dredging vessel or at a wharf after a cargo is landed, can be properly assessed. Significant items can be properly recorded and archived, while in some instances further mitigation or monitoring may be required.

Wessex Archaeology drafted the Protocol in 2005 on behalf of Historic England (formerly English Heritage) and the British Marine Aggregate Producers Association (BMAPA). The Crown Estate joined BMAPA in 2009 to co-fund the Implementation Service.

Since 2006, BMAPA member companies have committed voluntarily to adopt the Protocol across all existing operations, encompassing wharves, vessels and production Licence Areas. Although adherence to the Protocol is increasingly becoming a formal condition of consent for new marine Licences and Licence renewals.

Under the Protocol, finds identified are reported through a Site Champion to a Nominated Contact who alerts the Implementation Service, currently operated by Wessex Archaeology.

The Protocol has been overwhelmingly successful, with over 1,100 finds reported since its inception. These range from Palaeolithic mammoth teeth to military aircraft remains and cannonballs.

Addendums to the Protocol

The Protocol is a blanket safety-net for artefacts and sites of all types and from all periods, but it is also a flexible and adaptive programme which responds to industry needs. Since the Protocol was introduced, two further supporting addendums have been produced which improve staff awareness and safety when dealing with munitions, and to give more advice about the nature and significance of aircraft remains.

Both documents are available online:

Dealing with Munitions in Marine Sediments –

http://www.thecrownestate.co.uk/media/101148/dealing_with_munitions_in_marine_sediments.pdf

Aircraft Crash Sites at Sea – <http://www.wessexarch.co.uk/projects/marine/bmapa/docs.html>

Historic England (formerly English Heritage) remain the curator for heritage in England, though Wessex Archaeology is currently conducting some aspects of Historic England's role in respect of the Protocol through the Protocol Implementation Service, although only where a find is deemed to be non-contentious and is unlikely to result in the creation of an exclusion zone. Finds that require a higher level of curatorial involvement are referred to Historic England in the first instance.



The Implementation Service has now completed its tenth year of operation and this annual report covers the period from 1st October 2014 to 30th September 2015.

Access

Planning conditions relating to archaeology are placed on developments for the public benefit, which encompasses a duty to publicise results accordingly.

Details of all dredged finds are reported to: Historic England; BMAPA; The Crown Estate; the National Record of the Historic Environment (NRHE – previously the National Monuments Record); and the appropriate local Sites and Monuments Record (SMR) or Historic Environment Record (HER), the Finds Liaison Officer for the Portable Antiquities Scheme (PAS), and the relevant Local Government Archaeology Officer (LGAO). All finds are also published on Wessex Archaeology's website and in the annual report, and the good work done by BMAPA companies with regard to the Protocol is made accessible through various dissemination programmes conducted both by Wessex Archaeology and by other organisations, including the Protocol awareness programme which produces *Dredged Up*.



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To aid the smooth running of the Protocol, communication between Wessex Archaeology and BMAPA member companies is facilitated by a Nominated Contact for each company, as detailed here.

BMAPA Company	Nominated Contacts	Position
Brett Aggregates Ltd	Richard Fifield	Marine Resources Manager
Britannia Aggregates Ltd	Richard Fifield	Marine Resources Manager
CEMEX UK Marine Ltd	Samantha Bevan	GIS and Licence Co-ordinator
DEME Building Materials Ltd	Christophe Matton Tom Janssens	Marine Resources Manager General Manager
Hanson Aggregates Marine Ltd	Chris Popplestone	GIS and Resources Co-ordinator
Kendall Bros (Portsmouth) Ltd	Richard Kendall	Managing Director
Northwood (Fareham) Ltd	Edward Skinner	Marine Resources Coordinator
Norwest Sand & Ballast Ltd	Nick Brown	Site Supervisor
Tarmac Marine	Edward Skinner	Marine Resources Coordinator
Volker Dredging Ltd	Will Drake	General Manager



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Ten years of the Protocol

For 2014–2015, we celebrate the tenth year of the Protocol. During this year, 73 individual finds as diverse as engine mountings and a spoon have been reported through the Protocol. These have been added to a database of over 1,100 finds reported since the launch of the scheme in 2005.

These finds may well have been lost from the archaeological record if it was not for the keen eyes of staff working for BMAPA member companies and the reporting framework laid out in the Protocol. This provides a streamlined system of documenting and reporting finds to experts who can then research them and share the interpretation of the finds back to relevant authorities and the marine aggregate industry staff.

Throughout this first decade of the protocol, the support of the marine aggregate industry has been enduring and substantial. Even when the uncertain economic climate caused decreased demand for aggregate, reporting standards were maintained and significant archaeological finds have continued to be reported through the Protocol.

The basic model, that staff are empowered through awareness training to recognise and report material during work on site, is a cost-effective mitigation option for protecting our fragile and finite heritage. The marine aggregates industry has demonstrated this effectively over the last decade. The Protocol established, tested and successfully implemented by BMAPA members has been adapted for use by several other industries, including offshore renewables and fishing, and Wessex Archaeology also run scheme specific protocols based on this model for developments in the UK.

During 2014 the total area of seabed licensed for aggregate dredging decreased slightly from 739 km² to 726 km². The decrease was seen in four regions: Humber by 4.46 km², South Coast by 5.26 km², South West by 10.25 km² and North West by 2.78 km². The East Coast and East English Channel remained unchanged while the Thames Estuary increased by 9.44 km².

The granting of new Licences and the modification of Active Dredge Areas brings areas of seabed into operation that have not been dredged either previously or for some time. The potential for archaeology within these Areas is high as previously undisturbed seabed layers may hold evidence of our past. Wessex Archaeology would urge anyone working with aggregate from new Licence Areas to be vigilant and to book awareness training if necessary.

With the first decade of the Protocol a success, we look forward with anticipation to what the following decade will hold.

Further information about the Protocol and the Implementation Service can be found at:
<http://www.wessexarch.co.uk/projects/marine/bmapa/index.html>

To contact the Implementation Service email protocol@wessexarch.co.uk or phone **01722 326 867**



Legal responsibilities

Whilst adherence to the Protocol is voluntary unless included as a condition of licensing, adherence to Acts of Parliament is mandatory and a legal requirement. The Protection of Military Remains Act 1986 provides statutory protection for military aircraft and designated vessels lost during military service. The Merchant Shipping Act 1995, amongst other things, protects the rights of the owners of wreck. Other Acts that may be relevant include the Protection of Wrecks Act 1973, the Treasure Act 1996 and the Ancient Monuments and Archaeological Areas Act 1979. When finds are reported through the Protocol, the Implementation Service can advise on legal issues and support reporting to the Receiver of Wreck and the Ministry of Defence.



Visits to wharves, vessels and survey companies utilise a combination of formal and informal techniques, including presentations, artefact handling sessions, group discussions and one-to-one discussion, as appropriate to the circumstances and facilities.

Raising awareness

The current phase of awareness work is funded by a tri-partite agreement between BMAPA, The Crown Estate and Historic England, and implemented alongside the Protocol by Wessex Archaeology. Despite the current success so far, it is important to continually promote awareness of the Protocol.

The awareness programme:

- empowers industry staff to recognise and report archaeology through in-person training delivered during awareness visits to wharves receiving aggregate from BMAPA companies;
- raises awareness of the scheme amongst third parties working on behalf of the industry, such as geotechnical and environmental survey companies;
- produces the *Dredged Up* newsletter. The aim of this bi-annual publication is to publicise the service and highlight recent finds. The most recent issue, issue 17, was printed in November 2015 <http://www.wessexarch.co.uk/projects/marine/bmapa/dredged-up>



Visits to wharves and vessels

Since the 2013–2014 annual report was published, ten awareness visits have been made to wharves around the country. Protocol staff ran multiple training sessions to wharves all along the Thames from Greenwich to Gravesend and Kelmsley in Kent. Protocol staff also visited wharves in the north east of England in Jarrow and Middlesborough.

These informal training sessions are key to the success of the scheme. As well as delivering the training, the visits allow Wessex Archaeology to maintain contact with wharves and vessels, boost interest in the scheme and promote it to both new and existing staff.

During a visit, specific information is provided regarding:

- the nature of the marine historic environment;
- identifying typical marine finds and why they are archaeologically significant, using examples of finds already reported through the Protocol;
- the basic remit of the Protocol and the responsibilities of staff under the Protocol;
- advice for recording finds, including filling in the initial reporting form and recommendations for photographing finds;
- handling, conserving and storing marine artefacts;
- contacts for receiving additional advice on particular finds from local authorities or organisations;
- legislation relating to archaeology on the seabed.

Visits have been undertaken this year to British wharves receiving marine aggregate. Contact has been maintained with wharves, vessels and Continental wharves through the annual report and the *Dredged Up* newsletter. Ships regularly report material through the Protocol, suggesting a good awareness of the scheme despite the lack of in-person awareness training. New materials are being prepared to enhance the remote learning packages and to enable Site Champions to induct new starters into the scheme

If you would like to arrange an awareness visit, or would like to receive more advice on finds and finds reporting, please contact Wessex Archaeology via protocol@wessexarch.co.uk There are plans to have the awareness information pack in Dutch and French in the future. To view the information pack in English online visit <http://www.wessexarch.co.uk/projects/marine/bmapa/docs.html>



Newsletter

The bi-annual *Dredged Up* newsletter has celebrated its 17th issue which highlighted some of the year's finds and examined how archaeology and aggregate extraction on land can work together. The newsletter, which is printed and available online, reaches a wide audience to promote the operation of the Protocol and provide a positive showcase for the industry's activities. It is also an important tool for raising and maintaining awareness by publicising dredged finds and publishing the winners of the annual finds awards.

Issue 17, Autumn 2015, is at time of writing being distributed not only to wharves, vessels and BMAPA member companies but also through Historic England, Wessex Archaeology and The Crown Estate to a variety of other organisations, individuals and the general public. Previous and current issues of the newsletter are available online <http://www.wessexarch.co.uk/projects/marine/bmapa/dredged-up>

Finds Awards

The 2013–2014 Finds Awards were made to:

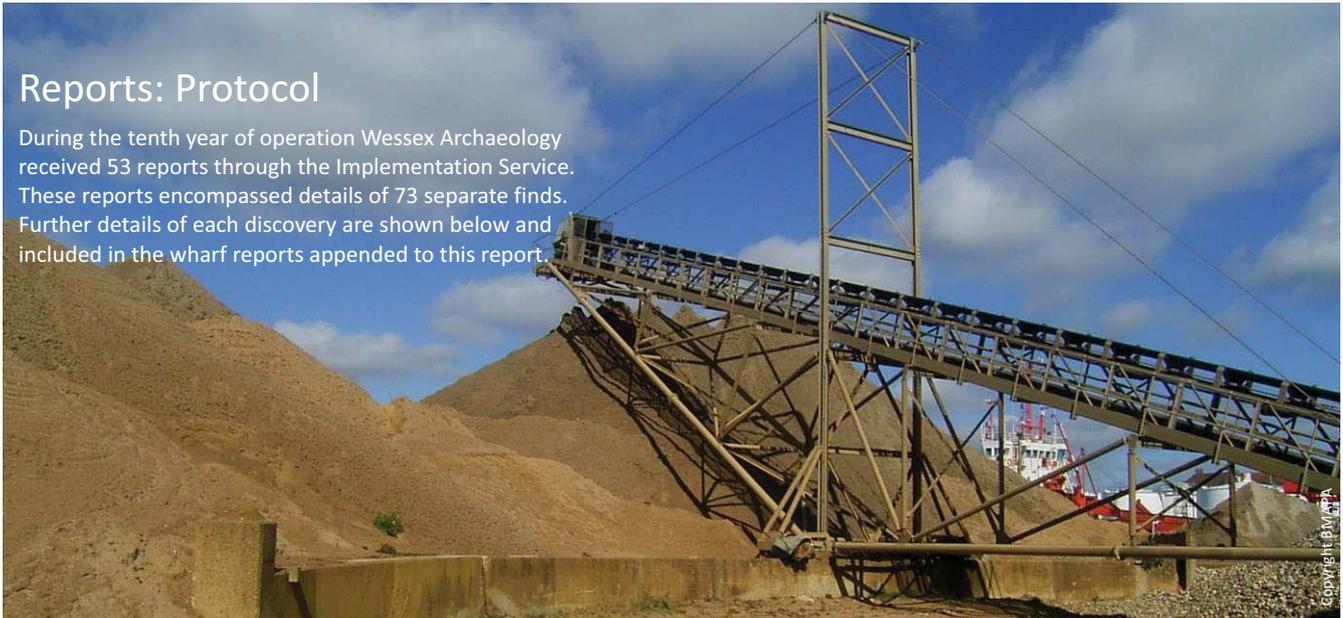
- Lafarge Tarmac's Greenwich Wharf – Best Attitude by a Wharf
- DEME Building Material's *Victor Horta* – Best Attitude by a Vessel
- Lafarge Tarmac's Burnley Wharf for the discovery of a .276 Enfield bullet from the Pattern 1913 rifle, deemed to be the Best Find

More details about the latest finds awards are available in *Dredged Up 17*



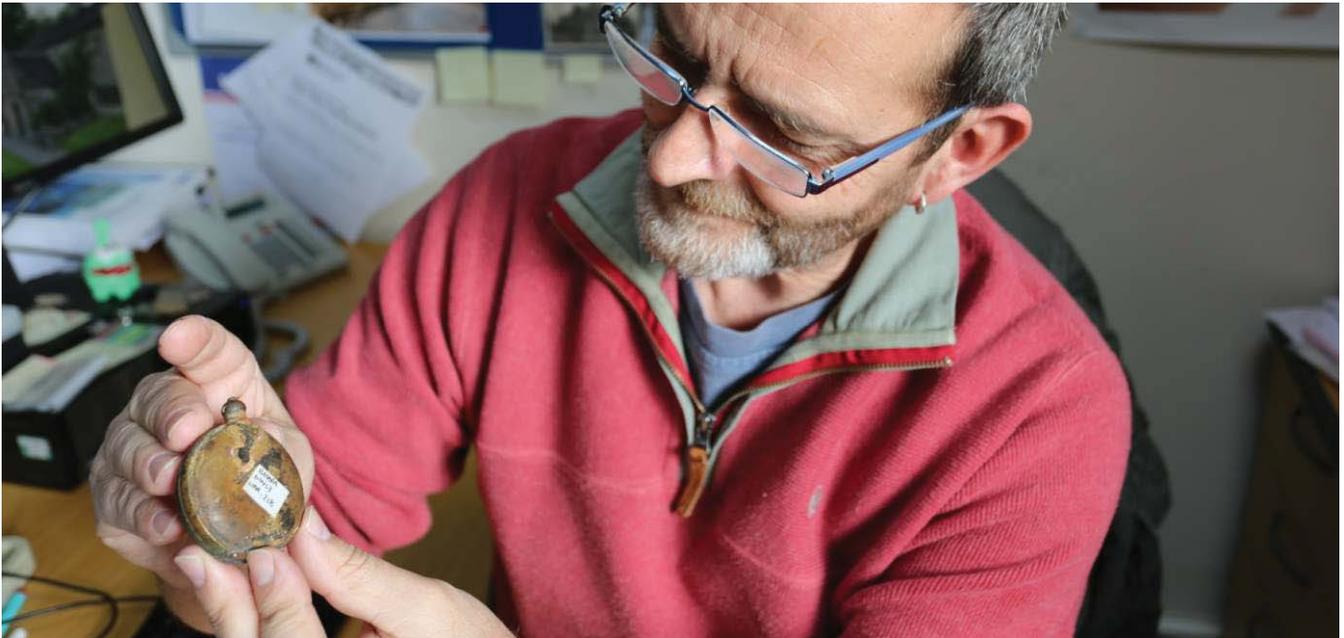
Reports: Protocol

During the tenth year of operation Wessex Archaeology received 53 reports through the Implementation Service. These reports encompassed details of 73 separate finds. Further details of each discovery are shown below and included in the wharf reports appended to this report.



