

2006-2007



Protocol
for reporting finds of archaeological interest

Annual Report to BMAPA 2006-2007



ENGLISH HERITAGE



November 2007

Prepared by

Wessex Archaeology 

British Marine Aggregates Producers Association
and
English Heritage

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Project Background

In April 2003, the British Marine Aggregates Producers Association (BMAPA) and English Heritage (EH) jointly published Marine Aggregate Dredging and the Historic Environment: Guidance Note. The Guidance Note sets out the character and importance of the marine historic environment and describes best practice in dealing with archaeological matters in the course of planning marine aggregate dredging in English marine waters. It includes details of measures to mitigate the effect of marine aggregate dredging on the historic environment, including the implementation of protocols to report and deal with finds made in the course of dredging.

Protocols for reporting archaeological finds emerged as a mitigation option as it became apparent that watching-briefs by archaeologists, either on board dredging vessels or at wharves, were likely to prove ineffective because of the scale and character of the dredging process. Protocols are intended to provide a 'safety net' for reporting finds that occur once dredging is in progress, and are in addition to measures to avoid areas of archaeological sensitivity through desk-based assessment and field evaluation.

Such protocols have formed part of the mitigation strategy set out in several

Environmental Statements for individual dredging licence applications. However, BMAPA recognised that it would be more consistent and effective to introduce a single, unifying protocol and in August 2005 BMAPA and EH introduced a protocol applicable to all BMAPA members, covering all wharves, vessels and production licence areas.

The Protocol was prepared by Wessex Archaeology (WA) in consultation with BMAPA, EH and other interested parties. BMAPA member companies have voluntarily committed to implementing the Protocol across all existing operations. It is hoped that non-BMAPA companies will also adopt the Protocol voluntarily. Furthermore, the reporting requirements defined by the protocol are now being reflected in the formal conditions attached to modern dredging permissions, including renewals. This makes compliance with the protocol a formal requirement of the dredging permission.

Protocol

The Protocol provides for finds being made by members of staff employed by aggregate dredging companies on the seabed, on board dredging vessels, and at wharves.

Munitions or suspected munitions must first be reported through the procedures outlined in the Guidance Note 'Dealing with munitions in marine aggregates' (June 2006) to ensure

staff safety and to ensure compliance with legislative requirements. Following the identification and where necessary disposal of suspected items by the appropriate personnel (military EOD), a written record (including photographs where available) may be submitted through the protocol.

Under the Protocol, staff report to a local 'Site Champion' on the vessel or at the wharf and the Site Champion compiles a preliminary report. The Site Champion passes the report on to the 'Nominated Contact', a single identified person within each company (see table overleaf).

The role of the Nominated Contact within each company is to inform EH of the find as soon as possible, and to pass on the reported details, preferably within two working days of receiving information from the Site Champion. The Nominated Contact is also required to advise other dredgers operating in the same area to keep a particular watch for finds and, if the seabed position of the find is reasonably certain, to implement a Temporary Exclusion Zone (TEZ) until archaeological advice has been obtained. TEZs may only be revoked if

it can be concluded that no important wreck or other feature is present. TEZs may be formalised as a longer-term Archaeological Exclusion Zone (AEZ) if the presence of a wreck or feature is confirmed or if no conclusion can be drawn and the company does not wish to resolve the situation by further investigation.

EH's role is, on receiving the report, to advise the Nominated Contact of the actions to be taken. EH will also liaise with various agencies, institutions and individuals with responsibilities and interests in respect of the marine historic environment and finds from the sea, and pass details of the find on to the National Monuments Record (NMR) and appropriate local Sites and Monuments Record/Historic Environment Record (SMR/HER).

WA is currently carrying out these aspects of EH's role as part of an Implementation Service commissioned and supported by BMAPA. The Implementation Service has now completed its second year of operation and it is the year October 2006 to September 2007 which is the subject of this annual report.

BMAPA Company	Nominated Contact	Position
Britannia Aggregates Ltd	Richard Fifield	Marine Resources Manager
DEME Building Materials Ltd	Frank Rimell	Resident Manager
Hanson Aggregates Marine Ltd	Robert Langman	Resources Manager
Kendall Bros (Portsmouth) Ltd	Richard Kendall	
Northwood (Fareham) Ltd (Lafarge Aggregates Ltd)	Tom Hills (Malcolm Whittle)	Operations Manager
Norwest Sand & Ballast Ltd	Nick Brown	General Manager
CEMEX UK Marine	Graham Singleton	Marine Resource Manager
United Marine Aggregates Ltd	Andrew Bellamy	Resources Manager
Volker Dredging Ltd	Will Drake	Marine Resources Manager

Implementation Service

The Implementation Service encompasses elements of EH's role in the Protocol that are concerned with recording and passing on information about reported finds, and limited decision-making regarding archaeological actions in respect of reports that can clearly be addressed without contention.

The Implementation Service does not cover decision-making where a higher level of curatorial involvement is required (i.e. where reports result in TEZs that are likely to warrant further investigation and/or formalisation as an AEZ).

At the core of the Implementation Service is a web-based reporting system. Nominated Contacts have secure access to web pages on which they can record details of finds reported by Site Champions and through which they can receive advice.