Finds reported in 2014–2015

Report ID	Licence Area	Region	Wharf / Vessel	Description	No.
LTM_0568	395/1	Isle of Wight	Burnley Wharf	Engine mounting	1
LTM_0569	395/1	Isle of Wight	Burnley Wharf	Metal object	1
LTM_0570	395/1	Isle of Wight	Burnley Wharf	Bullet	1
LTM_0571	127	Isle of Wight	Burnley Wharf	Shot	1
Hanson_0572	472	South West	Arco Dart	Natural stone	1
CEMEX_0573	447	Thames	Northfleet	Naval shell	1
CEMEX_0574	447	Thames	Northfleet	Anchor fragment	1
Kendalls_0576	395/1	Isle of Wight	Kendalls Wharf	Bead or weight	1
LTM_0577	Unknown	Unknown	Greenwich	Brass object	1
LTM_0578	447	Thames	Greenwich	Bar shot	4
LTM_0579	372/1	Isle of Wight	Bedhampton	Thermometer	2
LTM_0580	372/1	Isle of Wight	Bedhampton	Switch gear cover	3
LTM_0581	372/1	Isle of Wight	Bedhampton	Mouthpiece	1
LTM_0582	372/1	Isle of Wight	Bedhampton	Shot ball	1
LTM_0583	372/1	Isle of Wight	Bedhampton	Case shot ball	1
LTM_0584	372/1	Isle of Wight	Bedhampton	Buckle	1
LTM_0586	395/1	Isle of Wight	Burnley Wharf	Igneous rock	1
LTM_0587	395/1	Isle of Wight	Burnley	Engine mounting	1
LTM_0589	395/1	Isle of Wight	Burnley	Ammunition clip	1
LTM_0590	395/1	Isle of Wight	Burnley	Trowel	1
LTM_0592	351	Isle of Wight	Burnley	Iron lever	1
LTM_0593	430 Southwold or 460 Hastings	Unknown	Erith	Bar shot	1
CEMEX_0594	460	East English Channel	Northfleet	Cannonball	1
LTM_0595	127	Isle of Wight	Burnley	Bullets	1
LTM_0596	127	Isle of Wight	Burnley	Brass plaque	1
CEMEX_0600	511	East Coast	Dagenham	Timber	1
CEMEX_0601	460	East English Channel	Dagenham	Iron Strap	1
LTM_0602	401/2 or 460	East Coast or East English Channel	Greenhithe, Johnsons wharf	Iron nail or spike	1
LTM_0603	460 or 458	East English Channel	Greenwich	Large metal object	1
LTM_0604	401/2 or 460	East Coast or East English Channel	Greenhithe, Johnsons wharf	Padlock and chain	1
LTM_0606	401/2 or 460	East Coast or East English Channel	Greenhithe, Johnsons wharf	Iron nail or spike	1
LTM_0607	401/2 or 460	East Coast or East English Channel	Greenhithe, Johnsons wharf	Possible fishing float	1
LTM_0608	395/1	Isle of Wight	Bedhampton	Possible sounding lead	1
CEMEX_0609	512	East Coast	Northfleet Wharf	Metal object	1
Britannia_0610	498	Thames	Britannia Beaver	Possible mast spar or seacock	1
Britannia_0611	340	South Coast	Britannia Beaver	Bottlescrew/Turnbuckle	1
LTM_0612	395/1	South Coast	Burnley	Mammoth tooth	1
LTM_0613	395/1	South Coast	Burnley	Aircraft material	3
LTM_0615	395/1	South Coast	Burnley	Possible anode	1
LTM_0616	395/1	South Coast	Burnley	Spoon	1
LTM_0617	395/1	South Coast	Burnley	Possible mast head cover	1
LTM_0618	430	East Coast	Greenwich	Steel spindle with 2brass cogs	1
LTM_0619	458	East English Channel	Greenwich	Metal Object	1
LTM_0620	509/3	Thames	Greenwich	Aircraft material	1
LTM_0621	Unknown	Unknown	Greenwich	Hammer head	1
LTM_0622	395/1	South Coast	Burnley	Metal Object	1
LTM_0623	395/1	South Coast	Burnley	Brass door lock	1
LTM_0624	395/1	South Coast	Burnley	Small shell base	1
LTM_0626	395/1	South Coast	Burnley	Coat hook	1
Tarmac_0627	472	South West	Swansea	Bullet	1
CEMEX_0631	510/1	Thames	Northfleet	Bone	1
Tarmac_0633	395/1	South Coast	Bedhampton	Metal finds	3
Tarmac_0634	395 or 396	South Coast	Shoreham Wharf	Metal finds	11



Specialists

Wessex Archaeology consults with heritage experts, both in-house and from external companies and organisations, to ensure that discoveries are identified accurately and the archaeological value of each object is understood. The table below provides a list of all of the specialists that gave advice during the 2014–2015 reporting year. Specialists that we have contacted in the past but not during this operational year are still included in Wessex Archaeology's internal lists, but have been omitted from the table below. We are very grateful to all of the specialists who have assisted in the identification of Protocol finds over the last ten years.

Expert	Advice given concerning	Institution/Organisation
Dan Atkinson	Maritime artefacts	Wessex Archaeology
Bob Campbell	Historic diving equipment	Historical Diving Society
Ewen Cameron	Military aircraft	RAF Museum
Paolo Croce	Maritime artefacts	Wessex Archaeology
Bob Davis	Archaeological artefacts	Wessex Archaeology
Jonathan Ferguson	Firearms and ordnance	Royal Armouries Museum
Toby Gane	Maritime artefacts	Wessex Archaeology
Lorraine Mephem	Archaeological artefacts	Wessex Archaeology
Brian Morland	Padlocks	History of Locks Museum
Graham Scott	Maritime artefacts	Wessex Archaeology
Charles Trollope	Ordnance	
Ian Varney	Switch gear mechanisms	Coughtrie International
Steve Vizard	Aircraft	Airframe
Dave Welch	Firearms and ordnance	Ramora UK
Staff	Bones	Wessex Archaeology
Staff	WHS trowels	Spear and Jackson
Staff	Small finds	Wessex Archaeology





Case study

Diving Mouthpiece – LTM_0581

A rare find through the Protocol this year was part of an early form of underwater breathing apparatus. Developments in technology to allow humans to breath underwater escalated in the 1940s with equipment designed for both stealth military operations and to make the underwater environment more accessible to the general public.

This artefact was discovered in December 2014 by James Lutman at Lafarge Tarmac's Bedhampton Wharf. It was recovered from material dredged by the *Arco Dee* in Licence Area 372/1, 10 km to the east of the Isle of Wight. It was immediately recognised as some form of diving equipment but it was not until Bob Campbell from the Historic Diving Society investigated the find that it was identified as a Dunlop Underwater Swimmers' Breathing Apparatus (UWSBA) mouthpiece. This was an oxygen rebreather system with diver's exhaled air being recirculated through the equipment making it perfect for covert military operations. Such equipment was used by 'frogmen' during the Second World War which fits the dredging location as it is near the Portsmouth Naval base.

The mouthpiece is made of brass that would have originally been inserted into a moulded chin rest below a circular glass full face mask. The twin corrugated rubber hoses emerging from either side of the mouthpiece would have connected to other components of the breathing circuit. One of the corrugated rubber hoses led to the counter-lung on the right shoulder and the other over the left shoulder to the Carbon Dioxide scrubber which allowed the diver's exhaled air to be recirculated.

Breathable air was stored in a cylinder on the diver's back or twin front mounted bottles with a lead weight in between. Air then passed into a breathing bag/counter-lung mounted across the chest and then into the corrugated rubber hose on the diver's right hand side. When the diver exhaled, the oxygen-depleted air travelled through the opposite corrugated rubber hose to the carbon dioxide scrubber that was either on the diver's back or mounted on the front before the refreshed air returned to the counter-lung.

Another feature evident on this find is the spit cock on the front of the mouthpiece which allowed a diver to open a valve and breathe ambient air whilst on the surface, thus preserving precious bottled air. Despite considerable time on the seabed, the valve can still be opened.

While Siebe Gorman are well known makers of underwater breathing apparatus, Dunlop also developed such equipment, though are more commonly associated with rubber manufacturing. That is how they came to be involved with the diving industry, first making waterproof suits and then encompassing underwater breathing equipment.





The Dunlop Underwater Swimmers' Breathing Apparatus was scientifically designed by the Admiralty at the National Institute of Medical Research and was the first style of equipment that allowed divers to swim horizontally. It was used by Second World War clearance divers who were often dubbed 'frogmen' because of their operational diving attire which consisted of a dark rubber suit; large, webbed fins; and face hidden behind rubber and glass.

Frogmen played an integral part in wartime operations and prior to D-Day, they were stationed at HMS *Dolphin* in Portsmouth, near the dredging site. During the Normandy Landings of D-Day, 6th June 1944 they were the first men out of the boats and onto the beach. Their job was to disarm and disable German contact mines and improvised devices that had been put into the water and inter-tidal zone to prevent British boats and amphibious craft reaching the shore. Without them, the loss of life could potentially have been severe or the landing abandoned.

After the war, there was no commercial application for this full face mask oxygen rebreather system and due to technological developments it was phased out of use by the Navy in 1954. Expert opinion from the Historical Diving Society suggests that this find could be from the 1950s and could be a very rare example of the UWSBA and a significant reminder of the important role played by the frogmen during the Second World War.



Case study

Switch Gear - LTM_0580

The modern industrial world is a theme often represented by archaeological finds reported through the BMAPA Protocol. On the 8th December 2014, three artefacts identified as switch gear mechanisms were discovered at Lafarge Tarmac's Bedhampton Wharf. The items were found amongst aggregate dredged from Area 372/1 by the dredger *Arco Dee*.

Closer inspection of the finds revealed the stamping of the word 'Coughtrie'. Coughtrie, or J. & G. Coughtrie Limited as it was then known, was a Glaswegian lighting manufacturer established in 1941. This manufacturer specialised in the production of reliable fittings with the dual purpose of withstanding arduous environments, whilst also requiring minimum maintenance and upkeep costs. Seventy-four years since its founding, in its current capacity, Coughtrie International focuses on the production of lighting equipment for hazardous environments.

The switch gear fixtures reported through the Protocol were identified by Mr Ian Varney of the Coughtrie technical team as mechanisms which pre-date the Second World War, thought to have been used in the mining industry or related areas. Mr Coughtrie, the founder of the Coughtrie lighting manufacturer, had brothers who were in the business of providing highly sealed switch gear housing for the coal mining industry.

Although mining activities predate the post-medieval world, it was from the late 18th century onwards that the industry began to develop extensively, with a rapid expansion throughout the 19th and early 20th century. The need to maintain coal supplies as a primary energy source continued into the first half of the 20th century to facilitate war efforts. Despite its continued importance, the mining industry remained a dangerous industry in the early modern era. Mine workers were exposed to a hazardous environment, with the threat of explosions occurring due to the presence of flammable gases such as firedamp and coal dust. The potential for explosions to occur, alongside the difficulty associated with underground rescue, resulted in a number of tragic mining disasters throughout history.

At the dawn of the developing industry, miners were under a significant risk of explosions as a result of one fundamental dilemma: the necessity of providing lighting in a dark environment containing volatile gases. The initial use of open flame lamps was disastrous. These lamps could ignite the flammable gases in the surrounding atmosphere, giving rise to frequent explosions. The threat of explosion was lessened by the introduction of safety lamps in the early 19th century (e.g. the Davy or Geordie lamps) which worked on the premise of enclosing the flame and thus preventing it from igniting the surrounding atmosphere. Despite this innovation, explosions continued to occur due to the fragile nature of the lamps. It was not until the 1890s that safe and reliable electric lamps became available in collieries.

The increasing use of electricity in the mining industry had to be carefully controlled so that the potential for explosions to occur were safeguarded as far as possible. In order to activate an electrical power system, it is necessary for an abrupt electrical discharge or spark to occur in order to generate an electrically conductive channel. The hazardous mining environment meant that electric sparks had to be sealed from any of the volatile gases present in the mines. The switch gear mechanisms reported through the Protocol provide an example of the type of switch gear housing utilised in the mines in the first half of the 20th century to isolate the electric spark from the ambient gases.

The technology that these artefacts represent has been the basis of subsequent developments upon which Coughtrie International continue to base their lighting products. The premise of this technology has also served to facilitate electrical fittings in other hazardous environments. For example, switch gears and switch gear housings are also used on board ships to insulate electrical sparks in order to prevent explosion.

The means by which these artefacts came to be on the seabed are unknown. Geophysical survey data of the Licence Area undertaken by Wessex Archaeology in 2013 indicated a number of features of potential anthropogenic origin in the area, including the likely presence of a debris field currently protected by a precautionary exclusion zone. It is possible that these switch gear mechanisms derive from this debris field, migrating as the result of hydrodynamic and sedimentary regimes prevailing in the area.





Liaison and accessibility

Details of each discovery have been sent to:

Mark Russell	British Marine Aggregate Producers Association
Marion Page	National Record of the Historic Environment, Historic England
Mike Cowling	The Crown Estate
Ian Selby	The Crown Estate
Mark Wrigley	The Crown Estate
Hefin Meara	Historic England

In the tenth year of the Protocol, several discoveries were made relating to aircraft but only one was connected with the military. The following report was therefore forwarded to the Ministry of Defence:

- LTM_0620

Details of discoveries regarded as wreck under the Merchant Shipping Act 1995 have been forwarded to the Receiver of Wreck. In 2014–2015 the following reports were deemed to represent items of wreck:

- | | | |
|-----------------|------------|---------------|
| • Brett_0610 | • LTM_0580 | • LTM_0608 |
| • Brett_0611 | • LTM_0581 | • LTM_0613 |
| • CEMEX_0573 | • LTM_0582 | • LTM_0615 |
| • CEMEX_0574 | • LTM_0583 | • LTM_0616 |
| • CEMEX_0594 | • LTM_0584 | • LTM_0617 |
| • CEMEX_0600 | • LTM_0587 | • LTM_0618 |
| • CEMEX_0601 | • LTM_0589 | • LTM_0619 |
| • CEMEX_0609 | • LTM_0590 | • LTM_0620 |
| • Hanson_0572 | • LTM_0592 | • LTM_0621 |
| • Kendalls_0576 | • LTM_0593 | • LTM_0622 |
| • LTM_0568 | • LTM_0595 | • LTM_0623 |
| • LTM_0569 | • LTM_0596 | • LTM_0624 |
| • LTM_0570 | • LTM_0602 | • LTM_0626 |
| • LTM_0571 | • LTM_0603 | • Tarmac_0627 |
| • LTM_0577 | • LTM_0604 | • Tarmac_0633 |
| • LTM_0578 | • LTM_0606 | • Tarmac_0634 |
| • LTM_0579 | • LTM_0607 | |

Although we have received a number of reports of artefacts which may relate to vessels, none of them relate conclusively to unknown and uncharted wreck sites. Consequently, no reports were forwarded to the United Kingdom Hydrographic Office (UKHO) in the 2014–2015 reporting year.

Finds information has been sent to the appropriate PAS Finds Liaison Officers, LGAO and SMR/HER in the county which is most appropriate for the discovery. In the case of a discovery where the original location is known, this will be the PAS, LGAO and SMR/HER closest to the dredging Area. In the case of discoveries made at wharves where the dredging Area is unknown they are reported to the PAS, LGAO and SMR/HER nearest to the wharf.

Further details of liaison and the dissemination of data to interested parties are included in the wharf reports appended to this report.



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Discussion

Importance

53 individual reports were raised during the 2014–2015 reporting year, which is the same as last year's reports and complies with the Implementation Service's expectation of around 50 reports a year.

The finds reported through the Protocol this year are representative of a wide range of periods which bring to light a wide range of themes; from submerged prehistory (LTM_0612: mammoth tooth) to Second World War frogmen (LTM_0581: mouthpiece), as seen on a previous page. These finds and those from preceding years signify the wealth of archaeological material that exists offshore, the investigation of which is important to expand our knowledge of this country's past.

Key Issues

The Protocol has not been rewritten since its inception and has only had minor addendums with relation to the handling of specific finds appended to it, demonstrating the robust and effective nature of the scheme put in place ten years ago. Despite this, during each year of Protocol implementation minor operational situations are recognised and the service adapts to meet these needs. This year the following points have been raised for discussion:

Changes to the Area of Seabed Licensed

The total area of seabed licensed for aggregate extraction decreased in 2014 by 13 km² with decreases in all regions except for the Thames which increased. Even with the decrease in area, there is still the opportunity for different seabed to be dredged within a licence – particularly if the active dredge area has changed. All aggregate extraction areas are subject to archaeological investigation before the start of dredging but discoveries are likely to be made despite this, hence the implementation of a Protocol. Previously undisturbed seabed, or seabed in areas that has not recently been dredged, is likely to hold material that may be archaeologically significant and teams working with cargos from these Areas should remain vigilant. Awareness training is available to support staff.

Quality Photographs

As mentioned in last year's report, most of the finds reported through the Protocol are investigated only by study of the photographs provided by the wharves and vessels making the discovery. Through the Awareness training scheme and the training packs that are given to all wharves and vessels, guidance on taking effective photographs is given to the discoverers of finds. Clear photographs of all angles of the find should be taken with the supplied photographic scale or some other form of scale (ie. coin, ruler, pencil) included in the image.

There has been an overall improvement in the quality of photographs sent in through the Implementation Service and this has helped immensely with the research and identification of finds. Discoverers are to be commended for their efforts.



Timely reporting

A reminder that wreck-related finds must be reported to the Receiver of Wreck within 28 days of their removal from the seabed and this includes any artefacts that have come from a ship or aircraft. This is a legal requirement that exists regardless of the presence of a Protocol. The Implementation Service assists in this reporting by generating the relevant report and disseminating it. The rapid reporting of finds is important in order that the Implementation Service can generate and issue the report before the expiration of the 28 day period.