Each report received through the web-pages is assessed by WA staff. Contentious discoveries are forwarded promptly to EH for further curatorial assessment. Reports considered non-contentious are dealt with by WA staff.

Scanned drawings, digital photographs and other files may be uploaded to the website for the purposes of interpretation. In certain circumstances WA may request that the find is made available for closer inspection but, in most cases, recovered finds are held by the companies.

Advice is sought from accredited specialists within and external to WA regarding both interpretation and any additional works required to stabilise, conserve or record recovered finds. This advice is passed to the Nominated Contacts along with guidance on resolving issues of ownership and disposing of finds.

The provision to carry out any additional work falls outside the terms of the Implementation Service although the companies may make arrangements with WA to carry out further work at an additional cost. Advice on sources of funding can be provided by WA.

WA is also responsible for disseminating the information reported through the Implementation Service to the NMR and local SMR/HER and other interested parties such as:

- EH Maritime Team
- The Crown Estate
- EH regional offices
- Local Government Archaeological Officers
- Portable Antiquities Scheme (PAS) Finds Liaison Officers
- the Receiver of Wreck
- the Ministry of Defence

Through the web pages WA can generate a report compliant with the Monument Inventory Data Standard, a content standard for heritage data sets that defines what sort of information should be recorded. This report can then be forwarded via email to the above parties.

Feedback is sent to the wharves and vessels in the form of an A4 poster providing an archaeological and historical context for the discovery and outlining its importance.

If permission is given by the Nominated Contact details of the finds are also made publicly available through WA's web pages.

Further information about the Protocol and the Implementation Service may be found at:

- <http://www.wessexarch.co.uk/projects/marine/bmapa>



Awareness programme training

Raising Awareness

During 2007 WA undertook a programme of education and awareness raising to accompany the operation of the Protocol. The activities are ongoing at the time of writing and are an extension to the Awareness Programme that ran in 2006. The Awareness Extension Programme began in May 2007 and will end in February 2008. Funded through the Aggregates Levy Sustainability Fund (ALSF) the programme comprises:

- visits to marine aggregate wharves, including sites in Belgium and the Netherlands
- visits to geophysical and environmental survey companies that service the industry
- a workshop for Nominated Contacts, Site Champions and other interested parties including archaeology professionals which took place on 25th September 2007 in Salisbury
- two newsletters to publicise the service and highlight recent finds, one scheduled for Autumn 2007 which has been published and the other due in the Spring of 2008
- a DVD to support previously supplied remote learning materials

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

Specific information was provided to staff on:

- the nature of the marine historic environment
- identifying typical marine finds
- the responsibilities of staff under the Protocol
- handling and storing marine finds
- basic finds recording

The workshop held in Salisbury on 25th September 2007 focused on the relevance of finds, their recognition, conservation, recording and storage. Particular emphasis was placed on the questions commonly raised by aggregate company staff. The workshop demonstrated the importance of finds

reported from industry, and the contribution such reports are making to our understanding of the past. It also provided an opportunity for discussion and the exchange of experience and views.

During the course of the Extension to the Awareness Programme WA are taking part in a number of seminars to introduce the Protocol to a wider audience and to illustrate the importance of the artefacts reported through the Protocol. Those attended so far include:

- Marine ALSF Conference (London, 05/10/2007)
- CEDA Conference (Rotterdam, 08/11/2007)

WA also submitted an article on the mammoth tusk discovered in February 2006 to Quaternary Research Letters.

In response to requests from industry, the first issue of a newsletter was prepared in the spring of 2007 under the Awareness Programme and distributed to inform staff about finds and activities at other wharves/vessels around the country. As discussed above a further Autumn 2007 newsletter has been produced under the Extension to the Awareness Programme, which will also fund a Spring 2008 edition.

The Extension will also:

- generate additional education and outreach material to reinforce the 2007-08 Programme through additional guidance on fossils and concretions, assistance with conservation and an interface with the industry munitions guidance
- reach new members of staff or those not visited previously, at wharves both in England and elsewhere where aggregate from English licences are landed, from CEFAS, the BGS and the survey industry
- fill gaps identified during the course of the previous programme, particularly in relation to finds storage, conservation and liaison with local museums or other interested bodies local to the wharves



Pre-Protocol: Colt .45 from a US Air Force World War II Bomber

Reports: Pre-Protocol

In October 2006 WA were informed of one discovery that had occurred before the implementation of the Protocol. Aircraft remains identified as a WWII US Air Force bomber were discovered in 2001 by Hanson's staff within material dredged from a licence area off the coast of Suffolk. As possible

human remains were also discovered the find was reported to the MOD Joint Casualty and Compassionate Centre and the US Joint POW/MIA Accounting Command.

This find was written up in the style of a wharf report and entered into the project archive.