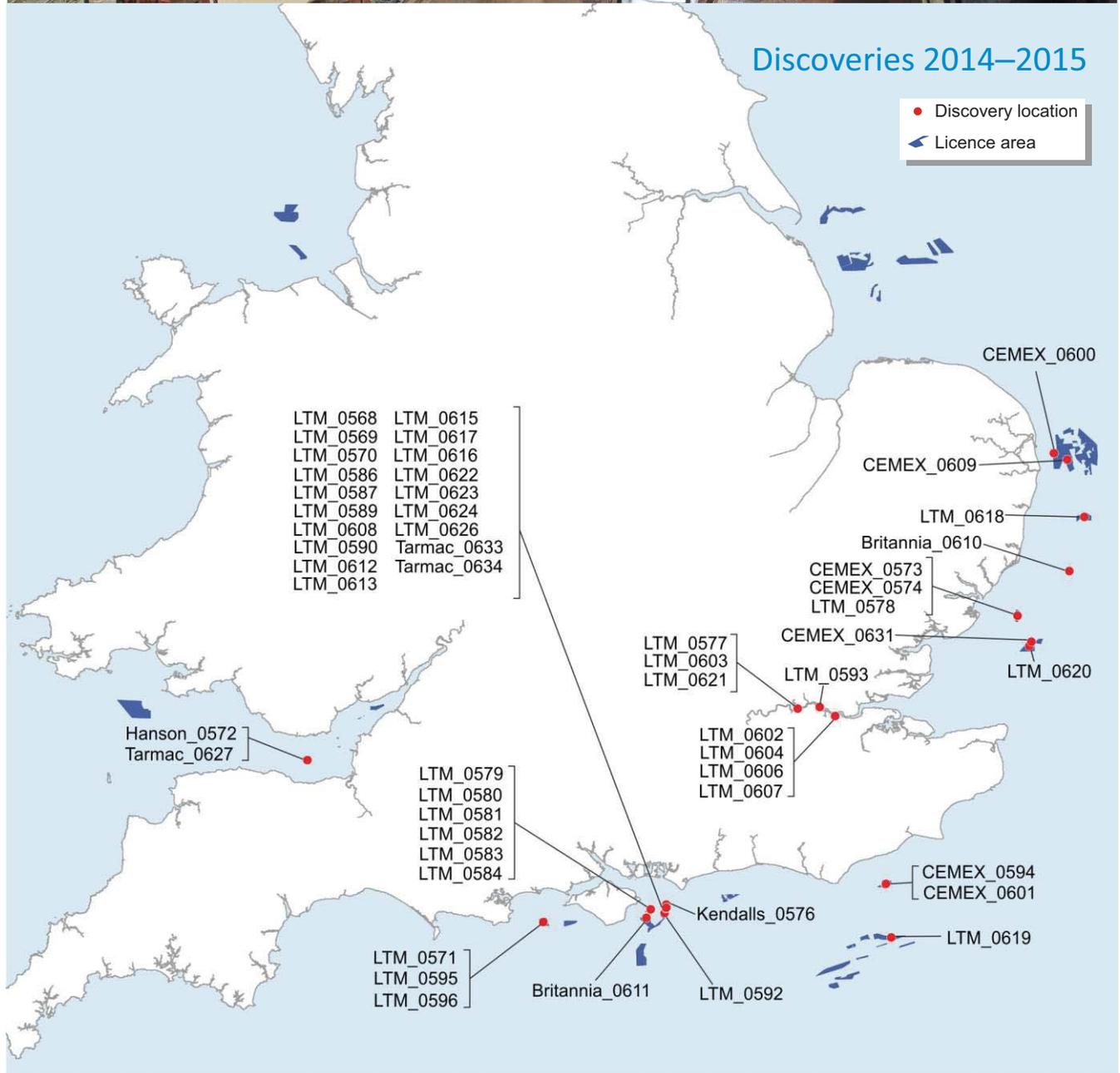
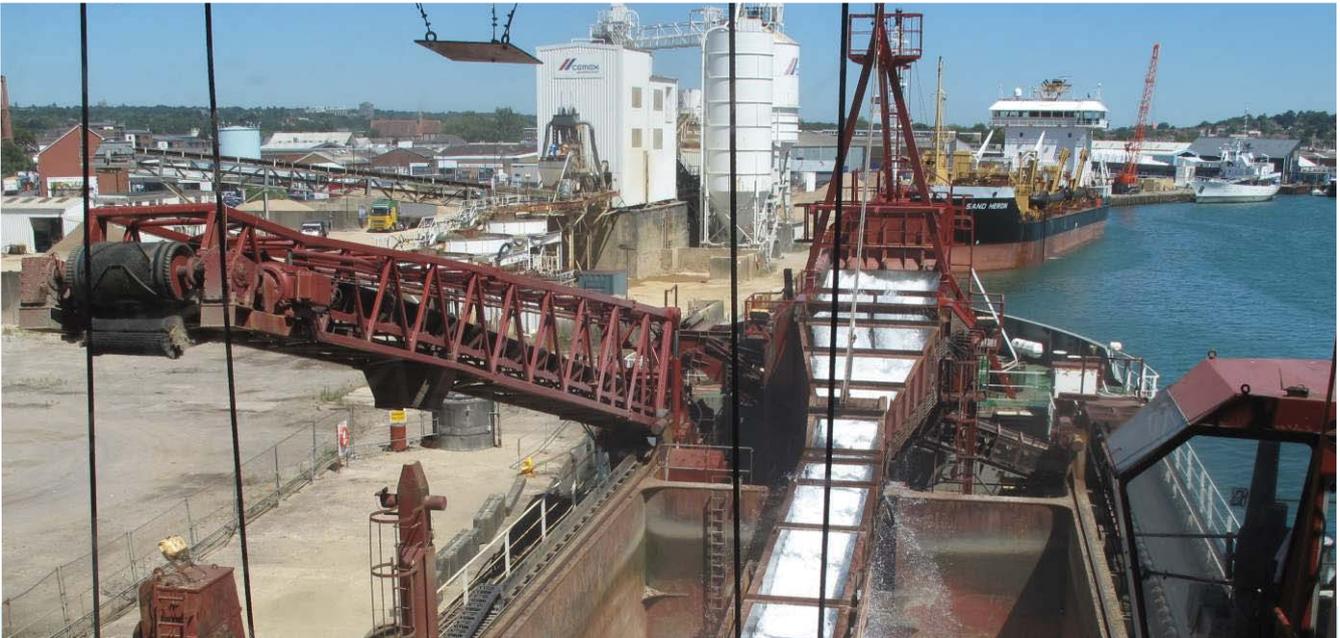
Staffing at WA

There has been a considerable change-over of staff in the Protocol Implementation Service team at Wessex Archaeology. Sadly, long term team member Gemma Ingason left to start her own archaeological education business and several extra staff members have been pulled in to fill the gap. Alistair Black, Rachel Brown and Debra Shefi have now joined Paolo Croce, Dee Donohue, Andrea Hamel, Peta Knott, Vicki Lambert and Hanna Steyne in implementing the scheme. Questions or queries can be directed to any member of the team, either directly or via protocol@wessexarch.co.uk. This email address contacts every member of our staff equipped to handle Protocol enquiries and we are happy to help and advise via email, over the phone or in-person through awareness training.

Regions with nil return

There were no reports of finds amongst material dredged from the North West or Humber regions during the 2014–2015 Protocol year. The North West region is targeted for sands and screens fitted to the dredgers grade material before it enters the hold, likely accounting for the lack of archaeological reports from these regions. The Humber region however has previously yielded archaeological material, though no reports have been received from this region since the 2011–2012 reporting year.

This is potentially due to a prolonged drop off in the tonnage of material dredged from the Humber region – 1.57 million tonnes of construction aggregate was dredged from the region in 2014 and 1.53 million tonnes in 2013, compared to 2.18 million tonnes in 2011 and 2.62 million tonnes in 2010. Also, two thirds of production from Humber licences are being exported to wharves on the near Continent, where reporting of any finds recovered remains rather irregular. The Humber and North West regions account for approximately 12% of the construction aggregate dredged in 2014, the last year for which figures are currently published.



Artefact patterns and distribution

Finds are not just important as objects in themselves. Often their significance or interest comes from where they were found – their context. Whether they were found on their own or with a group of similar items can help tell the finds history. That is why finds are considered in relation to the Licence Area from which they were dredged as this allows them to be placed within context, to a certain extent.

Also, archaeology is not distributed on the seabed in an even fashion either over time or geographically. Therefore, some regions will hold more archaeological material than others and some time periods will be more represented through finds than others. In addition to this, there are other factors that contribute to the distribution of finds on the seabed. Some materials are more likely to survive underwater than others i.e. organic materials will decay more easily than metal. However the deposition and burial methods will also effect the preservation of underwater finds, as organic material that is buried quickly and remains so will survive while metal wrecks that are constantly exposed on the seabed will eventually rust away in centuries to come.

Some dredging regions are known to be high in Palaeolithic activity but unless the predominantly organic finds from this era are buried, there will be little preserved. Conversely, some regions are high in Second World War activity and therefore they will have a high level of archaeology given that ships and aircraft, weapons and ammunition are constructed from metal which is relatively durable.

Considering finds on a regional basis is therefore helpful only as an overview, to provide a general picture of the finds from each region over a year. This can be helpful when considering future Licence applications within existing dredging regions. Highlighting patterns can identify potential sites of archaeological interest and possibly predict which Licences are likely to yield archaeological material in the future.

Distribution of artefacts by dredging region

There are eight dredging regions around the UK:

- The Humber
- The East Coast
- The Thames Estuary
- The East English Channel
- South Coast – Owers Bank
- South Coast – Isle of Wight
- The South West
- The North West

In the 2014–2015 dredging year a trend established in previous years has continued, with the majority of finds originating from the South Coast Isle of Wight region. This year 60% of the reports raised with the Implementation Service detailed finds from this region and 19 out of the 32 reports from this region refer to material from Areas 395/1. The South Coast region (Isle of Wight and Owers combined) yielded 2.97 million tonnes of construction aggregate in 2014, 18% of the total tonnage dredged across all regions. A known spread of post-war rubble and the wreckage of a Ju 87 aircraft in the vicinity of Area 395/1 have contributed to the high number of reports from this region.

Six of this year's 53 reports came from the Thames region, one from the South West, three from the East Coast and four from the East English Channel. Four reports were made of finds located in a mixed cargo which could relate to either the East Coast or the East English Channel and three reports came from an unknown location.

No reports were received from cargoes dredged from the Humber or North West regions.

Region	Quantity of construction aggregate dredged in 2014 (2013 quantity) in million tonnes	Number of finds reported 2014–2015 reporting year (2013–2014 reporting year)
Humber	1.57 (1.53)	0 (0)
East Coast	4.72 (4.25)	5 (12)
Thames Estuary	0.59 (0.74)	6 (2)
East English Channel	3.62 (3.4)	7 (3)
South Coast (Owers Bank and Isle of Wight combined)	2.97 (3.4)	32 (35)
The South West	1.09 (1.02)	1 (0)
The North West	0.25 (0.38)	0 (0)



Distribution of artefacts by archaeological typology

Palaeolithic finds

Only one find reported this year is confirmed to relate to the Palaeolithic – a mammoth tooth found at the Lafarge Tarmac Marine Burnley Wharf and reported as LTM_0612. Because of the high level of erosion it is not possible to determine which species of mammoth this tooth has come from.

Mammuthus primigenius, the woolly mammoth, is the species most commonly represented by Protocol finds, though evidence of the southern mammoth, *Mammuthus meridionalis*, has also been recovered. It was dredged with material from Area 395/1 which lies in the South Coast region, to the east of the Isle of Wight and was identified as of potential archaeological significance by J. Jeromes at Lafarge Tarmac's Burnley Wharf in June 2015.

Maritime artefacts

Britain has a long maritime history, and therefore it is no surprise to find seafaring related artefacts in the offshore context and several reports made through the Protocol this year have come from boats or ships. These include ship fittings such as: a possible mast spar or seacock from the Thames (Britannia_0610), a possible mast head cover from the south coast (LTM_0617) and an iron strap from a mast or spar from the east English Channel (CEMEX_0601). Two iron spikes for securing ship timbers were located on the east coast or east English Channel (LTM_0602 and LTM_0606).

As can be expected from the high density shipping off the Isle of Wight, a number of ship related finds were located in this area including a sacrificial anode (LTM_0615), copper sounding lead (LTM_0608) and a brass plaque marking the location of 'hot water' on a German ship from the late 19th to mid-20th century (LTM_0596). No German wrecks are known in the area but this find indicates the possibility of a German wreck, yet to be located, in the vicinity. Another find related to shipping in this area, is the spoon located off the Isle of Wight (LTM_0616). It is marked with 'Port Line' which researches have identified as a shipping company in operation between 1937 and 1982.

Other shipping related finds are: a fishing float dredged from the east coast or east English Channel (LTM_0607), a small, possibly removable, anchor arm from the Thames region (CEMEX_0574) and a turnbuckle probably from a ship of the late 19th century to the present day which was found off the south coast (Britannia_0611).

A large number of finds might be associated with shipping, but without further related finds it is difficult to make a positive connection. An example of this is a worked timber found off the east coast that could either be from a wooden or composite ship or it could be associated with marine structures such as a jetty or sea defences (CEMEX_0600). Several metal fittings that could be from shipboard machinery were found this year although there is the possibility that they had a terrestrial origin and have been dumped at sea. An example of this is a clockwork or mechanical component from a small machine was found on the east coast (LTM_0618) along with a padlock and chain (LTM_0604). Once again, a high concentration of material was found off the Isle of Wight and this included an engine thermometer (LTM_0579), a pin from a motor or a piston (LTM_0569), an iron bar (LTM_0592) and switch gears that were examined in detail on page 8 (LTM_0580).

Featured discoveries from 2014–15

Britannia_0610 – ship fitting
 Britannia_0611 – turnbuckle
 LTM_0596 – brass plaque
 LTM_604 – lock and chain
 LTM_0616 – spoon



Despite the high number of ship related finds from this year, none of them are thought to relate to an unidentified wreck. Finds reported this year are thought to relate to known wrecks lying in or near Licence Areas (and identified during impact assessment prior to dredging) or to have been lost from ships, not with them.

Ordnance and weapons

A considerable number of ordnance have been reported through the Protocol this year. Two bullets have been located from near the Isle of Wight (LTM_0570 and LTM_0595) and another from the south west (Tarmac_0627). A four inch naval shell was located in the Thames (LTM_0573).

Cannonballs have been found in the East English Channel (CEMEX_0594) and the south coast (Tarmac_0634) along with bar shot from the Thames (LTM_0578) and another bar shot from a mixed cargo encompassing the south east and east coasts (LTM_0593).

Numerous small calibre shot were dredged from around the Isle of Wight this year. A 40 mm lead projectile (LTM_0582) and a 30 mm iron projectile (LTM_0583) were found off the island along with a slightly larger 4.3 cm diameter shot possibly from a Falconet cannon (LTM_0571). Evidence of more recent munitions has also been located from the Isle of Wight in the form of an ammunition clip from a British L7 General Purpose Machine Gun (LTM_0589).

Quite an unusual Second World War shell casing base was dredged from the south coast LTM_0624. It is marked with VAD (Vickers Armstrong Developments) but this particular model could not be identified.

Conflict, both historical and modern has left a great deal of weaponry, ordnance and military paraphernalia on the seabed and it is anticipated that further evidence of these conflicts will continue to be recovered in the future.

Aircraft

A significant number of aircraft related finds continue to be dredge from Area 395 this year. Two possible engine mountings for a German Jumo 211 engine were found in this area (LTM_0568 and LTM_0587). This engine would have been installed in a Ju-87 aircraft and possibly the He-111 and the Ju-88. However, as a number of pieces of a Ju-87 aircraft have previously been recovered from the same area, it is possible that this material came from the same aircraft.

A possible small section of stringer was located in Area 395 (LTM_0613) which may have formed the framework of an aircraft. Another find has been identified as a potential aircraft part based on its lightweight materials of plastic and aluminium (LTM_0622) and its proximity to other aircraft parts; however, its exact purpose is not known.

Another aircraft fragment has been found in a different Licence Area. LTM_0620 has been identified as part of a German aircraft and this item was found in Area 590/3.

Featured discoveries from 2014–15

- LTM_0568 – engine mounting
- LTM_0578 – bar shot
- LTM_0613 – section of stringer
- LTM_0622 – aircraft part
- LTM_0624 – shell casing base



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Conclusion

Heritage components of planning consent, either on land or at sea, serve the benefit of preserving finds and sites and the knowledge associated with them for future generations. Reporting finds through the Protocol, researching them, and publicising them ensures that the information is not lost but is instead preserved.

Applying archaeological mitigation offshore is understandably difficult given that heritage on the seabed is separated from us by chronological time, distance and practicality. The marine aggregates Protocol remains an excellent example of how these limitations can be overcome, preserving heritage for everyone.

We would like to thank everyone who has helped to support the Protocol during the 2014–2015 reporting year, and throughout the first ten years of the Protocol.

The Future

The Protocol Implementation Service continues to be run by Wessex Archaeology and finds are reported regularly. If you have any questions about finds reporting and the Protocol, please contact us via protocol@wessexarch.co.uk



LTM_0568: Engine Mounting

This engine mounting was discovered by A. Harrigan at Burnley Wharf. It was recovered from material dredged on 14th October 2014 by the *City of Chichester* in Licence Area 395/1, which lies 14km to the east of the Isle of Wight.

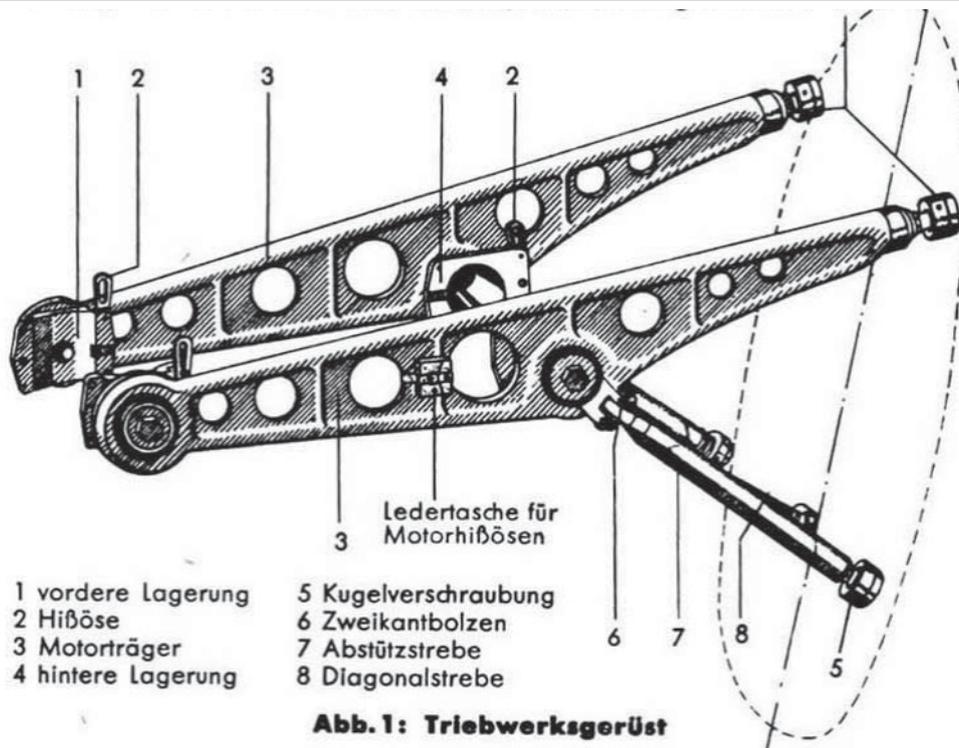
This find has been described as an engine mounting by many of the experts who examined photographs, however, it has been more difficult to determine whether the mounting came from an aircraft, boat or submarine.