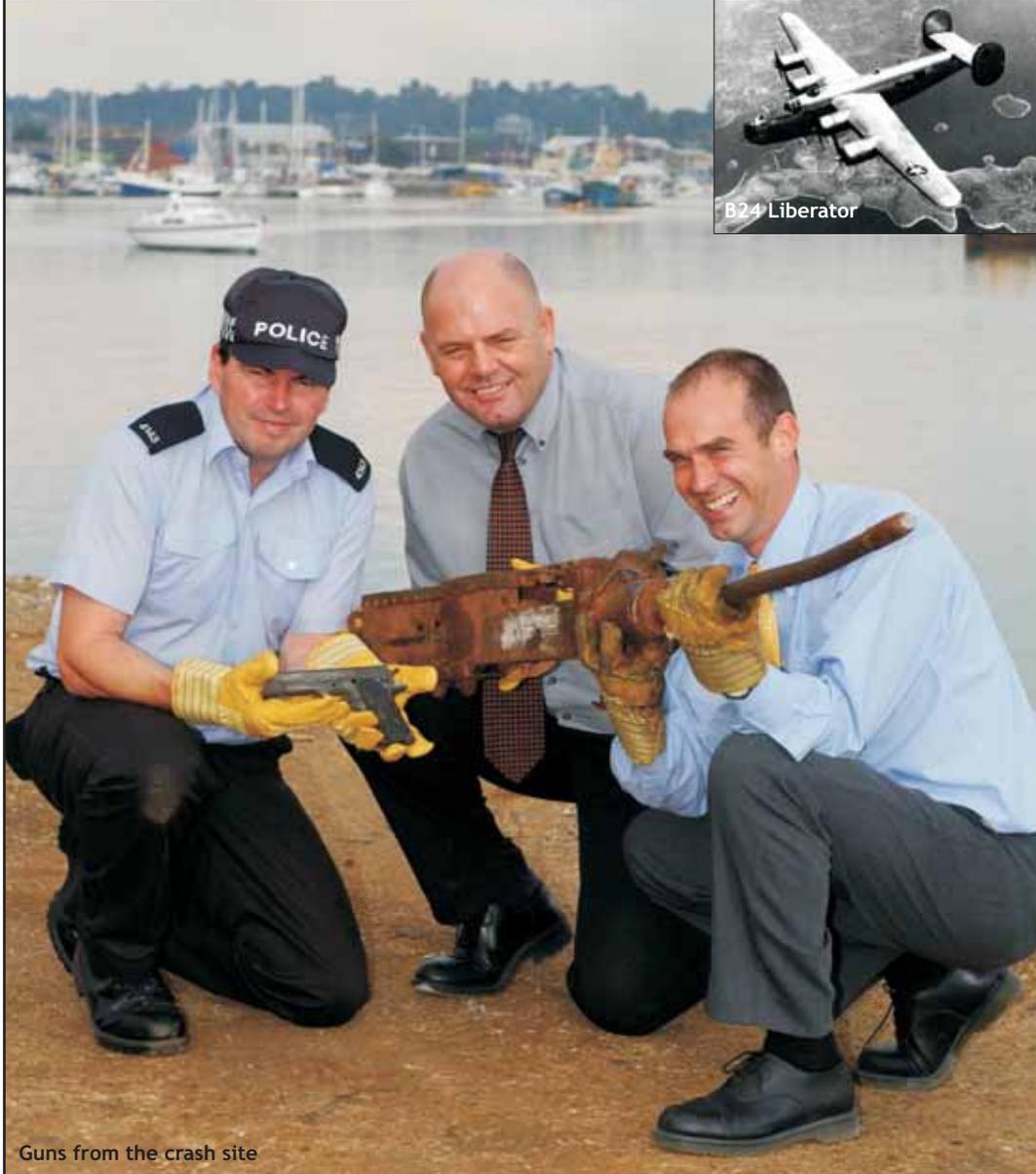
B26 Marauder



B25 Mitchell



B24 Liberator



Guns from the crash site

HANSON MARINE, SOUTHAMPTON
PICTURES BY DAN CHARITY
REMAINS FROM UNITED STATES BOMBER WHICH WAS DISCOVERED BY A
COLT 45 AND MACHINE GUN HELD BY, LEFT TO RIGHT, POLICE CONSTABLE IAN
MCLEOD, M.O.D. DETECTIVE CONSTABLE DEC McMAHON AND HANSON'S IAN
SELBY

**Solent News &
Photo Agency**



Multibeam bathymetry from the crash site



B17 Flying Fortress

Case study: US Air Force World War II Bomber

Case Study: US Air Force World War II Bomber

In September 2001 many pieces of aircraft wreckage were recovered by Hanson's staff over a period of several days from material that had been dredged from a licence area off the coast of Suffolk, approximately 18km east of Lowestoft. Objects were recovered both on board the dredging vessel and at the wharf where the cargo was processed.

The location of the discovery was confirmed by magnetometer survey and an exclusion zone was put in place. The area is dominated by large sandwaves orientated E-W and standing up to 3m high with a wavelength of approx 100m. The suspected site of the aircraft appears to be up to 50m long, although the bathymetric anomaly merges with a sandwaves and so it is not possible to get an accurate measurement. The site is orientated NW-SE, at an angle to the dominant sediment flow in the area. The bathymetry data was collected using a GeoSwath system and gridded at 5m cell size by the survey company and therefore it is not possible to determine any detailed structure from the data.

The recovered remains comprise a variety of metal components, three guns, pieces of fabric and possible human remains. The metal components include numerous fragments of airframe, pedals, instruments, dials, switches, a possible peto tube and various catches, but do not appear to include any engine parts. The pieces of fabric comprise fragments of parachutes, a flying helmet and uniforms. The three guns are currently in the possession of the MoD police and include a Colt .45 automatic pistol, a Browning machine gun and two flat steel plates forming the sides of another Browning machine gun.

The Colt .45, designed by Browning and manufactured by Colt, was selected as the official sidearm of the armed forces of the U.S. in March 1911 and was standard issue until 1985. The M2 50 calibre Browning machine gun was designed as an aircraft machine gun just after World War I and has been used as both a vehicle weapon and on aircraft by the U.S. from the 1920s to the present day. Both the Colt .45 and the M2 were used widely by the U.S. armed forces during World War II and it seems likely, therefore, that this discovery represents the remains of a crashed U.S. aircraft that was operating in Europe during the 1940s.

The mounting attachments on the machine gun suggest that this would have been used on a bomber rather than a fighter plane which is more likely to have had integrated armaments in the wings. The main U.S. bomber command in Britain during World War II was the Eighth Air Force, organised in England in early 1942, operating from a number of bases in the East of England, including several in Suffolk and Norfolk.

The most famous of the bombers deployed in Europe by the U.S. was the B17 Flying Fortress. However, as it is not currently possible to identify the aircraft type, it is feasible that the finds may originate from any of the American bombers deployed during World War II, such as the B24 Liberator, the B25 Mitchell or the B26 Marauder. It is also possible that the discovery may represent a transport plane carrying troops and/or equipment to the U.S. bomber command in England.

Crashed aircraft are important to archaeologists because in many cases they offer a unique form of evidence for the historic development of flight. If surviving examples of a particular type of craft do exist they are often only the later models of a particular type or they have been heavily refurbished. Moreover, all crashed military aircraft are protected by law under the Protection of Military Remains Act 1986.



Selection of finds reported through the Protocol during 2006-2007

Reports: Protocol

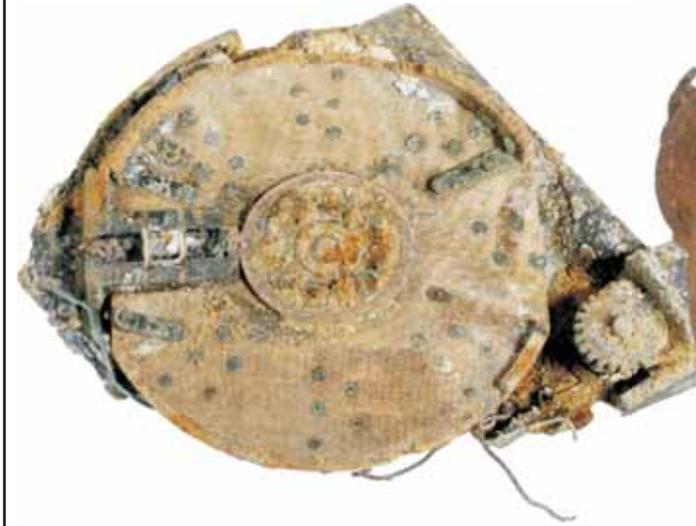
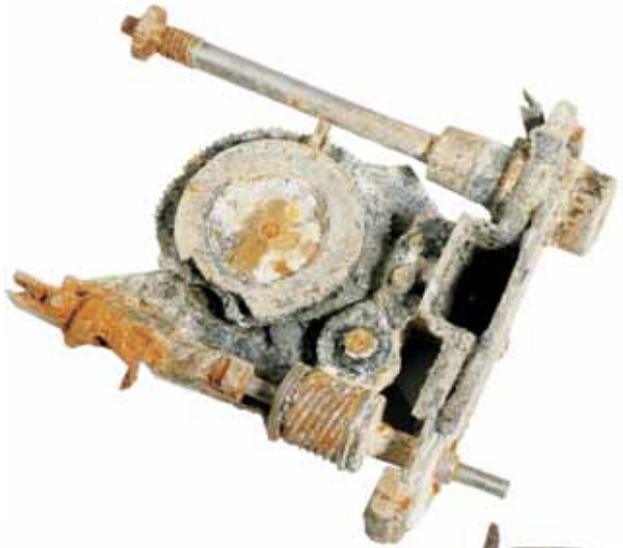
During the second year of operation WA received 30 reports through the Implementation Service, up from 19 reported during the first year. These 30 reports encompassed approximately 350 separate finds (see table below).

Further details of each discovery are included in the wharf reports appended to this report.

One find, UMA_0083, was considered contentious, as human remains were recovered with a large amount of aircraft wreckage, and it was reported as such to EH. As finds UMA_0080 and UMA_0081 also consisted of aircraft wreckage and came from the same area all three finds were reported to the Ministry of Defence Joint Casualty and Compassionate Centre (JCCC) at RAF Innsorth.