Shipwreck expert Graham Scott at Wessex Archaeology first suggested the find could come from an aircraft or submarine, so further experts were consulted.

Finds specialist Bob Davis, also from Wessex Archaeology, described the find as a dampened mounting. He noted that the underside has a shallow key-way recess and also a circular stud, which suggests the item was attached to a primary main frame or block to stop it moving. The four retaining bolts on each corner may have been bolted to the same frame, but the base plate is slightly raised to keep it clear of any primary frame, and the key-way may be just to avoid something below. It is likely that a long bolt passed through the centre hole with a retaining nut located underneath, hence the slight rise in the plate. The 'looped' bracket that is attached via one of the bolts is a looped tension adjuster, which was used to connect the mounting to other material. The artefact is called a 'dampened' mounting on account of the two rubber 'rings' or 'bushes', which 'dampen' unnecessary vibration. Without the rubber bushes, vibration from high powered engines would cause oscillation to be passed into the framework, with bad structural results and causing an uncomfortable ride for the passenger. These rubber bushes are in very good condition, suggesting the artefact was either buried until fairly recently, or that the rubber is of very high quality, such as might be used for an aircraft.

Steve Vizard, an aircraft and marine expert with over 40 years of experience said that he believed it was the mounting for a boat engine based on the bracket and bolts, and that it was very unlikely to come from an aircraft.

However, Ewen Cameron, a Curator of the RAF Museum in Stafford suggested that the artefact could be a mounting for a German Jumo 211 engine, and more specifically the front port mounting. The image below shows the mounting (parts No. 1 & 2) fitted to the engine bearers of a Ju-87 aircraft. It is not certain whether the mounting was specific to the Ju-87 or if it was used on other aircraft with the Jumo 211 engine, such as the He-111 and the Ju-88. However, as a number of pieces of a Ju-87 aircraft have previously been recovered from the same area, it is possible that this material came from the same aircraft.



Additional information about aircraft material previously recovered from Licence Area 395/1 can be found in the following reports:

- 'Tarmac_0463, Lafatarm_0474 and Lafatarm_0486: Aircraft Remains'
- 'LTM_0515, LTM_0516, LTM_0517, LTM_0522, LTM_0523 and LTM_0524: Aircraft Remains'

At present, the range of material that has been recovered from Licence Area 395/1 certainly suggests the presence of a downed aircraft, likely a German Ju-87. However, the aircraft crash site is believed to be highly dispersed, and archaeological assessments of the available geophysical survey data have not suggested that there are any signatures that might represent a wreck site.

Any further finds of archaeological material from this area should continue to be reported through the Protocol. Wessex Archaeology will continue to work with Lafarge Tarmac to ensure that dredging continues with respect to our submerged cultural heritage.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0569: Metal Object

This artefact was discovered by A. Harrigan at Lafarge Tarmac's Burnley Wharf. It was recovered from material dredged by the *City of Chichester* in Licence Area 395/1, which lies to the east of the Isle of Wight.

This metal artefact measures approximately 21cm in length. It comprises a pin fastened to a metal plate with a retaining pin. The large pin appears to be made of hardened steel, as it has a limited amount of rust on it. 'Hardened steel' is a term used to describe steel with a medium or high carbon content that has been treated with quenching followed by tempering in order to improve the item's mechanical properties and to make it more durable. The top of the pin has a number '5'. The metal plate attached to the pin is sub-circular and has a diameter of approximately 13.5cm, although the levels of corrosion obscure its original size.

A number of interpretations have been suggested for this find. The initial interpretation at the wharf suggested that it looked similar to a pin used for fitting a pulley onto a drive motor. Similarly, Bob Davis, a Finds Specialist at Wessex Archaeology, indicated that the pin could be a type of 'spindle' – where a hardened steel pin sits in a rotating system, and the hardness of the steel limits the amount of wear. He suggested that the metal plate and retaining pin could have been weak spots, and therefore this spindle may have been used for relatively lightweight work. Shipwreck specialist Graham Scott, also from Wessex Archaeology, suggested that the artefact could be part of some type of piston.

Considering the wide variety of uses for this type of artefact, it has not been possible to definitively identify this find. However, it is possible that it could have originated from a shipwreck or have been part of something washed overboard. Further discoveries in the Licence Area may provide more information.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0570: Bullet

This bullet was discovered by J. Jerromes at Burnley Wharf. It was recovered from material dredged on 10th October 2014 by the *City of Chichester* in Licence Area 395/1, which lies to the east of the Isle of Wight.

This bullet measures approximately 48mm long with a diameter of approximately 13mm. The surface of the bullet was described by the finders as having a 'chrome' appearance.

Jonathan Ferguson of the Royal Armouries Museum in Leeds identified the bullet as potentially being ammunition used with a 0.5 calibre Vickers machine gun.

The Vickers 0.5 calibre machine gun was developed in the inter-war period, around 1932. It went through several variants, with successive improvements seen in each. The Vickers .50 machine gun Mark III was a naval version used mostly by the Royal Navy and Allies as an anti-aircraft weapon. Given that this bullet was found offshore, this is most likely the variant that fired this example.



Mark III Vickers mounted 'in fours'
onboard HMS *Vanity* (1940)

On large vessels the gun was mounted in fours (see image above) as an anti-aircraft gun, but it was also used on smaller craft such as Gun and Torpedo boats. This bullet is illustrative of the fighting that took place in and over the Channel between the Allied and German forces during the Second World War.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0571: Shot

This small iron ball was discovered by J. Jerromes at Burnley Wharf. It was recovered from material dredged on 1st October 2014 by the *Arco Dee* in Licence Area 127, which lies to the east of the Isle of Wight.

This small sub-spherical iron object is heavily corroded giving it an uneven surface and shape. It measures approximately 4.3cm in diameter and is likely to be a small shot associated with a Falconet cannon. Falconets had a calibre of 2 $\frac{3}{4}$ in (5cm) and their ammunition would have been slightly smaller. Falconet cannons were developed for use on land in the late 15th century but became widely used for the defence of smaller vessels in the 17th century. Most cannonballs cannot be more closely dated than to between the 16th and 19th centuries as they did not change in their form throughout this period. The country of origin is also difficult to identify as similar styles were used by many European countries at the same time.

The sea around the Isle of Wight, including close to Area 127, has been host to a large number of naval battles which led to shipping losses by many European nations. Area 127 has produced 17 other cannonballs ranging in size from 1in to 16.5in, most of which have been 3in sakers. None of these are the same size as LTM_0571.

Cannonballs can arrive on the seafloor in several ways, in addition to being fired from a gun during a conflict. They may have been deposited in the sea to weigh down cargo or other items, secured to a buoy for later retrieval. This is called *lagan*. Cannonballs were also used to weigh down burials at sea to ensure they sank to the seabed. These latter two are unlikely to be the case for this object due to its small size and relatively light weight.

A concentration of contemporary cannonballs could indicate that a battle has taken place in the area or that the cannonballs were lost with a wrecked ship. The former is currently thought to be more likely as no other balls of this size have been discovered in the area to date.

Other cannonballs have been found in this area (UMA_0077, UMA_0224, Tarmac_0312, Tarmac_0314, Hanson_0345, Tarmac_0383, Tarmac_0398, Tarmac_0413, Tarmac_0414, Tarmac_0415, Tarmac_0424, Tarmac_0436, Tarmac_0446, LTM_0537, LTM_0556) therefore it is important that any finds discovered here are reported via the Protocol to help shed further light on this region.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) Hampshire



Hanson_0572 Natural Stone

This fragment of stone was discovered by J. Quayle amongst material dredged by the Vessel *Arco Dart* from Area 472, which lies in the Severn Estuary.

The artefact measures approximately 11cm long by 3cm wide and 3cm deep (width and depth taken at widest part).

Hanson Aggregates Marine Limited sent the find to Wessex Archaeology for analysis which has confirmed that the find is a naturally occurring sedimentary stone that has been abraded by the sea. The wedge-shape, which suggested that it might be archaeological, is deemed to be a factor of the geological processes that led to its formation.

Soft stones such as this one have been reused in the past as whetstones for sharpening knives and blades. An example, pictured right, was excavated during work on an Iron Age site in Somerset. Whetstones that have been used display completely smooth sides and whilst this example appears smooth, in-hand analysis reveals gentle undulations on the surface, ruling out this hypothesis.



Excavated whetstone from Somerset

As this find is not thought to be archaeological, it requires no further reporting. The crew of the *Dart* are praised for discovering and reporting this find, as cargoes from the Severn Estuary rarely contain archaeological material because screens fitted to the vessel prevent larger objects entering the hold when sands are being targeted.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate



CEMEX_0573: Naval Shell

Andrew Lingham found this shell at CEMEX's Northfleet Wharf. It was amongst material from Licence Area 447 which lies in the Thames Estuary dredging region and was dredged by the *Sand Fulmar* in November 2014.

Dave Welch of Ramora studied images of the find and believes that it is a 4" Naval Shell. The lack of nose fuse and the inner sections of the find visible through the corrosion confirm the Wharf's identification that this is solid shot, and therefore inert. The broad arrow, used since at least the 1600's to mark government property including ordnance, is visible alongside partially obscured markings in the image above.

The shell has a 4 inch calibre. It displays an obturating ring, on the right in the image above, which were fitted to shells to create a seal between the shell and the breech of the gun firing it, trapping propellant gases behind to ensure efficient firing. These were traditionally made of soft metals, such as copper, though modern versions are being manufactured from plastic. The grooves visible on this example confirm that it has been fired, which accounts for its presence offshore.

MEC – munitions or explosives of concern – are a hazard when working offshore as it is estimated that around 10% of ordnance from recent conflicts affecting British waters failed to detonate. As most ordnance found in British waters relates to WWI or WWII this means that unexploded ordnance could have lain undisturbed for 70-100 years corroding in salt water. The example reported here, which is inert, carries no explosive and so is believed to be safe.

Area 447 has revealed several finds that relate to conflict, including aircraft fragments and weapons. This is entirely to be expected given the position of the area in the Outer Thames Estuary. The Thames as the shipping route to London was heavily targeted during both conflicts.

For further information on the safe handling of ordnance - http://www.thecrownestate.co.uk/media/101148/dealing_with_munitions_in_marine_sediments.pdf

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Essex
- The Local Government Archaeology Officer for Essex
- The Finds Liaison Officer (Portable Antiquities Scheme) Kent



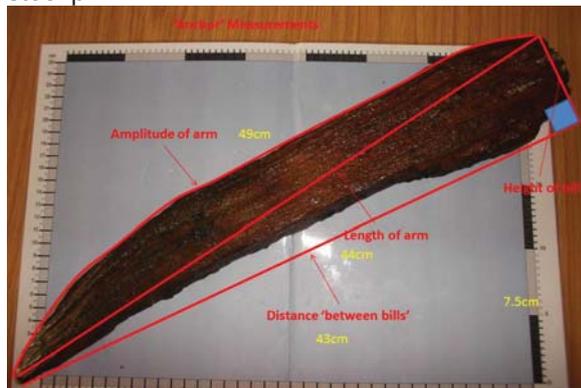
CEMEX_0574 Anchor Fragment

This artefact was discovered by Andrew Lingham at Northfleet Wharf. It was recovered from material dredged by the *Sand Fulmar* in Licence Area 447 which lies 18km to the south east of Harwich.

The artefact is a heavily corroded wrought iron object. It has an overall length of 43.5cm and is 6cm wide at its widest part. It has a circular protrusion at the widest end (shown in photograph below), which measures 5cm in diameter. The piece tapers gradually, from its widest part to the curved tip to a diameter of 1.5cm.

The item has tentatively identified by experts at Wessex Archaeology as an anchor arm. Standard measurements for anchors are shown below left, and indicate an anchor of relatively small size, which would indicate its association with a small vessel, such as a fishing vessel, or as a kedging anchor used to assist in the manoeuvring of vessels.

The smaller, rounded yet regularly finished end (shown below right) suggests that the object has not broken away from a larger piece, as might be expected had an arm broken away from the shank of an anchor, but may have been designed in this way. Such a design is found on a type of 'portable' anchor designed by George Cotsell in the mid 19th century. His anchors had one removable arm, which was held in place attached to the stem with a mortise and tenon type joint in the crown, with a hole to take a steel pin.



The object can be seen to have a very minimal curve along the 'arm', and there is no evidence for flukes or attachment to a shank (although a portable anchor would not). As such, there is some uncertainty regarding the item's interpretation as an anchor piece, and it is possible that the item has just eroded in a peculiar manner.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Essex
- The Local Government Archaeology Officer for Essex
- The Finds Liaison Officer (Portable Antiquities Scheme) Kent



Kendalls_0576: Possible Bead or Weight

This artefact was found by Ade Barker at Kendall's Wharf, in material recovered by the *City of Chichester* in Licence Area 395/1, to the east of the Isle of Wight.

This oval shaped stone artefact measures approximately 2cm in length by 2cm in width. The find was reported by staff at Kendall's Wharf as a possible fishing weight.

The artefact was sent to Wessex Archaeology for further analysis, and was reviewed by a number of Finds Specialists. It has been identified as naturally occurring stone. The hole through the centre appears to have been made by natural perforation, however it is possible that the artefact was used as a bead or possibly as a small fishing weight. As the exact nature of this find has not been confirmed, it is not possible to provide a date for it.

If it was used as a bead, it is possible that it could date to as early as the Palaeolithic period (approximately 800,000 to 10,500 years before present), as there have been examples of beads discovered from this period, though generally made from seashells. Stone beads became more common in the Neolithic period (4000 to 2400 BC). It is possible that this find dates to a period when sea levels were lower, and areas of the English Channel and the North Sea were exposed as dry land.

Alternatively, if the artefact was used as a fishing weight, it could date to any point from the Mesolithic period (8500-4000BC) onwards. As sea levels rose and the area became inundated, activity in the area would have been of a maritime nature.

It is also possible that if the artefact is simply a natural stone, it could have eroded into the sea having derived from a terrestrial deposit.

A similar find, Hanson_0258, was discovered by John Quayle onboard Hanson's *Arco Avon*, in 2009 in material dredged from Licence Area 127, approximately 11km west of the Isle of Wight.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0577: Brass Object

Steve Bracey found this object during maintenance at Greenwich Wharf. Because of the circumstances of its discovery it is not known which cargo it was dredged with or which area it is from.

This find appears to consist of three layers of brass (decreasing in size) that have been compacted together and secured by a steel pin pushed through the base of the object. The find has been heavily distorted though it is not possible to suggest at which point in its use, loss or recovery this has occurred. The distortion makes absolute identification unlikely but two interpretations are being considered for this find.

Dan Atkinson, Regional Manager for Wessex Archaeology's Edinburgh office, has suggested that the find is reminiscent of brass weights. The steel pin, he suggests, might have been connected to a hook which would have aided in its use.

The alternative suggestion comes from Toby Gane, of Wessex Archaeology's Salisbury office, who suggests given the lack of corrosion on the artefact that it might be made of Muntz metal. Muntz metal was patented in 1832 and consists of copper, zinc and iron. It is favoured for its corrosion resistant properties and is commonly used on vessels, suggesting that this was a fitting or fastening from a boat or ship. The distortion prevents much further analysis but, if found to have come from a boat or ship the damage to the item may have been caused during the loss of the vessel.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Greater London
- The Local Government Archaeology Officer for Greater London
- The Finds Liaison Officer (Portable Antiquities Scheme) Greater London



LTM_0578: Bar Shot

This bar shot was found by Tony Clancy at Greenwich Wharf from material dredged by the *City of Westminster* from Area 447, which is in the Thames area.

Terry Clancy discovered the bar shot above (believed to be a complete bar shot with a break on the shaft) and two balls that are from a bar shot, at Greenwich Wharf.

Bar shot are an offensive weapon fired from cannon but with the additional destructive power of being capable of spinning on an axis to disable masts and rigging.



They were only effective against wooden vessels and so fell out of use (as did cannons) when wooden vessels were replaced with steel plated vessels that did not rely on sails and masts for propulsion (for example steamships which came into use around 1800).

Charles Trollope, an expert in historical ordnance studied images and the available measurements of the finds to suggest that these examples date from the mid-17th century onwards (1650+) and that these could be Dutch or English examples. Interestingly, Charles tells us, the Licence Area from which these were dredged (447 in the Outer Thames Estuary) is close to the site of the Battle of Kentish Knock which took place on 28th September 1652. It is likely that these bar shot are a relic of that battle, giving a very specific date for their deposition at sea.

The Battle of Kentish Knock, named after the shoal over which it took place (and which, due to its shallow nature, nearly claimed two English vessels during the conflict) occurred during the first Anglo-Dutch War which lasted from 1652-1654. The Wars were fought for control over the seas and trade routes, and evidence of conflicts fought during the long running dispute has been found from several east coast licence areas.

The Battle of Kentish Knock began (according to the old English calendar in use in England at the time of the battle) on the 28th or 29th September 1652. The Dutch fleet were sighted off the English coast sailing first south, and then returning northwards with the English fleet in pursuit. The English, commanded by Robert Blake, William Penn and Nehemiah Bourne engaged the Dutch fleet off North Foreland (Kent).

Records of the event attest that '*Thousands of great shot passed from one to the other*', and an English source claims that three Dutch vessels were sunk.

The following day the Dutch retreated, with the English in pursuit, before the English retreated in order to provision their fleet.