Date Reported	Report ID	Licence Area	Wharf / Vessel	Description	No. of finds
11/10/2006	Britannia_0066	451	Brett Northfleet	A cannon ball, 2 artillery shells and a boat hook	4
20/10/2006	UMA_0067	IOW (area unknown)	Bedhampton	Metal monogram	1
20/10/2006	UMA_0068	395/1	Burnley	Cannon ball	1
14/11/2006	UMA_0073	408	Arco Avon	Ammonite fossil	1
24/11/2006	UMA_0076	296	City of Westminster	Animal bone	1
27/11/2006	UMA_0077	127	Bedhampton	Cannon ball, pottery fragment and 2 bricks	4
08/02/2007	UMA_0080	430	Erith	Aircraft wreckage	4
08/02/2007	UMA_0081	430	Erith	Aircraft wreckage, including machine gun magazine and ammunition *	c. 20
08/02/2007	UMA_0082	340	Bedhampton	2 cannon balls	2
08/02/2007	UMA_0083	430	Ridham	Aircraft wreckage and human bone and a sounding lead	288
02/03/2007	Hanson_0085	436/202	N/A	Possible wreck discovered by Emu Ltd in geophysical data	0
03/05/2007	Hanson_0088	408	Arco Humber	Prehistoric dolphin fossil	1
08/05/2007	Hanson_0089	473 East	Humber	Half an artillery shell *	1
09/05/2007	UMA_0090	340	Bedhampton	Ship's timber	1
09/05/2007	UMA_0091	430	Ridham	Cannon ball	1
09/05/2007	UMA_0092	296	Ridham	Metal object	1
11/05/2007	CEMEX_0093	102/251	Northfleet	Metal object and animal bone	2
31/07/2007	CEMEX_0095	175/1	Sand Swan	Ship's timbers	2
01/08/2007	UMA_0096	122/2	Bedhampton	Silver spoon and fork and brass plate	3
01/08/2007	UMA_0097	127	Burnley	Metal object	1
01/08/2007	UMA_0098	IOW (area unknown)	Burnley	Pieces of concrete, one with ceramic tiles attached	2
08/08/2007	UMA_0099	122/3	Bedhampton	Metal object	1
08/08/2007	UMA_0100	430	Ridham	Cannon ball	1
08/08/2007	UMA_0101	430	Ridham	Cannon ball	1
15/08/2007	UMA_0102	430	Ridham	Cannon ball	1
24/08/2007	CEMEX_0104	251	Dover	Worked timber and 2 pieces of coal	3
24/08/2007	Hanson_0105	328A	Arco Avon	Shell timer mechanism *	1
19/09/2007	UMA_0107	296	Ridham	Mammoth tooth	1
24/09/2007	UMA_0109	Unknown	Ridham	Ship's fastening - copper-based nail/bolt	1
28/09/2007	UMA_0110	122/3	Bedhampton	Brass fuse box cover, possible light fitting and possible compass ring	3
					c. 354

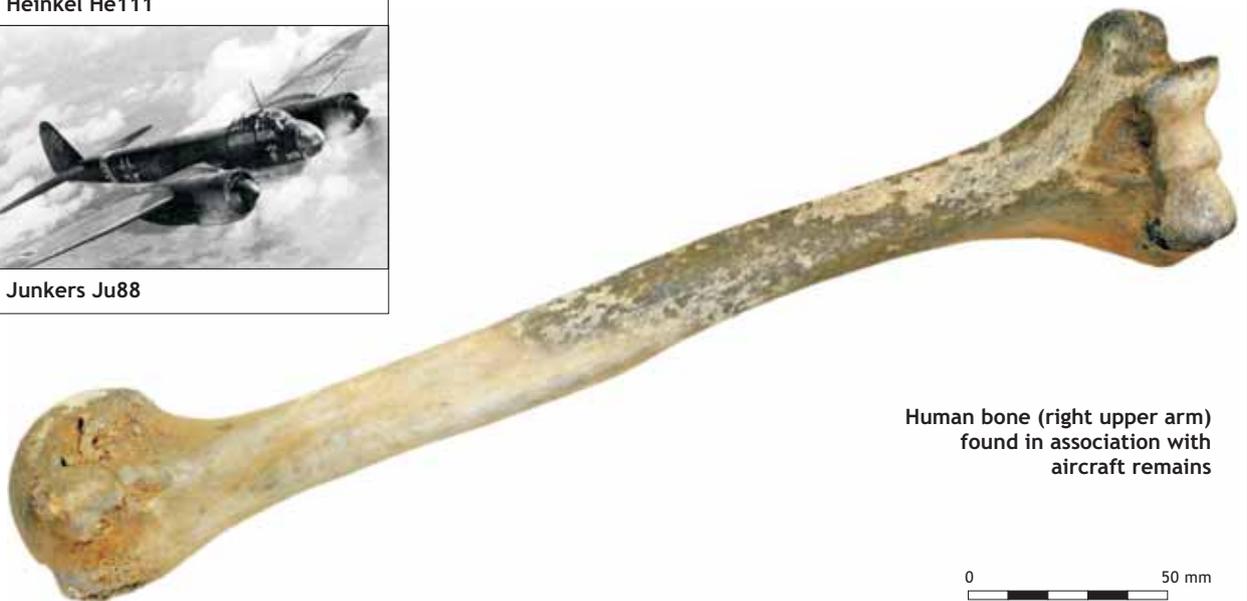
* Items of munition or suspected munition must first be reported through the protocols established in the Munitions Guidance Note.