The Anglo-Dutch Wars spanned over a century, beginning with the outbreak of the first war in 1652 and ending with the fourth final episode in 1784.

These bar shot tell a daring story and are rare amongst Protocol finds in that we can be almost certain of the date and circumstances of their loss at sea.



Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Essex
- The Local Government Archaeology Officer for Essex
- The Finds Liaison Officer (Portable Antiquities Scheme) for London

The English Commanders:

Robert Blake - 1598-1657.
Buried at Westminster Abbey but later disinterred along with the remains of other supporters of Oliver Cromwell on orders of Charles II.

William Penn - 1621 – 1670.
Buried in Bristol. The flags of Dutch ships he defeated used to hang near his memorial in St Mary Redcliffe Church.

Nehemiah Bourne – 1611 – (potentially) 1690. Left Britain for America after the restoration of the monarchy and is mentioned in a document dated 1662. A man of the same name is mentioned in two documents after this date, but it has not been confirmed that they relate to the same Nehemiah Bourne.

Area 447 – taken from the area Involved

LTM_0579: Thermometer



This artefact was discovered by James Lutman at Lafarge Tarmac's Bedhampton Wharf. It was recovered from material dredged by the *Arco Dee* in Licence Area 372/1, 10km to the east of the Isle of Wight.

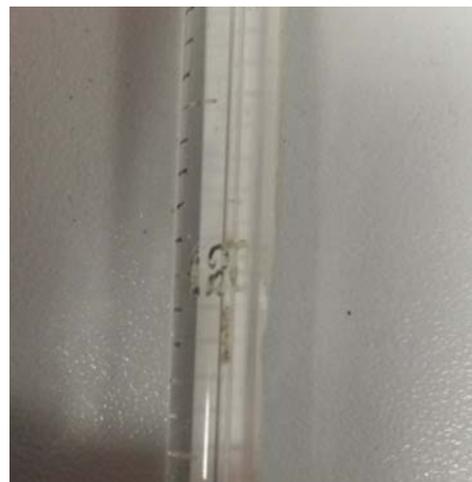
This find was recovered in two pieces, both consisting of a length of thin copper alloy tubing with an aperture along one face, housing a glass tube. Close inspection of the glass section of the find revealed that it is marked with incised increments and numbers, which plausibly denote temperature, suggesting that this find is a thermometer.

LTM_0579 has small holes, visible in the image on the right, which suggest that this find was used to gauge the temperature of steam or liquid which passed through these openings to raise the mercury housed within the thermometer glass. It was likely to have been fitted to an engine, probably that of a ship or other vessel.

A review of geophysical survey data from 372/1 undertaken by Wessex Archaeology in March 2013 identified a number of features of potential, though unconfirmed, anthropogenic origin within the Licence Area. Two lie within the ADZ and are protected as a precaution by an exclusion zone. On the available evidence, one is interpreted as a debris field and this find has potentially migrated from it in to the dredged area, accounting for its presence offshore. Alternatively it may have been lost or deposited over board from a vessel using the area. The stylistic elements of the find suggest a late 19th/early 20th century date and the inclusion of copper in the find's manufacture supports the hypothesis that this item was used in the marine context.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for the Isle of Wight
- The Local Government Archaeology Officer for the Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire





LTM_0580: Switch Gear Cover

These three objects were found by staff at Lafarge Tarmac's Bedhampton Wharf. They were dredged on the 8th December by the *Arco Dee* with aggregate from Area 372/1, which lies to the east of the Isle of Wight.

The origin of these three finds was not obvious at first and they were reported (correctly) as electrical components. Wessex Archaeology collected the finds for analysis. Close inspection revealed a partially obscured word stamped onto the shoulder of the find shown bottom left in the image above. The word, 'COUGHTRIE', corresponds to the name of a Glaswegian lighting manufacturer that has been in operation for over 70 years.

Coughtrie were contacted and Ian Varney of their technical team recognised the finds, not as components in lighting, but as switch gear mechanisms. Here's what he said:

'These parts are not from light fittings of this company, but are Coughtrie items from before the Second World War, and are from fixtures for switch gear in mining and related areas. The founder of this company had brothers who were in the business of providing highly sealed switch gear housings for coal mining which kept the sparks (normal in switching on or off electrical equipment) sealed from any volatile gasses present in the mines. This sealing of the housings follows through to the light fittings we produce today.'

Switch gears and switch gear housings are also used on board ships where they serve a similar function in insulating electrical sparks to prevent explosion. A review of geophysical survey data from the Area undertaken by Wessex Archaeology in March 2013 identified a number of features of potential, though unconfirmed, anthropogenic origin within the Licence Area. Two lie within the ADZ and are protected as a precaution by an exclusion zone. On the available evidence one is likely to be a debris field and these finds have potentially migrated from it in to the ADZ, accounting for their presence offshore.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0581: Mouthpiece

This artefact was discovered in December 2014 by James Lutman at Lafarge Tarmac's Bedhampton Wharf. It was recovered from material dredged by the *Arco Dee* in Licence Area 372/1, 10km to the east of the Isle of Wight.

This find is recognisably a brass diver's mouthpiece. It has twin rubber hoses which would attach to a regulator on the diver's back. It has a valve operated by a tap (visible right) which, despite time spent on the seabed, can still be opened.

Images of this intriguing find were sent to Bob Campbell of the Historical Diving Society. He identified it as the mouth piece assembly of a twin hose regulator and elaborated that it would have been part of a full face mask covering the nose and mouth of the diver.



The design, he feels, is military and was probably lost by a naval diver, which fits as the area it was dredged from is close to the Naval base of Portsmouth. The valve allowed a diver to open the mouthpiece and breathe ambient air whilst on the surface, switching to tanks before entering the water.

Bob believes this mouthpiece dates from the 1950's, or potentially the early 1960's, which several archaeologists at Wessex Archaeology concur with. How it reached the seabed is unknown. Theories range from the mundane - being lost overboard - to the tragic - lost with a diver. It could also have been dumped with terrestrial rubble known to lie nearby.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire

LTM_0581: Mouthpiece Update



This artefact was discovered in December 2014 by James Lutman at Lafarge Tarmac's Bedhampton Wharf. It was recovered from material dredged by the *Arco Dee* in Licence Area 372/1, 10km to the east of the Isle of Wight.

Since the initial report was issued for this find (February 2015) the Historical Diving Society have continued their research into it and have been able to conclusively identify this interesting discovery.

It is a Dunlop Underwater Swimmers' Breathing Apparatus (UWSBA) mouthpiece - the diving gear used by Second World War frogmen. Dunlop are renowned rubber manufacturers, applying their trade to a range of products including car, bicycle and aeroplane tyres, garden hoses...and diving gear.

Second World War clearance divers, often dubbed 'frogmen' because of their appearance when suited for operations (with a dark rubber suit; large, webbed fins; and face hidden behind rubber and glass), played an integral part in wartime operations.

Amongst other things, they were the first men out of the boats and onto the beach during the Normandy Landings of D-Day, 6th June 1944. During this mission they were deployed to disarm and disable German defences that had been put into the water and inter-tidal zone to prevent British boats and amphibious craft reaching the shore. Royal Navy and Royal Marine 'lock-yews', Landing Craft Obstacle Clearance Units (LCOCUs – which gives rise to the nickname) entered the water to disable contact mines and improvised devices laid by the Germans. Reconnaissance and military intelligence had identified their presence and frogmen were deployed to disarm the munitions. Without them, the loss of life could potentially have been severe or the landing abandoned.

This find then tells of daring and intrigue, covert missions and fantastic bravery in the difficult conditions of underwater work.

Many thanks are extended to the Historical Diving Society for their careful research, and especially to Bob Campbell for his time, enthusiasm and detailed technical drawings of the find.



LTM_0582: Shot Ball

James Lutman found this artefact at Lafarge Tarmac's Bedhampton Wharf. It was amongst material dredged by the *Arco Dee* from Area 372/1 on 6th December 2014.

This is recognisably a shot from a projectile weapon though unusually this example is made of lead, not iron as other Protocol examples have been. It has a diameter of 40mm and a weight of 12oz.

Charles Trollope, an expert in historic ordnance, viewed images of the find and believes that this example is not English but instead could be Dutch or Spanish. It is likely to date to the 1500's, and if proven to be Spanish, could potentially relate to the Spanish Armada.

This type of projectile may have been fired by a small breech loading weapon (defined as one where the projectile is loaded through the rear, or breech, rather than through the muzzle at the front) which was probably on board a ship.

The south coast has played host to a number of battles and conflicts (ranging from the Spanish Armada to the World Wars) and evidence of these events is well represented by Protocol finds.



Examples of iron shot dredged from the South Coast

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0583: Case Shot Ball

Dean Lutman found this artefact at Lafarge Tarmac's Bedhampton Wharf. It was amongst material dredged by the *Arco Dee* from Area 372/1 on 6th December 2014.

This iron shot measures 30mm in diameter and weighs 2oz. It is made of iron and has a casting line around its circumference from manufacture. It is in a relatively good condition and so may have been buried on the seabed before its recovery.

Charles Trollope, an expert in historic ordnance, viewed images of the find and has suggested that it is likely to be from a case shot. This consisted of a cartridge (usually tin or iron though examples made of canvas or wood are also recorded) filled with ammunition. In many instances, the ammunition was lead or iron balls like the one pictured, packed into the case with sawdust or a similar material. The case would be loaded into a gun – probably for this find, Charles tells us, a 9 or 12-pounder – and fired by igniting an explosive behind the case. The projectile would fire out of the barrel of the cannon and explode, pounding the enemy with the individual shot.

Charles believes from studying the photograph and measurements of the find that this example could date from the 17th century and could be Dutch or English.

Many battles have been fought off of the south coast and evidence of these battles has been well evidenced by Protocol finds. An assessment of the Licence Area prior to the granting of the licence to dredge revealed no remains that would indicate that a site connected with this find lies on the seabed, and so this is deemed to be a chance find. It was likely fired in conflict, or as a training shot, accounting for its presence offshore. Amongst the same cargo was a lead shot ball, LTM_0582, but this is believed to be older than this find and the two are not currently thought to be connected.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0584: Buckle

This buckle was discovered by Gary Cooper at Bedhampton Wharf, in material dredged by the *Arco Dee* from Licence Area 372/1, 10km east of the Isle of Wight.

This metal buckle measures approximately 8cm by 4cm.

The find was sent to Wessex Archaeology for further analysis. Finds Specialist Lorraine Mepham described the artefact as an asymmetrical, rectangular buckle with an oval strap loop and a missing pin. The discoloration on the bar to the right could be the 'shadow' from the pin. The size and shape of the buckle suggests that it could have been used as a horse harness, or something else fairly substantial, rather than as a belt or clothing buckle. The buckle could date to the 18th century, but more likely was produced in the 19th or 20th century.

The provenance of this artefact is unknown, and it appears to be an isolated find. It is possible that the find could come from an unknown wreck, however it is also possible that the buckle could have been washed overboard or dumped in the area. Any further discoveries of artefacts in this area should be reported, as they could provide more information about the provenance of this artefact, and may have the potential to reveal a previously unknown shipwreck.

A belt buckle was previously recovered in an assemblage of 23 metal objects (UMD_0241), discovered by S. Smith, G. Cooper and D. Lutman at Bedhampton wharf in material dredged by the *City of Chichester* in 2009. The dredger had been operating in Licence Area 122/3, just over 3km north-east of Licence Area 372/1. The material was interpreted as possibly part of debris and rubble from World War II that was discarded in the area, which may also explain the provenance of this find.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for the Isle of Wight
- The Local Government Archaeology Officer for the Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0586: Igneous Rock

N. C. Sait discovered this find at Lafarge Tarmac's Burnley Wharf. It was dredged with material from Area 395/1 which lies in the South Coast region, to the east of the Isle of Wight.

This strange and enigmatic find was recovered at Burnley wharf. It is heavily covered in marine sands and concretions and it is very difficult to understand what it is from the pictures alone.

Despite being reported in early 2015, it was not identified until the summer of the same year after it was delivered to Wessex Archaeology for identification.

Whilst the general shape of the find, the contours on its ends and the slight suggestion that it was formed in plates, hinted that it might be a mammoth tooth, analysis proved that it was instead a naturally occurring igneous rock.

This was only proven by gently removing part of the concretion under controlled conditions and examining the surface below under a microscope. Finds and animal bone experts at Wessex Archaeology agreed that the find lacked the sort of structure we would expect to see in tooth material, but that the crystalline structure visible was likely to represent a rock formed through volcanic action.

The reporting of this find shows the dedication of the crew at Burnley, who have repeatedly shown their commitment to the Protocol.



LTM_0586 Detail

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate



LTM_0587 Engine Mounting

This engine mounting was discovered by J. Jerromes at Burnley Wharf. It was recovered from material dredged on 5th January 2015 by *the City of Chichester* in Licence Area Selsey 395, east of the Isle of Wight.

This find has been identified as an engine mounting by many of the experts who examined photographs of the find. It is also very similar to another recent find from the area, LTM_0568, that was also identified as an engine mounting. While it is possible that this engine mounting came from a boat, submarine or aircraft, the prevalence of aircraft remains in the area, and similarity to other finds, suggests that it is most likely an aircraft engine mounting.

This find has been described by Bob Davis, from Wessex Archaeology, as a dampened mounting because of the two rubber 'rings' or 'bushes' that would reduce unnecessary vibration between the engine and framework of the aircraft. As these rubber bushes are in very good condition, they have either been buried until fairly recently or are of a high quality rubber, such as that used on aircraft. The Preliminary Record Form describes the thread on the retaining bolts as 'very fine and possibly metric'. It is hypothesised that as all British aircraft had imperial measurement components that this may be an item of German manufacture.

Curator of the RAF Museum in Stafford, Ewen Cameron, identified LTM_0587 as a dampened engine mounting for a German Jumo 211 engine which was used in Ju 87, He 111 and Ju 88 aircraft. As a number of pieces of a Ju 87 aircraft have previously been recovered from the same area, it is probable that this mounting came from the same aircraft.

The amount of aircraft material recovered from Licence Area 395 suggests the presence of a downed aircraft either within or in the vicinity of the Licence Area. Evidence suggests that the plane is a German Ju 87 and that the crash site is highly dispersed.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0589: Ammunition Clip

J. Jerromes made this discovery at Lafarge Tarmac's Burnley Wharf in January 2015. It was amongst material from Area 395/1 which lies to the east of the Isle of Wight, in the South Coast region.

This is not the first disintegrating ammunition clip dredged from the area, as other similar clips were landed and reported in 2013. This example, like those from 2013, is an M13 disintegrating link from a British L7 General Purpose Machine Gun. These are pushed out of the gun with the cartridge case after firing and are then discarded. As this was found offshore, it is highly likely that this is from a gun that was being used in a naval role and that the clip entered the water after firing.



Detail on similar find Tarmac_0454 reported in 2013

M13 disintegrating ammunition clips were first used in the late 1950s and can still be found in use today. The corrosion visible on the clip pictured here suggests that this has been in the water for some time, allowing the rust to form, and so it is probably from the earlier part of this time frame.

This find has likely come to rest on the seabed either during firing of a gun at sea as a test or in training.

An examination of other finds reported from this Licence Area over the past 9 years of the Protocol does not suggest that this find is indicative of a further site of archaeological significance, such as a shipwreck, and it is likely to be a discrete find.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0590: Trowel

N. C. Sait made this archaeological discovery at Lafarge Tarmac's Burnley Wharf, in Southampton. It was dredged amongst material from Area 395/1 which lies to the east of the Isle of Wight, and was found in January 2015.

This highly recognisable find is a WHS pointing trowel, likely (though damage to the find prevents accurate measurement) to be a 4.5 inch trowel. Since the early twentieth century these have been the preferred trowels of archaeologists working in Britain (with American archaeologists favouring the Marshall Town). An archaeological trowel has to withstand a high amount of stress, digging through a variety of geologies and being employed in a stabbing motion to cut sections through archaeological features.



An archaeological WHS pointing trowel

In 2005 a redesign led to complaints of blades snapping on site and, in response, WHS (which stands for William Hunt & Sons, now part of Spear and Jackson) issued a version specifically for archaeologists. This has a longer rise before the tang enters the handle to protect knuckles from being skinned on site (a common hazard!)

How this find, which is likely to be an early twentieth century example, entered the water is unknown. Clearly trowels are not essential tools on board vessels using Southampton Water and the Channel but there is a well evidenced spread of post-war debris in this area. This trowel could have come from Southampton or Portsmouth and been deposited with the rubble. Whether it was used for pointing bricks, or for archaeological excavations is not known. A spokesperson for Spear and Jackson viewed images of the find but was unable to add further information.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for the Isle of Wight
- The Local Government Archaeology Officer for the Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0592 Iron Lever

This object was discovered by J. Jerromes at Burnley Wharf. It was recovered from material dredged on 22nd January 2015 by the *City of London* in Licence Area 351, which lies to the east of the Isle of Wight.

This iron object measures approximately 4.5cm wide x c.48cm long, is roughly W-shaped and broken at one end. It is formed like an I-bar for strength and lightness. The intact end has a hole through it and a curved plate/step protruding from it.

The broken end, shown left above, has an attachment plate with holes for two fixings, possibly bolts, and this end was likely fixed in position. By contrast the other end, shown right, probably had some limited movement, controlled by a pin secured through the visible hole. The evidence for this comes from the plate/step, which appears to be a stop or brake for a circular, rotating component positioned under it.



LTM_0543 Metal Step

This type of hard-wearing iron construction is not used on aircraft but could possibly be found on a ship, a terrestrial vehicle or within heavy machinery. Interestingly, another find thought to have come from a terrestrial vehicle was dredged from Area 351 recently. LTM_0543, pictured above, is a mangled metal step reported in the 9th year of Protocol operation.

This Licence lies close to Area 395/1 and relinquished Licence 122/2, both of which have held evidence of post-war dumping of blitz rubble. Area 351 potentially contains some of this spread, accounting for terrestrial finds within the Licence.

This find is of late 19th century or early – mid 20th century date.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) Hampshire



LTM_0593: Bar Shot

Josh Small discovered this complete bar shot at Erith Wharf. It was dredged by the *City of London* and found in a mixed cargo of material from Licence Area 430 off Southwold and Licence Area 460 off Eastbourne.

Josh Small discovered the complete bar shot above at Erith Wharf.

Bar shot are an offensive weapon fired from cannon but with the additional destructive power of being capable of spinning on an axis to disable masts and rigging.

They were only effective against wooden vessels and so fell out of use (as did cannons) when wooden vessels were replaced with steel plated vessels that did not rely on sails and masts for propulsion (for example steamships which came into use around 1800).

Charles Trollope, an expert in historical ordnance studied images and the available measurements of the find to suggest that this bar shot dates from the mid-17th century onwards (1650+) and is probably Dutch or English. Charles also suggested that this find is more likely to come from Licence Area 430 off Southwold, rather than Licence Area 460 off Eastbourne, as 430 coincides with the site of the Battle of Solebay which took place on the 28th May 1672. Several shipwrecks from this battle are known to be in this region and it is likely that this bar shot is a relic of that battle, giving a very specific date for its deposition at sea.

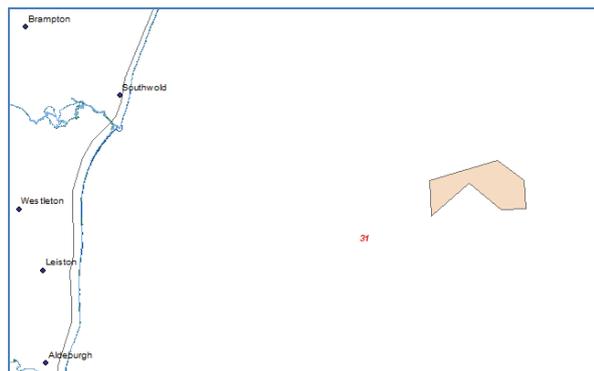
The Battle of Solebay was the first conflict of the third Anglo-Dutch War which lasted from 1672-1674. The Wars were fought for control over the seas and trade routes, and evidence of conflicts fought during the long running dispute has been found from several east coast licence areas.



Close up of one end of LTM_0593

The Battle of Solebay began (according to the old English calendar in use in England at the time of the battle) on the 28th May 1672. A fleet of 93 English and French ships was anchored at Solebay when they were attacked by 75 Dutch ships. This was in retaliation for the alliance attempting to blockade the Dutch fleet in their home ports, preventing them from using the North Sea trade routes.

The Anglo-Dutch Wars spanned over a century, beginning with the outbreak of the first war in 1652 and ending with the fourth episode in 1784.



Area 430

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record for the Historic Environment
- The Historic Environment Record for Suffolk
- The Local Government Archaeology Officer for Suffolk
- The Finds Liaison Officer (Portable Antiquities Scheme) for Kent

Key English Players in the Battle

Duke of York – 1633 - 1701
Also known as James II King of England and Ireland, and later James IV King of Scotland. During the Battle of Solebay he was Lord High Admiral and commander of the Royal Navy.

1st Earl of Sandwich 1625 – 1672

Edward Montagu was an infantry officer, then a naval officer and politician. In the Third Dutch War he was Vice-Admiral of the Blue. His flagship Royal James was attacked by fireships during the Battle of Solebay and he and many others lost their lives when the ship was destroyed.



CEMEX_0594: Cannonball

This cannonball was dredged from Area 460 in February 2015. Andrew Lingham found it at Northfleet Wharf. Area 460 is in the East English Channel region, south-east of Eastbourne.

This find is clearly a cannonball – ordnance used heavily during the post-medieval period for battle both on land and at sea. These had immense destructive power, though at sea, with the guns being mounted on ships and being fired at moving targets, more than a few failed to impact and reached the seabed intact. Despite concretion masking one side of this example, CEMEX_0594 appears to be in good condition with no visible impact damage and so may have entered the water without striking its target.

This find measures approximately 14cm in diameter, equivalent to around 5.5 inches. Cannonballs, dating from before metric measurements were introduced, are often recorded in imperial measurements.

At 5.5 inches this cannonball was likely fired by a 24-pounder gun, the second largest to be fitted to both English and French ships during the 17th and 18th centuries. Vessels, both naval and merchant, would run armed with an array of guns in order to protect crew, cargo and vessel from attack. This cannonball, the first reported from this dredging area through the Protocol, is likely to have reached the seabed due to firing during battle, or training, in the area. Alternatively, it could have been lost with a shipwreck and staff working with cargoes from this relatively new licence should be vigilant in case further finds suggest the presence of a hitherto unknown wreck.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Sussex
- The Local Government Archaeology Officer for Sussex
- The Finds Liaison Officer (Portable Antiquities Scheme) for Kent



LTM_0595: Bullets

These were found by J. Jerromes at Lafarge Tarmac's Burnley Wharf in Southampton. They were dredged from Area 127 which lies in the South Coast region, to the west of the Isle of Wight.

These four bullets were found at Lafarge Tarmac's Burnley Wharf and were identified from images by Jonathan Ferguson of the Royal Armouries Museum. They are:

Top left: A steel core from an armour piercing round likely to have been fired by a heavy machine gun. These were used on aircraft and ships.

Top right: A .303 round correctly identified by the team at Burnley.



Text box, left: Another .303 clad (possibly) in gilding metal. This metal, which is an alloy of copper, is used for several purposes including the coating of bullets.

Text box, right: This bullet is damaged (probably during or shortly after firing) but Jonathan notes a similarity between this and the American .30-06 bullet. The '06' denotes the year it was adopted – 1906 – and it remained the US Army's bullet of choice for the next fifty years. Different variants were available and this one, Jonathan says, bears some similarity to the armour piercing version produced, known as the T6.

Bullets are a common find offshore, as is ordnance, and not all incidences need to be reported through the Protocol. Examples that are unusual can be reported after health and safety considerations have been met. Many finds connected with ordnance found offshore, or on land, will simply remind us of the battles of the twentieth century. Others though tell different stories, such as the bullet reported by Burnley last year that was found a significant distance from the only recorded testing site for that ammunition.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0596: Brass Plaque

This brass plaque was discovered by J. Jerromes at Burnley Wharf. It was recovered from material dredged on 12th February 2015 by the *Arco Dee* in Licence Area 127/1, which lies to the west of the Isle of Wight.

This brass plaque measures approximately 120mm x 28mm x 3mm and has the inscription '*Warmes wasser*' on it; German for 'Hot water'. The screw holes at either end measure 5mm diameter and suggest that it was attached to wall, or cabinet, above a tap.

The object is of a kind found on late 19th and early to mid 20th century ships, and is likely to have originated on a German vessel from this period.

There are no recorded German shipwrecks in the vicinity of Area 127, however dredging in this part of Area 127 has produced a number of objects which are likely to have originated on ships from a similar period, but which can not be associated directly with a known shipwreck.

This includes LTM_0536 large machinery screws, LTM_0560 a lever face plate and LTM_0562 a brass door latch. All of these finds, like item LTM_0596, have no evidence of having recently been attached to a ship and may be discreet individual items which reached the seabed through damage to shipping during wartime.

Previous research has demonstrated, however, that there are still unknown and unidentified shipwrecks in the English Channel, and so it is important that finds like this continue to be reported through the Protocol.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



CEMEX_0600: Timber

This timber was found at Dagenham Wharf and reported by Dave Whitby. It was dredged with material from Area 511 which is in the East Coast region, approximately 8km east of Lowestoft.

This find is a wooden timber measuring approximately 1m in length and 20cm across each face. It is square in profile with a bevelled end and comes from a hard wood tree, potentially oak.

It has clearly been worked and shaped as the bark has been removed, the sides have been worked to form flat faces and one end appears to be bevelled. Apart from this however, it has no distinguishing features such as tool marks, worked sections, drilled holes, or metal and wooden fixings or dowels.



Close up view of the bevelled end
of CEMEX_0600

This absence of distinguishing characteristics makes firm interpretation difficult. The most plausible scenario resulting in the deposition of worked timber on the seabed is the loss of a wooden or composite vessel or parts of a vessel during conflict, storm or accident. An archaeological assessment prior to licensing identified a number of known wrecks within the proposed Licence Area (recorded by the UK Hydrographic Office and the National Record of the Historic Environment, or recognised on geophysical survey). Those that lie within the Active Dredge Zone are protected by an Archaeological Exclusion Zone, though this find may plausibly have migrated from one of these wrecks into the dredged area. Alternatively, the coasts of Suffolk and Norfolk have had a series of installations built along sections of them throughout the twentieth century to protect against coastal erosion. Breakwaters and groynes utilise timbers similar to this one and it may have been washed out to sea from one of these, which is potentially plausible given that this is a high energy coastline.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Suffolk
- The Local Government Archaeology Officer for Suffolk
- The Finds Liaison Officer (Portable Antiquities Scheme) for Essex



CEMEX_0601: Iron Strap

Steve Batty discovered this artefact at Dagenham Wharf. It was dredged by the *Reimerswaal* amongst material from dredging Area 460, which lies approximately 20km south east of Eastbourne, Sussex.

This iron object was found at CEMEX's Dagenham Wharf. It is broken at both ends and has been distorted, either during its time in the water, or during its recovery. This makes understanding what it is difficult.

The artefact is made from two pieces of iron that have been riveted together – see right. One piece attaches to the other to form a square aperture. The straighter section, seen below in the main image above, has holes in it that would have allowed it in turn to be affixed to a larger item.



Detail of CEMEX_0601

This is a broken iron strap and has probably come from a ship. Similar straps are seen on ships from the 19th century affixed to masts or spars. The term 'spar' incorporates a whole range of different long poles on a ship, including the mast. Spars hold the sails, secure rigging and can be used in the operation of pulleys in a wide variety of roles. Straps like this one allow spars to be attached, either to other spars or to the vessel itself, and allow for the attachment of ropes or other items of rigging.

Alternatively the find may be more recent than the 19th century. Less than a kilometre from the approximate site of dredging lies the dispersed wreck of a Greek ship – the *Gold Coin* – which sank in heavy weather in 1972. It is possible that this find is associated with that wreck, though it is not possible to confirm this. Further finds from Area 460 may help interpretation and details of this find will be kept, and referred to, should further material from the Area be reported through the Protocol.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Sussex
- The Local Government Archaeology Officer for Sussex
- The Finds Liaison Officer (Portable Antiquities Scheme) for Essex

This artefact was discovered by Ian Massey at Johnsons Wharf, Greenhithe. It was recovered whilst processing material from two cargoes, from the *Arco Avon* and the *Arco Arun*, and could be from either Licence Area HAML 401/2, 20 km off the east coast of Norfolk or South Hastings 460, 13km south of East Sussex.

LTM_0602: Iron Nail or Spike



This artefact measures 22cm in length. Images of the find were shown to Bob Davis, a finds specialist at Wessex Archaeology. He described the artefact as a very large nail, more accurately described as a 'spike'. The spike has a domed head and a square sectioned shaft that suggests that it was made by hand. The large proportions of the spike suggest that it was used on something large, and similar examples include spikes used on railways to hold down rails onto sleepers.

A detailed study of ships' fastenings has been undertaken by Michael McCarthy (1996, 2005), and he described the spikes that shipbuilders use to fasten thick ship planking. Spikes are large, square sectioned nails that can be either hand wrought or cut and are generally made of galvanized iron, steel or a composite of the two. Spikes often have a 'rose' shaped head. A spike can also be called a 'boat spike', 'spike nail' or 'deck nail'. Spikes come in a wide variety of sizes: the smallest spikes can be as short as 3 inches (7.6cm) in length, whereas spikes used on large ships, such as the third-rate 74-gun ships built in the mid-18th and early 19th centuries, could be as long as 15 inches (38cm).

This spike appears to be an isolated find, but there is a possibility that it came from a wooden sailing vessel. It is possible that all that is left of the vessel are the metal fastenings on the seabed, however, it is also possible that wooden remains could be discovered in the area. Any further discoveries of metal fastenings or wooden material should be reported. Further discoveries may have the potential to lead to the discovery of a previously unknown wreck site.

Further reading:

McCarthy, M., 1996, Ship's fastenings: a preliminary study revisited, *International Journal of Nautical Archaeology* (1996) 25.3 and 4. 177-206.

McCarthy, M., 2005, *Ship's Fastenings: From Sewn Boat to Steamship*, Texas A&M University Press.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Records for Kent
- The Local Government Archaeology Officers for Kent
- The Finds Liaison Officer (Portable Antiquities Scheme) for Kent



LTM_0603: Large Metal Object

This artefact was discovered by Steve Waddell at Greenwich Wharf. It was found whilst processing cargo from the *City of Westminster* dredged in either South Hastings (Area 460) or Bassurelle (Area 458), 13km and 40km south of East Sussex, respectively, so its original location cannot be confirmed.

This iron artefact measures approximately 30cm in length and the base appears to measure approximately 23cm across the widest part. The artefact has clearly spent some time in the water, as it is badly corroded and has considerable marine encrustation.

Images of the find were forwarded to Bob Davis, a finds specialist at Wessex Archaeology and to Paolo Croce, a shipwreck expert at Wessex Archaeology. The specialists agreed that due to the encrustation and the fact that the artefact looks as though it has been rolled on the seabed, it is very difficult to identify it conclusively. The image above appears to suggest that the large 'bottom' of the artefact was once originally round and flat, with a perpendicular, possibly round, shaft connected to it. It is possible that the artefact is all one piece and it could be made of cast iron.

It is conceivable that the artefact could have from a ship, although its original purpose is unclear. It could be a round bollard, the base of a davit, or a flange. Other possibilities include the base of a stanchion, as it is possible that the artefact was initially taller or had other components fitted to it. Yet another possibility is that it is the end of some kind of a pipe that has corroded inside.

This artefact is likely an isolated find, and as it appears to have been on the seabed for some time, its original location and purpose may never be known. However, any additional artefacts discovered from the area should be reported through the Protocol, as they may provide more information about this find.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Greater London
- The Local Government Archaeology Officer for the Corporation of London
- The Finds Liaison Officer (Portable Antiquities Scheme) London



LTM_0604: Padlock and Chain

This padlock and chain were discovered by Ian Massey at Johnsons Wharf, Greenhithe. They were recovered whilst processing material from two cargoes, from the *Arco Avon* and the *Arco Arun*, and could be from either Licence Area HAML 401/2, 20 km off the east coast of Norfolk or South Hastings 460, 13km south of East Sussex.

Images of the padlock and chain were shown to Bob Davis, a finds specialist at Wessex Archaeology. He noted that this is a padlock of 'lever' design. The lever has a flat profile and is hinged on one side. The two face plates are riveted together with brass rivets that appear to be finished by hand due to the irregular nature of their flattened heads. The padlock measures 12.5cm by 8.5cm by 3cm. It appears to have been plated with rust proofing, a process known as galvanising. The plating could be zinc and applied through hot dipping rather than painting. This process has been carried out since the 19th century. The chain comprises nine oval links and a single round link, and it appears to be made of a rust proof material. One side of the padlock is stamped with: 'WM & A QUINEY, LONDON' (as can be faintly seen in the inset image), however further searches have not revealed any additional details about the manufacturer. The padlock is likely to date to the 20th century.

Images of the find were also shown to Brian Morland, Historian and Curator of the History of Locks Museum Reference Collection and Archive. He could not provide further details about the manufacturer, however he noted that the padlock has a distinctive shackle style. Other padlocks with a similar shackle style have been attributed to the Thames Bargemen, however, these have all been older, dating to the late Georgian/Victorian period, whereas he described this padlock as very much younger, which confirms a 20th century date.

This is likely to be an isolated find. However, any future finds in the area should continue to be reported through the Protocol as they could provide further context for this discovery.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Kent
- The Local Government Archaeology Officer for Kent
- The Finds Liaison Officer (Portable Antiquities Scheme) Kent





LTM_0606: Nail or Spike

This artefact was discovered by Ian Massey at Johnsons Wharf, Greenhithe. It was recovered whilst processing material from two cargoes, from the *Arco Avon* and the *Arco Arun*, and could be from either Licence Area HAML 401/2, 20 km off the east coast of Norfolk or South Hastings 460, 13km south of East Sussex.

This object measures approximately 14cm in length, and the head measures approximately 4cm across. It appears to be square in section, and was probably hand made. The find was initially described as a 'dump bolt', however a detailed study of ships fastenings, undertaken by Michael McCarthy (1996, 2005), describes dump bolts as large, round, circular-section nails with a solid head. Therefore, this find would likely be better described as a 'nail' or 'spike'. Nails could be round or square in section, and could be made of iron, copper or mixed metal. Spikes are large, square in section, cut or hand wrought and made of galvanized iron, steel or a composition of different metals. In general, the term 'spike' is generally preferred for large nails of predominantly square section, whereas the term 'dump or short bolt' is preferred for large nails of predominantly round section, although there are some bolts that are square in section. Overall, names of fastenings can sometimes be somewhat problematic, as the meanings of 'nail' and 'bolt' have changed over the last century or so (Stone 1993).

Nails of this shape may have been used to fix wooden carpenter joints. The head profile is longer on one side and could act as a retaining 'hook' for planks. It is possible that this nail was used on a wooden vessel, but dating it could be difficult, as iron nails have been in use as far back as the Iron Age. This nail appears to be in relatively good condition, likely indicating that it was buried within sediments rather than having been exposed on the seabed. This appears to be an isolated find, but any further finds in the area could provide further information. This discovery is very similar to one of the nails reported through the Protocol in 2011-2012 as part of Tarmac_0397, dredged by the *City of Chichester* from Licence Area 127, which lies approximately 19km southeast of Bournemouth, Dorset.