Heinkel He111



Junkers Ju88



Human bone (right upper arm)
found in association with
aircraft remains



Case Study: World War II Luftwaffe Fighter

On 31st January 2007 a cargo of aggregate from Area 430 received at UMA's Ridham Wharf was found to contain many pieces of aircraft wreckage (UMA_0083). A human bone was found in the same load the following day and identified from a photograph by WA's osteoarchaeologist as being from a human right upper arm. WA immediately informed EH and the Ministry of Defence Joint Casualty and Compassionate Centre (JCCC) of the find.

All foreign and domestic military aircraft crash sites in the UK and its territorial waters are controlled sites under the Protection of Military Remains Act 1986. It is an offence to disturb any items at such sites without a licence from the MOD. Accordingly, UMA and CEMEX instigated a Temporary Exclusion Zone (TEZ) around the area where the finds had been dredged from. WA were then made aware of two other finds of aircraft wreckage made a few weeks earlier from the same licence area (UMA_0080 and UMA_0081) and the TEZ was widened to encompass the area where dredging had taken place on the days those finds had been recovered.

WA took possession of the UMA_0083 aircraft wreckage and bone (which had been reported to the police and released by the coroner as being of archaeological origin rather than from a crime scene) and worked to identify the type of aircraft the fragments came from. Photographs were taken of 87 potentially diagnostic pieces and these were sent to various organisations. This initial investigation revealed that the parts were definitely German. John Romain of the Aircraft Restoration Company advised WA that the various alloy pieces riveted together are of classic German design. German text and part numbers were visible on some pieces including part of a gyrocompass and an oxygen regulator, identified with the help of staff at the RAF Museum in Hendon. In addition, one of the UMA_0081 finds was identified as the magazine from a German MG15 machine gun, which still contained 29 rounds of ammunition, the latest date-stamped July 1940. On finding the magazine and ammunition, they were immediately reported to the Metropolitan Police. The Metropolitan Police called in the decommissioning consultant (EOD) to deal with the items. Having completed these appropriate actions outlined in the Munitions Guidance Note, the finds were subsequently reported through the protocol. Putting together all the information gleaned as to which German aircraft carried that type of gun and was fitted with the particular type of gyrocompass and other parts found; WA discovered that the aircraft was possibly a Heinkel He 111, but was most probably a Junkers Ju 88. It was probably lost in the second half of August 1940, during the Battle of Britain.

In order to reduce the size of the area closed to dredging, then standing at approximately half the licence area, WA assessed the most recent sidescan sonar data collected over the area. Aircraft are very hard to identify in such data as they generally consist of thin aluminium air frames with some larger, more solid items such as engines. WA identified all features thought possibly to be related to the aircraft crash site and wreckage. Correlating the locations of these features with the trackplots of the dredgers that had recovered the finds enabled WA to reduce the area closed to dredging to half the area originally covered by the TEZ.

To reduce this area still further, WA carried out a high-resolution geophysical survey in August 2007 specifically to try and locate the aircraft crash site. In addition to higher-resolution sidescan sonar data than that previously available, magnetometer data was also acquired. Processing and interpretation of this data in October 2007 enabled WA to limit the likely location of the aircraft crash site to three small areas, totalling just 2.4% of the original TEZ. These areas will be formalised as Archaeological Exclusion Zones and the rest of the TEZ re-opened to dredging following a Managed Dredging Strategy. Dredging in specific lanes will enable any future finds to be more accurately positioned as they will have originated from a much restricted area.

WA are still awaiting a response from the German Embassy as to what to do with the human remains but it is hoped they can be buried in a war cemetery. Research is continuing into the specific identity of the aircraft. This includes WA examining the German loss records for the late summer of 1940 as part of an EH commissioned and ALSF funded Scoping Study into the importance of aircraft crash sites at sea.

Specialists

During the year 2006 to 2007 specialist advice was sought from a number of experts in order to obtain the best possible interpretation and to offer the most appropriate advice to Nominated Contacts regarding conservation and disposal of the finds.

Details of the assistance given by specialists in relation to specific finds are included in the wharf reports appended to this report.