Further reading:

McCarthy, M., 1996, Ship's fastenings: a preliminary study revisited, *International Journal of Nautical Archaeology* (1996) 25.3 and 4. 177-206.

McCarthy, M., 2005, *Ship's Fastenings: From Sewn Boat to Steamship*, Texas A&M University Press.

Stone, D., 1993, *The Wreck Diver's Guide to Sailing Ship Artifacts of the 19th Century*. Underwater Archaeological Society of British Columbia.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Kent
- The Local Government Archaeology Officer for Kent
- The Finds Liaison Officer (Portable Antiquities Scheme) Kent



LTM_0607: Possible Fishing Float

This artefact was discovered by Ian Massey at Johnsons Wharf, Greenhithe. It was recovered whilst processing material from two cargoes, from the *Arco Avon* and the *Arco Arun*, and could be from either Licence Area HAML 401/2, 20 km off the east coast of Norfolk or South Hastings 460, 13km south of East Sussex.

This artefact measures approximately 6.5cm (2.5 inches) across by 3cm (1 inch) deep, and the hole in the middle measures approximately 1.5cm (0.5 inches) across. The artefact is dark brown and appears to be made of soft wood or cork. The initial description suggested that this was possibly used as a fishing float, and Bob Davis, a finds specialist at Wessex Archaeology agrees with the interpretation.

There is archaeological evidence for fishing nets and sinkers dating back to the Mesolithic (8,500 – 4,000 years ago). The oldest known fishing net was found in Antrea, Finland, and has been dated to 8,300 BC. Some types of fishing nets need to be suspended in the water with floats, and there are written references to floats made of cork in Greek literature dating back almost 2,000 years.

It has not been possible to date this particular float. Similar floats may have been in use for hundreds of years, however this float is likely more recent, as cork exposed in the ocean would gradually degrade. This type of float could have been used on a wide variety of fishing nets, including a drift net, gillnet, purse net, or seine net.

This appears to be an isolated find, however further discoveries could provide further context for this artefact and should be reported through the Protocol.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Kent
- The Local Government Archaeology Officer for Kent
- The Finds Liaison Officer (Portable Antiquities Scheme) Kent



LTM_0608: Copper Cylinder: Possible Sounding Lead

Steve Smith discovered this object at Bedhampton Quay. It was recovered from material dredged by the *Arco Dee* in Licence Area 395/1, located east of the Isle of Wight.

This cylindrical copper object measures approximately 12.5cm in length by 3cm in width. On one side, it has measurement markings, starting at zero (on the left hand side of the above photo) and continuing to two inches. Images of the find were shared with Paolo Croce, a marine archaeologist at Wessex Archaeology. He suggested the find could be a type of sounding lead. Sounding leads date back at least 3,500 years, and there are carvings and paintings of ancient Egyptians using both sounding poles (for relatively shallow water) and weights attached to lines (for deeper water) dating to the time of Queen Hatshepsut, approximately 1500 BC.

Sounding leads often weigh between four and fourteen pounds (1.8kg to 6.4kg), and they would have been attached to a line to facilitate recovery. By the beginning of the 17th century, the line attached to the lead was marked with a piece of material every fathom (1 fathom = 6ft of line). This artefact appears to have had some kind of connector on the rounded end (right hand side of the above photo, see box adjacent for detail), possibly indicating that some kind of eye or ring has since broken off. The base of the artefact (left hand side of the above photo) appears to be slightly concave. This concave space could have been filled with a wad of tallow, a waxy substance that could pick up sediment from the seabed, providing the ship's officers with additional information about ship's location. It is possible that the graduated marks on the side could be used to assess the depth of sediment.

It is likely that this is an isolated find that was lost overboard whilst in use. There have been a number of sounding leads reported previously through the Protocol, including three from Licence Area 240 (two reported as Hanson_0346 in 2010-2011 and one as Hanson_0504 in 2013-2014) and one from Licence Area 430 (reported as UMA_0083_b in 2006-2007). The previous discoveries are all very different in size and shape, illustrating the wide range of sounding leads in use over time.

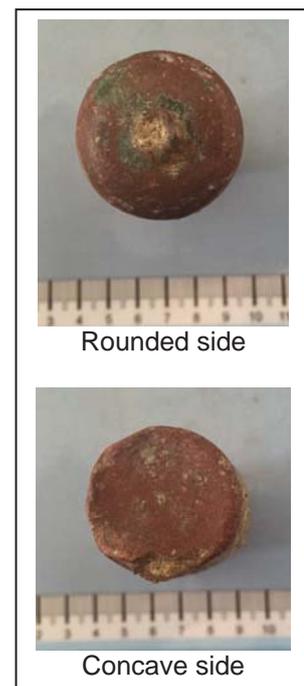
Further reading about sounding leads:

<http://www.navyandmarine.org/ondeck/1800soundinglead.htm>

http://www.history.noaa.gov/stories_tales/poletobeam.html

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) Hampshire



Rounded side

Concave side



CEMEX_0609: Metal Object

This artefact was discovered by David Bennett at Northfleet Wharf. It was recovered from material dredged on 5th May 2015 by the *Sand Fulmar* in Licence Area 512, which lies to the east of Suffolk.

The object comprises alloy metal, and measures approximately 40.6cm in length, 5cm in width, and 2.5cm in depth. As is evident in the images provided, the object has been broken on both ends and bent. There are also fabric remnants attached to the metal and rivet holes visible.

Although the identity of this object remains unknown, it appears to be a piece of 'L' sectioned alloy framing. The composition and shape, in conjunction with the fabric remains and possible rivet holes, suggests this could be a part of a canopy frame.

This is likely to be an isolated find; however, any future finds in the area should continue to be reported through the Protocol, as they could provide further context for CEMEX_0609.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Suffolk
- The Local Government Archaeology Officer for Suffolk
- The Finds Liaison Officer (Portable Antiquities Scheme) for Kent





Britannia_0610: Possible Mast Spar or Seacock

This artefact was discovered by T. Sexton and P. Mrozowicki in material dredged by the *Britannia Beaver* in Licence Area 498, located 25km off the east coast of Suffolk.

This wood and metal object measures approximately 21cm across and 21cm in length (see inset). The wood appears to be quite eroded, and was probably originally larger. The wooden section of timber has a circular metal plate fixing set in at either end. The circular fixings measure approximately 9cm (3.5") in diameter, and the internal diameter measures approximately 5cm (2"). Each of the metal rings has two small holes, possibly for screws that would have been used to affix them to the wood. The metal fixings appear to have a possible 'shelf' within, a short way into the hole.



When the object was found, it was initially described as a mast spar, and it is possible that it could have been used as the base for a mast, now eroded from a wooden deck.

However, it is also possible that the metal part of the artefact could be a seacock, a through-hull ship fitting that is still affixed to part of the wooden hull. Seacocks permit liquid to flow into or out of the vessel. Water flowing into the vessel can be used for example to cool an engine or for fire pumps, whereas seacocks that allow liquid out of the vessel can be connected to things like sink drains or toilets. Some seacocks generally remain open, such as those that allow water in, however others may be opened in port but closed when at sea. It is possible that the 'shelf' on the metal fixing provides a 'seat' for some type of cap that would seal the opening.

This artefact appears to be an isolated find. However, this is the first discovery from Licence Area 498 that has been reported through the Protocol, and any further discoveries in the area should be reported, because it is possible that they could indicate the presence of a previously unknown shipwreck.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Suffolk
- The Local Government Archaeology Officer for Suffolk
- The Finds Liaison Officer (Portable Antiquities Scheme) for Kent



Britannia_0611: Bottlescrew / Turnbuckle

This object was discovered on board the *Britannia Beaver* and reported by R. Lakeman-Turner. It was found in material dredged from Licence Area 340, off the east coast of the Isle of Wight.

This object was identified as a 'bottlescrew' when it was discovered on board the dredging vessel. Images of the find were shown to Paolo Croce, a marine archaeologist at Wessex Archaeology, and he agreed. Bottlescrews, also known as 'turnbuckles', 'rigging screws' or 'stretching screws', are devices used to adjust the tension or length of ropes or cables. The tension is adjusted when the metal frame at the centre is rotated. This bottlescrew measures over a metre in length. The barrel measures approximately 56cm in length and has a small hole at the centre of the barrel. The bottlescrew has a fork at one end (right hand side of the photo), with 'tines' measuring over 10cm in length and holes measuring approximately 2-3cm in diameter. The other end appears to have lost its fitting, or it could be a 'swage' end.

Bottlescrews have a wide range of uses, and vary greatly in size. They can be very small, for example supporting fencing in a garden, to very large, for example the bottlescrews used in buildings and suspension bridges can weigh thousands of pounds.

On ships, bottlescrews have a wide variety of uses. Since the 1860s, they have gradually replaced deadeyes, and they are used to set up shrouds, tension mast and bowsprit stays, and secure anchors in hawsepipes. They are also used for securing containers to the deck. The date of this artefact cannot be confirmed, but it likely dates from the mid- to late- 19th century to present, and it appears fairly similar to bottlescrews still commercially available. Bottlescrews are sold based on the size of wire they are intended to hold, by screw thread size and minimum break load.

On aircraft, turnbuckles can be used to adjust the tension on structural wires and bracing wings. However, according to Ewen Cameron, Curator of the Royal Air Force Museum in Stafford, the turnbuckles used on aircraft are usually quite small, and under 10cm in length. Therefore, this one was much more likely to have come from a ship.

This appears to be an isolated find. It likely has a maritime association, however the wide variety of uses for bottlescrews suggests that this could have been an artefact lost overboard, rather than material from a shipwreck. In any case, any further finds from Licence Area 340 should continue to be reported through the Protocol.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for the Isle of Wight
- The Local Government Archaeology Officer for Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Kent



LTM_0612: Mammoth Tooth

J. Jerromes discovered this find at Lafarge Tarmac's Burnley Wharf in June 2015. It was dredged with material from Area 395/1 which lies in the South Coast region, to the east of the Isle of Wight.

This find was reported in summer 2015 and Wessex Archaeology was fortunate enough to handle it during an awareness visit to Burnley Wharf. Seeing it 'in the flesh' confirmed that the find is indeed a mammoth tooth.

Because of the level of erosion it is not possible to determine which species of mammoth this tooth has come from. *Mammuthus primigenius*, the woolly mammoth, is the mammoth most commonly represented by Protocol finds, though evidence of the southern mammoth, *Mammuthus meridionalis*, has also been recovered.

These teeth are remarkably resilient and survive for thousands of years below the surface of the seabed. They date to the last Ice Age when parts of the area that we think of as the seabed were dry land. Large animals and the people that hunted them would have roamed across the land that is now covered by the English Channel and the North Sea.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Isle of Wight
- The Local Government Archaeology Officer for the Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0613: Aircraft Material

J. Jerromes discovered this material at Burnley Wharf in material dredged by the *City of Chichester* from Licence Area 395/1, off the east coast of the Isle of Wight.



These three pieces of aluminium material were reported from the wharf as pieces of aircraft, with one of the pieces thought to be an access step.

Photographs of the find were sent to Ewen Cameron, Curator of the RAF Museum and to Steve Vizard, a specialist in aircraft material working at Airframe.

Ewen Cameron agreed that the parts appear to be aircraft related, and he suggested that the first piece (on the left) could be a small section of stringer or part of the airframe.

A stringer is a piece of metal that the skin of an aircraft is attached to. They are used to transfer aerodynamic loads from the skin onto the frames and formers. Stringers are often placed between two frames or formers.

An airframe is the mechanical structure of an aircraft. Airframe generally includes the fuselage, wings and undercarriage of the aircraft but exclude the propulsion system.

There have been numerous discoveries of aircraft material in Licence Area 395/1, likely representing well dispersed crash sites for two German aircraft used by the Luftwaffe during World War II. Previous material has been identified as coming from a Junkers Ju 87 and a Stuka dive bomber. It is possible that this material is related to one of these two aircraft crash sites, and dredger and wharf staff should continue to be vigilant to identify and report any further aircraft material discovered in the area.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0615: Possible Anode

This object was discovered by J. Jerromes at Southampton Wharf. It was recovered from material dredged by the *City of Chichester* in Licence Area 395/1, off the east coast of the Isle of Wight.

This object comprises a rectangular metal plate measuring approximately 10cm by 16cm, connected with two bolts to an irregularly shaped steel bracket. The bolt heads are approximately 1.5cm across, and the bolts are still held on with two steel nuts and two steel washers. The steel components have corroded, and the find has likely been on the seabed for some time, rather than buried in a protected environment.

Bob Davis, a finds specialist at Wessex Archaeology, was shown images of LTM_0615. He agreed with the initial report from the wharf that this object is most likely a Galvanic or Sacrificial anode. Anodes such as this are often used to protect buried or submerged metal structures from corrosion. In order to be effective, a Galvanic or Sacrificial anode will comprise of a highly active metal (e.g. magnesium, aluminium, zinc) which will corrode at a faster rate than the object that it is attached to, thus preventing a less active material surface from corroding.

In the case of this find, it appears to be a plate of magnesium, aluminium or zinc bolted to a plate of iron with two hexagonal nuts, which may have had a marine context based on the corrosion observed.

This is likely to be an isolated find. However, any future finds in the area should continue to be reported through the Protocol, as they could provide further context for LTM_0615.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0616: Spoon

J. Jerromes discovered this artefact at Southampton Wharf. It was recovered from material dredged by the *City of Chichester* in Licence Area 395/1, off the east coast of the Isle of Wight.

This stainless steel spoon measures approximately 18cm in length. There are markings on the handle. One side is marked 'Port Line' while the other is marked 'Empire Stainless'.

Stainless steel developed in the early 20th century. The term 'stainless steel' was originally coined for describing cutlery, but it has since become a generic name for a wide range of steel types that are corrosion or oxidation resistant. Stainless steel alloys generally have a minimum of 10.5% chromium, but other elements, such as nickel, titanium and copper are added to increase formability, strength or toughness. Carbon and nitrogen are also added. Stainless steels are designed to be corrosion resistant with regards to specific applications or environments. As this spoon was designed as tableware, it is not surprising that it has corroded slightly in the sea. From the corrosion visible on this spoon, it appears to have been exposed to sea water for some time, rather than buried in a protected, anaerobic environment.

The 'Empire' is a traditional pattern with a thread and bow border and a flame at the handle ends. Empire stainless steel cutlery can still be ordered online today.

The 'Port Line' began in 1914 as the 'Commonwealth & Dominion Line'. It comprised 23 ships and soon increased to 25. In 1916 the company was bought by the Cunard Steamship Company and renamed 'Cunard Line Australasian Services Commonwealth and Dominion Line', but it soon became known as the 'Port Line' and the name was officially adopted in 1937. In 1982 the last two Port Line ships were transferred to Brocklebank Line. Therefore, the spoon dates between 1937 and 1982.

This spoon appears to be an isolated find. It is not known how it ended up in Licence Area 395/1, however, it was likely lost or tossed overboard as a ship passed through the area. Other cutlery finds from the same Licence Area include: a Cunard Line Steamship Company fork (LTM_0499), a spoon marked 'G. Ltd' (Tarmac_0432), a fork with indecipherable markings (Tarmac_0433), a fork marked 'Thomas Wilkinson & Sons Birmingham' (Lafatarm_0475), a modern spoon (Tarmac_0310) and a fork engraved 'SSP&CCo' (Tarmac_0326). In addition to cutlery finds, a wide array of material from a range of time periods has been recovered from Licence Area 395/1 over the years. After the Second World War, the general area was used as a dumping ground for rubble and other material, and it is also possible that the spoon found its way here at that time.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0617: Possible Mast Head Cover

This artefact was discovered by J. Jerromes at Southampton Wharf. It was recovered from material dredged by the *City of Chichester* in Licence Area 395/1, to the east of the Isle of Wight.

This artefact is comprised of wood and metal. One side of the artefact is made of wood (see image below) in a conical shape. The other side is a metal plate approximately 18cm in diameter (pictured above). There are nine holes in the metal plate; three of the holes have complete brass screws, while six of the holes have broken off screws. There are also three brass round head screws in the wood top.

Although the origin of this artefact is uncertain, it is possible that this is a cap of some kind, perhaps a mast cover or a cover set into a wooden deck. Comparatively, based on the shape, size and material composition, this could be a broken base from something. There are no diagnostic features which help identify its origin. However, brass screws do not rust, so there is a strong possibility this objects was used in a marine environment.

This artefact appears to be an isolated find. It is not known how this artefact came to be on the seabed, but it is possible that it was lost off a passing ship. A wide range of material has been recovered from Licence Area 395/1 in the past, and it is thought that the area was used for the disposal of material after the Second World War. It is possible that this artefact also had a terrestrial context and was disposed of at this time.



Wooden side of object

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



LTM_0618: Steel Spindle with two Brass Cogs

Paul Stonehouse discovered this artefact at Greenwich Wharf, in material dredged by the *City of Westminster* from Licence Area 430, approximately 25km east of Southwold, Suffolk.

This artefact comprises a corroded steel spindle with two brass cogs attached. The steel spindle measures approximately 14cm in length by 1cm in width. The brass cogs are approximately 3cm in diameter and are spaced approximately 1cm apart. There is a small brass emblem, measuring less than 1cm across, immediately adjacent to one of the cogs. There appears to be a metal band encircling the spindle, approximately 3cm from one of the cogs. The spindle shaft appears to have several different diameters, and along one end there appears to be a retaining ring.

A finds specialist at Wessex Archaeology, Bob Davis, was shown images of LTM_0618. Although he could not establish the object's origins, Bob noted that the teeth around each of the plates appear more decorative than functional, suggesting that the item may have been displayed. Other possibilities for the object include a mechanism for clockwork or mechanism for a small machine.

It is not known how this artefact came to be on the seabed in Licence Area 430, however it appears to be an isolated find. However, any future finds in the area should continue to be reported through the Protocol, as they could provide future context for LTM_0618.



Close-up of emblem beside cog

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Suffolk
- The Local Government Archaeology Officer for Suffolk
- The Finds Liaison Officer (Portable Antiquities Scheme) for London



LTM_0619: Metal Object

Paul Stonehouse discovered this object at Greenwich Wharf. It was recovered from material dredged by the *City of Westminster* in Licence Area 458, roughly 40km south of East Sussex.

This enigmatic metal find measures approximately 16cm in length. It is hollow, and both ends of the artefact appear to be damaged (see inset).

When the object was reported, it was initially identified as part of a machine gun. Photographs of the find were shown to Jonathan Ferguson, Curator of Firearms at the Royal Armouries. He agreed that the find did look similar to a flash-hider or muzzle brake, however he was relatively sure that it was not actually one.

Photographs of the find were then shown to Bob Davis, a Finds Specialist at Wessex Archaeology. After careful examination of the images, Bob concurred with Jonathan Ferguson. The exposed broken end (pictured right) suggests that the inside of the vented section is threaded. This means that the core liner was screwed into position. It also seems it was originally longer.

As the inside liner does not seem corroded, it most likely is not made of iron, but rather copper or brass. This material composition would suggest a possible use in hydraulics.

This is likely to be an isolated find, however, any future finds in the area should continue to be reported through the Protocol, as they could provide further context for LTM_0619.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for East Sussex
- The Local Government Archaeology Officer for East Sussex
- The Finds Liaison Officer (Portable Antiquities Scheme) for London



End of the object (right side of
top photo)



End of the object (left side of
top photo)



LTM_0620: Aircraft Material

This artefact was discovered by Paul Stonehouse at Tarmac's Greenwich Wharf (Murphy's Wharf). It was recovered from material dredged by the *City of Westminster* in Licence Area 509/3, approximately 27km south-east of the Essex coast.

This metal find measures approximately 22cm in length. When the find was reported, it was initially thought to be related to a machine gun, and photographs of the find were shown to Jonathan Ferguson, Curator of Firearms at the Royal Armouries. He was fairly certain that the material was not from a firearm or an artillery part, however he suggested it could be related to aviation.

Photographs of the find were then shown to Ewen Cameron, Curator of the Royal Air Force Museum Stafford. He agreed that the material was definitely aircraft related and suggested that this piece was possibly German.

An isolated find such as this artefact is unlikely to indicate a discrete aircraft wreck site on the seabed. When an aircraft hits the surface of the water, it can break up over some distance, spreading the wreckage across a wide area of the seafloor.

Although this appears to be an isolated find, dredger and wharf staff should remain extra vigilant for discoveries of further material, as any additional finds of aircraft material could provide more information about an aircraft that may have crashed in this area.



Mark on the artefact

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Essex
- The Local Government Archaeology Officer for Essex
- The Finds Liaison Officer (Portable Antiquities Scheme) for London



LTM_0621: Hammer Head

Bradley Troubridge discovered this hammer head at Greenwich Wharf. It was recovered from material dredged from a number of areas, so its provenance is not known.

This object measures approximately 21cm in length by 6cm in width.

In agreement with the initial report, Bob Davis, a finds specialist at Wessex Archaeology, identified LTM_0621 as a hammer head. More specifically, it has been identified as a 'Point-Peen' metal hammer head, which could have been used to work metal.

The hammer head has one circular flat end and one slightly rounded pointy end. The circular flat end could have been used for riveting, and with the rounded pointy end most likely used to puncture a hole through a piece of hot metal. The head also has the remains of a wooden handle with a metal wedge still attached (see image to the right), which would have been driven through the top of a wooden handle to ensure a secure fit. This item most likely dates to the 19th or 20th century.



Remains of the wooden handle

In the case of LTM_0621, it appears to be an isolated find. However, any future finds in the area should continue to be reported through the Protocol, as they could provide further context for the hammer head.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for London
- The Local Government Archaeology Officer for London
- The Finds Liaison Officer (Portable Antiquities Scheme) for London



LTM_0622: Metal Object

This object was discovered by J. Jerromes at Burnley Wharf. It was recovered from material dredged by the *City of Chichester* in Licence Area 395/1, off the east coast of the Isle of Wight.

This object comprises an aluminium bracket and plastic disk. The bracket is 48mm by 38mm, and the width of the composite item is 66mm. The disk is 93mm in diameter, with an offset hole of 2cm in diameter. There are two screw holes with corresponding screws in each section of the bracket, used to secure it to the disk.

The images were shown to Bob Davis, a finds specialist at Wessex Archaeology. Although there is little to definitively identify LTM_0622, based on the mix of plastic, which is a good electrical conductor, and aluminium, which is lightweight, the object could be from an aircraft.

A significant amount of aircraft material has been recovered from Licence Area 395, suggesting the presence of a downed aircraft either within or in the vicinity of the Licence Area. As such, any future finds in the area should continue to be reported through the Protocol, as they could provide further context for LTM_0622.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire





LTM_0623: Brass Door Lock

This object was discovered by Aaron Harrigan at Burnley Wharf. It was recovered from material dredged by the *City of Chichester* in Licence Area 395/1, off the east coast of the Isle of Wight.

This object comprises a brass lock and a door faceplate. There is a maker's mark on the topside of the lock, but it is illegible. The lock measures 12.7cm (5 inches) by 7.62 cm (3 inches), and the faceplate measures 4 and three quarter inches high accompanied by four countersunk fixing holes (see image below).

In agreeance with the initial report, Bob Davis, a finds specialist at Wessex Archaeology, identified LTM_0623 as a brass Mortise lock. It consists of a brass face plate with bottom latch and upper mortise lock. The use of mortise locks dwindled after the advent of bored cylindrical locks in the early twentieth-century. As such, this lock most likely dates to the nineteenth-century.

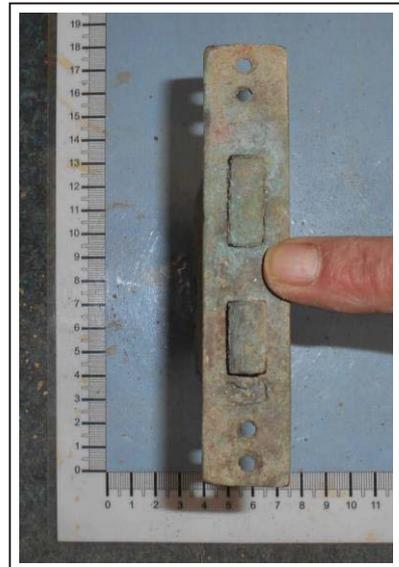
The key hole would suggest that the latch was at the bottom if the key was used in the normal position. Based on the material composition (e.g. brass), this lock was probably fitted to a normal sized door either on the interior of a vessel or from a door on land.

In terms of design, a curving back to the case is different, and suggests some effort in design. It is easier to make the case square.

In the case of LTM_0623, it appears to be an isolated find. However, any future finds in the area should be reported through the Protocol, as they could provide further context for lock.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire





LTM_0624: Small Shell Base

This object was discovered by J. Jerromes at Southampton Wharf. It was recovered from material dredged by the *City of Chichester* in Licence Area 395/1, off the east coast of the Isle of Wight.

This object comprises a small shell base marked 11½ LB VAD and dated 1939. The shell base is 6.5cm in diameter.

This is a Second World War shell casing base, however specific reference to this particular casing could not be found in common literature. The VAD stands for 'Vickers Armstrong Developments', however the other markings are somewhat unusual. The 11½ LB markings could mean 11.5 pounds or the size of the calibre and the filling or manufacturing factory. The 6.5cm diameter would suggest a 2.5 inch round, and there are other marks which may relate to quality control in the factory. Based on the fairly medium size of the cap, this was possibly shot from a 2.5 pounder weapon.

The two holes in the base are also unusual. The central hole is where the primer sat. This small percussion cap ignited the charge inside the case. The other hole has a rebate and is possible a filling hole.

This is likely to be an isolated find; however, any future finds in the area should continue to be reported through the Protocol, as they could provide further context for LTM_0624.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire



Underside of shell casing



LTM_0626: Coat Hook

This object was discovered by Aaron Harrigan at Southampton Wharf. It was recovered from material dredged by the *City of Chichester* in Licence Area 395/1, off the east coast of the Isle of Wight.

This object comprises a large brass coat hanger, measuring 7 inches by 3.5 inches. The object is made in two separate sections and pressed together. The back plate would be fixed by four countersunk screw holes (see lower right image).

This type of brass coat hook was typical of the early 20th century, and was mass produced. This object could be found in domestic and military environments.

LTM_0627 is likely to be an isolated find; however, a number of other brass objects have been recorded in Licence Area 395/1 over the years (e.g. UMA_0120 reported in 2007-2008, LTM_0623 reported 2014-2015). Any future finds in the area should continue to be reported through the Protocol, as they could provide further context for the object.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire





Tarmac_0627: Bullet

This bullet was discovered by David Ling at the Swansea wharf on the 14th September 2015. The find was recovered in material dredged by the *Arco Dart* from Licence Area 472, some 24km west of Weston-super-Mare.

This bullet was recovered following dredging operations in the Bristol Channel. It was found in debris (as shown in the photograph above) washed onto the wharf while the *Arco Dart* was ballasting.

The bullet measures approximately 33mm long and 6mm in diameter. Photographs of the find were sent to Jonathan Ferguson, the Curator of Firearms at the Royal Armouries Museum, Leeds. On review of the photographs, Mr Ferguson stated that based on its general profile and diameter, the find may represent a possible standard .303 calibre bullet. A bullet of this type would also display an angular groove around the cylindrical part of the bullet, although it was unclear as to whether this groove was present or not based on the photographs provided.

The .303 calibre bullet, known as the .303 British, is a rimmed rifle cartridge which was first put into service in Britain in 1888 as a black-powder round for the Lee-Metford rifle. Black powder, also known as gunpowder, is the earliest known chemical explosive used widely in ordnance until the introduction of smokeless powder in the late 19th century. The .303 was the standard British and Commonwealth military cartridge from 1889 until the 1950s, with some 26 variations. The .303 British also has a history of civilian use for sporting activities such as hunting, with the cartridges still readily available today. Due to the variety of calibres of bullets in this length range, for the identification of this bullet to be conclusively confirmed, precise measurements would need to be taken using a micrometer or Vernier caliper.

It is not known how this bullet came to be on the seabed. It may be a relic of a military or sporting activity, fired from a rifle on a vessel or washed into the sea from ashore. At present, it is considered to represent an isolated find. Nonetheless, wharf and vessel staff are encouraged to remain vigilant and report all discoveries as and when they occur. A high concentration of seemingly isolated finds have the potential to unveil areas of archaeological sensitivity on the seabed which could in turn indicate the presence of a wreck or an aircraft crash site.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Bristol
- The Local Government Archaeology Officer for Bristol
- The Finds Liaison Officer (Portable Antiquities Scheme) Bristol



CEMEX_0631: Bone

This bone fragment was discovered by Andrew Lingham at the Northfleet wharf on the 30th August 2015. It was recovered in material dredged by the *Sand Falcon* from Licence Area 510/1 in the Thames region.

This bone fragment has been subject to a high level of abrasion on the seabed. As a result, some of the distinguishing marks which enable identification to a particular bone type or species are in a poor condition. The bone was recorded by wharf staff to measure some 80mm by 100mm.

Photographs of the fragment were sent to Richard Sabin, the Principal Curator and Collections Manager of the Vertebrate Zoology Group at the Natural History Museum, London. Although noting the difficulties in identifying bone from a photograph rather than an in-hand examination, Richard stated that given the flattened-cross section of the fragment, it may represent a fragment of a scapula. A scapula is also commonly known as a shoulder blade, and is the bone that connects the upper arm bone with the collar bone. If this is the case, the species is unknown based on observations made to date.

Alternatively, Richard conjectured that the bone may represent the nasal bone of a cetacean. Cetacean is a term used to refer to a wide variety of fully aquatic marine mammals, such as whales and dolphins. Over the course of evolution, the nasal bone in cetaceans moved high onto the forehead of these mammals with their nasal opening, otherwise known as the blowhole, located on top of their head, above their eyes. As a result, their nasal passages extend vertically through the skull connected to large air spaces. When cetacean mammals reach the water surface to breathe, they expel air through the blowhole before breathing in through the nasal opening. The extended nasal passages ensures that the air is warmed and moistened before it reaches the lungs, keeping heat loss to a minimum and stopping the windpipe from drying out (Harris 2010:31).

Animal bone can enter the archaeological record offshore in a number of ways. Animal bones may have been washed in from land, or may represent the remains of an animal which died on an area of the seafloor at a time when it was exposed as dry land, prior to its submersion. Alternatively, it could derive from an animal carried on-board a vessel and may have come to be on the seabed having been discarded overboard, or as part of a wider wreck assemblage. If the identification of this bone as representing the nasal bone of a cetacean is correct, then it is likely that this fragment does not relate to past human activity at all, but rather represents the remains of an aquatic mammal which died in its natural environment. Based on information available to date, this find is considered to represent an isolated find.

Reference

Harris, T. (ed.) (2010) *Mammal Anatomy: An illustrated Guide*. New York: Marshall Cavendish

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The National Record of the Historic Environment
- The Historic Environment Record for Kent



Tarmac_0633: Metal Finds

These finds were found at Bedhampton Wharf by G. Cooper and J. Lutman on the 1st September 2015. They were found in material dredged by the *City of Chichester* from Area 395/1, approximately 10km southwest of Selsey.

These three metal artefacts were found in aggregate dredged from the Isle of Wight dredging region. Photographs of these objects were sent to Paul Craddock, a member of the Conservation and Scientific Research team at the British Museum.

The first object (photographed above) is cylindrical in shape, with an approximate diameter of 100mm and a depth of about 20-30mm. The distinctive rusty orange colouring of the object indicates an iron component in its material makeup. The find shows no identifying marks or obvious method of affixation. It is currently unidentified but may represent a weight.



The other two objects are very similar in size and shape. They are rectangular in plan and measure approximately 250mm long and 60mm wide. Both objects are relatively flat but with irregular edges. The ends of the bars protrude from the body of the objects. No distinctive markings were observed.

Mr Craddock identified the rectangular objects as electrolytic copper bars dating to around the 1890s. The process of electrolysis is a technique whereby ionic substances are broken down into simpler substances using electricity. This process was used on copper to enhance its qualities, resulting in a purer copper which in turn, had better electrical conductive properties. Bars of electrolytic copper were re-used to make various electrical components, such as wire. Mr Craddock suggested that these bars may have been manufactured in Swansea, which was a centre of copper manufacture during the Industrial Revolution and often referred to as a "Copperopolis". It is not currently known how these bars came to be on the seabed. They may have been carried by a vessel as a form of cargo, and either lost overboard or represent part of a wider shipwreck assemblage. Alternatively, they may have derived from a terrestrial context. Since the Protocol was first implemented, a great variety of finds have been recovered from the Isle of Wight dredging region, with a large quantity of assorted artefacts recovered from a spread of rubble to the west of Nab Tower. Although the artefacts discussed above are currently regarded as being isolated finds, further finds should be reported in order to aid the identification of meaningful patterns in the distribution of finds in this area.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for the Isle of Wight
- The Local Government Archaeology Officer for the Isle of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) Hampshire



Tarmac_0634: Metal Finds

These finds were discovered at the Shoreham Wharf. The Licence Area from which they were recovered is unknown, although it is thought that they might have derived from Area 395 or 396 to the east of the Isle of Wight.

This collection of eleven objects includes two metal spoons, two brass plaques (right) and seven round shot (above). It is thought that they were recovered from the Isle of Wight region.

The first brass plaque (top right) is approximately 19cm long and 3 cm wide. It is stamped in raised lettering with the word "SEAMEN" surrounded by a border. There are two holes at either end of the plaque for securing it. The second plaque is about 180mm long and 80mm wide with the words "CAUTION GAS. FLASK TO BE KEPT COOL AND NOT EXPOSED TO ANY FORM OF HEAT. NO OIL OR GREASE TO BE USED ON ANY PART LIABLE TO COME IN CONTACT WITH GAS." Indicating that it originated from a container for gas. Both finds may have derived from a vessel.



Six of the round shot are approximately the same size (approx. 30mm in diameter). They are in varying condition, with some looking intact whilst others are degraded. It is not possible to tell whether this is through use or due to corrosion. There are two possibilities for their use due to their size, depending on their age. They could be ammunition for a Base, the smallest of the standard cannon of the 16th and 17th century. Alternatively they could represent the smaller projectiles fired when using canister or grapeshot from a larger cannon. The seventh cannonball is much larger and is approximately 180mm in diameter. It was possibly from a 42 pounder cannon or carronade.

The first spoon measures approximately 220mm long with a bowl width of 60mm. There are maker marks on the rear which are too corroded to be legible. The second spoon is about 180mm long and 50mm wide. On the reverse it is stamped with *SSP & C Co Ltd NS 1883*, indicating that it was made of nickel silver (NS) in the year 1883 by the Sheffield Nickel and Silver Plating Co. Ltd, a company active between 1877-1898.

Since the Protocol was first implemented, a vast array of finds have been recovered from this region. With so many finds potentially deriving from shipwreck sites, it is imperative that further finds continue to be reported through the Protocol so that artefact patterns of distribution can be assessed.

Information about this discovery has been forwarded to:

- Historic England
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Record of the Historic Environment
- The Historic Environment Record for Isla of Wight
- The Local Government Archaeology Officer for Isla of Wight
- The Finds Liaison Officer (Portable Antiquities Scheme) Hampshire

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