Expert	Specialism	Institution/Organisation
Alan Jeffreys	Military	Department of Exhibits and Firearms, Imperial War Museum
Paul Baggaley	Geophysics	Geophysics Manager, Wessex Archaeology
Alistair Barclay	Fossils	Senior Post-Excavation Manager (Specialist Services), Wessex Archaeology
Andy Curren	Ice age mammals	Collections Manager (Palaeontology), Natural History Museum
Andy Simpson	Military aircraft	Curator, Aircraft and Exhibits Department, RAF Museum
Antony Firth	Commercial maritime archaeology	Section Head (Coastal and Marine), Wessex Archaeology
Bjorn de Wilde	Geology and Pleistocene mammals (North Sea)	Dutch Study Group on Pleistocene Mammals
Bob Davis	Archaeological artefacts	Project Officer, Wessex Archaeology
Cathie Chisham	Sediments and palaeobotany	Environmental Archaeologist, Wessex Archaeology
Cristina Serra	Geophysics	Coastal and Marine Archaeologist/Marine Geophysicist, Wessex Archaeology
Darren Cowd	Military aircraft	RAF Museum
Graham Scott	Ship archaeology and underwater fieldwork	Senior Archaeologist (Coastal and Marine), Wessex Archaeology
Gustav Milne	London Archaeology and Maritime Archaeology	Senior Lecturer, University College London
Ian Jones	Ammunition and explosives	Explosives Officer, Metropolitan Police
Ian Panter	Conservation of marine finds	Principal Conservator, York Archaeological Trust
Jack Russell	Environmental archaeology	Archaeologist (Coastal and Marine), Wessex Archaeology
Jackie McKinley	Human bone	Osteoarchaeologist, Wessex Archaeology
Jan Glimmerveen	Bone and flint (North Sea)	North Sea Project, CERPOLEX/Mammothus
Jenni Chambers	Prehistoric flint	Project Officer, National Ice Age Network
Jens Auer	Ship archaeology, submerged aircraft remains and underwater fieldwork	Senior Archaeologist (Coastal and Marine), formerly of Wessex Archaeology now a Research Assistant at the University of Southern Denmark
Jessica Grimm	Animal bone	Animal Bone Specialist, Wessex Archaeology
John Romain	Warbirds and classic aircraft	Managing Director and Chief Engineer, the Aircraft Restoration Company
Jörn Schuster	Archaeological artefacts	Project Manager, Wessex Archaeology
Klaas Post	Fossil marine mammals	Natural History Museum of Rotterdam
Lorraine Mepham	Finds specialist, ceramics	Finds & Archives Manager, Wessex Archaeology
Matt Leivers	Prehistoric flint	Finds Specialist, Wessex Archaeology
Mike Trevarthan	Prehistoric flint	Project Officer, Wessex Archaeology
Nigel Nayling	Maritime archaeology and dendrochronology	Department of Archaeology and Anthropology, University of Wales at Lampeter
Phil Andrews	Post medieval	Project Manager, Wessex Archaeology
Phil MacGrath	Artillery	Curator of Artillery, Royal Armouries
Richard Noyce	Royal Naval artefacts	Curator of Artefacts, Royal Naval Museum
Richard Sabin	Cetacean remains	Curator, Mammal Curation Group, Natural History Museum
Stephanie Arnott	Marine Geophysics	Marine Geophysicist, Wessex Archaeology
Steve Allen	Archaeological timber	Wood Technologist, York Archaeological Trust
Steve Webster	Ship archaeology and underwater fieldwork	Senior Project Manager (Coastal and Marine), Wessex Archaeology
Stuart Leather	Submerged Prehistoric Landscapes	Project Manager, Wessex Archaeology
Vince Holyoak	Military aircraft	Senior Policy Officer, Rural & Environmental, English Heritage

Liaison and Accessibility

Details of each discovery have been sent to:

- Virginia Dellino-Musgrave, EH Maritime Team;
- Mark Russell, BMAPA;
- Mike Cowling, The Crown Estate;
- David Hilton, NMR.

Details of discoveries regarded as wreck under the Merchant Shipping Act 1995 have been forwarded to the Receiver of Wreck:

- Britannia_0066
- UMA_0067
- UMA_0068
- UMA_0077
- UMA_0080
- UMA_0081
- UMA_0082
- UMA_0083
- Hanson_0089
- UMA_0090
- UMA_0091
- UMA_0092
- CEMEX_0093
- CEMEX_0095
- UMA_0096
- UMA_0097
- UMA_0098
- UMA_0099
- UMA_0100
- UMA_0101
- UMA_0102
- CEMEX_0104
- Hanson_0105
- UMA_0109
- UMA_0110

Details of discoveries that may relate to military wrecks or aircraft have been forwarded to the Ministry of Defence:

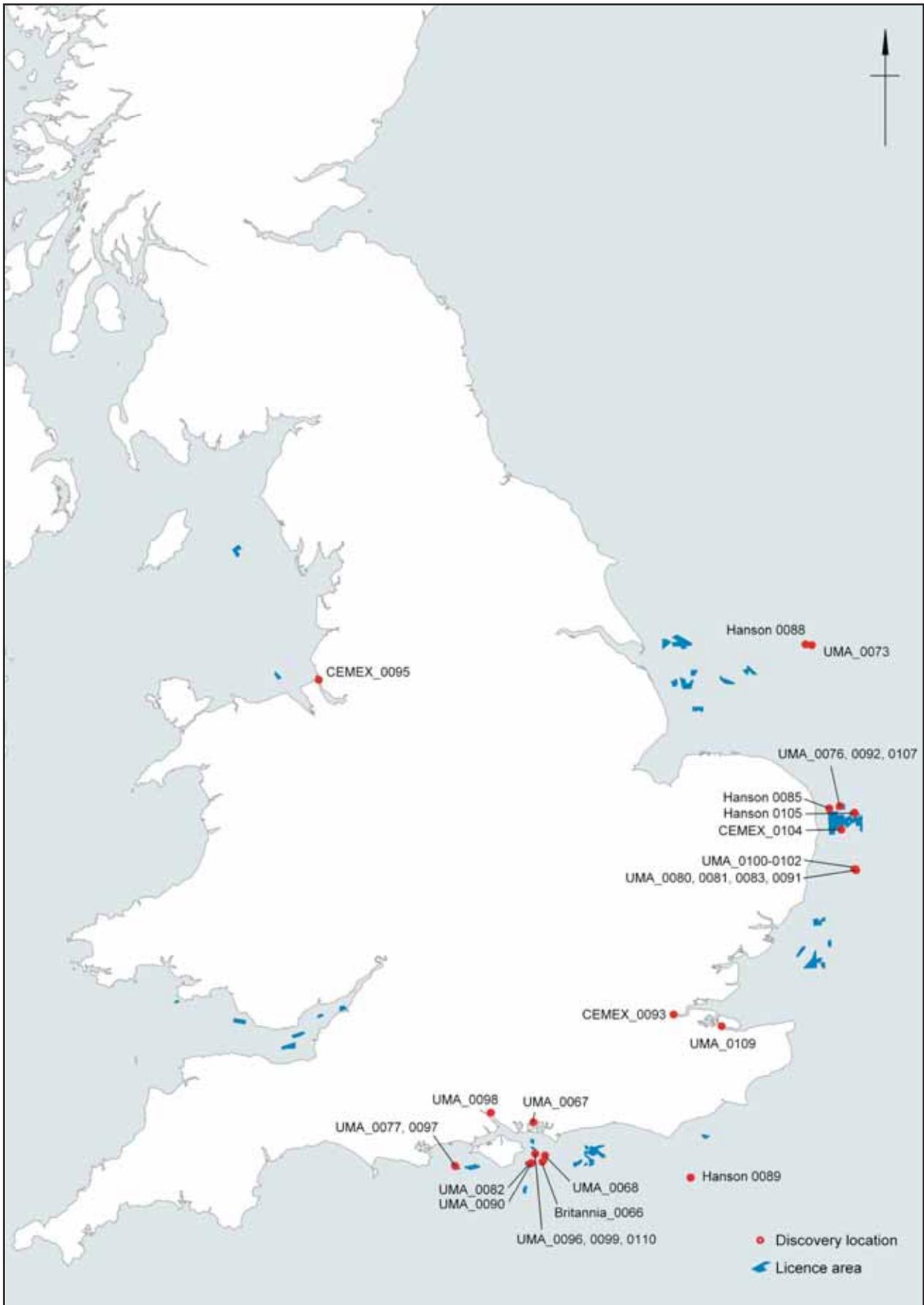
- Pre-protocol: US Air Force World War II bomber
- UMA_0080
- UMA_0081
- UMA_0083

Details of discoveries that are possibly related to uncharted wreck sites have been forwarded to the United Kingdom Hydrographic Office:

- Hanson_0085

Data has also been sent to the appropriate PAS Finds Liaison Officers and to the Local Government Archaeology Officers and SMR/HER in the county off which the discovery was made.

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



Location of discoveries 2006-2007

Discussion

Importance

During the year 2006-2007 over 350 individual artefacts have been reported through the Implementation Service. A number of 'pre-Protocol' finds have also been brought to the attention of WA staff during visits to wharves as part of the ALSF funded Awareness Programme and the subsequent Extension to this programme.

The map opposite illustrates the distribution of finds reported through the Implementation Service during the year 2006-2007. Reporting and mapping these discoveries will enable the identification of the distribution of types of finds that will assist archaeologists in the identification of archaeologically sensitive areas of the seabed.

All reported discoveries will contribute to increased understanding of the historic marine environment around England and the distribution of archaeological artefacts in English waters. Reporting finds under the Protocol contributes to discharging licence conditions and other legal obligations as well as constituting best practice.

Key Issues

A number of issues have been raised over the past year that WA has begun to address in order to improve the usability and efficiency of the Implementation Service.

Delay in Reporting and Responding

As remarked in the 2005-2006 Annual Report, there is sometimes a significant delay between the discovery of an artefact, the compilation of the preliminary report by the Site Champion and the uploading of the online report by the Nominated Contact.

As an instance, two finds of multiple pieces of aircraft wreckage (including a machine gun magazine complete with ammunition) were made at the same wharf a week apart. These finds were not reported and dredging

continued. Subsequently, two weeks later a cargo dredged from the same licence area was delivered to a different wharf and staff immediately reported that hundreds of pieces of wreckage and human remains were present in the load. This resulted in half the licence area being covered by a Temporary Exclusion Zone (TEZ). WA was only made aware of the two earlier finds a week after the third discovery. This suggests that some wharf staff may be unsure as to what finds should be reported and that further guidance or training may be necessary.

The timescale for reporting finds, as set out in the Protocol, is that staff should report a find to their Site Champion immediately on discovery so that measures may be taken to safeguard the find and begin to establish the potential for further finds to be encountered. This is particularly important given the legal requirements of the Protection of Military Remains Act, where rapid identification of a site is necessary to ensure further disturbance is avoided. The Site Champion should forward a preliminary report to the Nominated Contact the same day so that operational decisions such as informing other dredgers operating in the area and the establishment of a TEZ can be made promptly. The Nominated Contact should upload the Initial Report through the Implementation Service within two working days of receiving the preliminary report from the Site Champion.

To minimise any impact on operations the Protocol recommends that WA should issue an initial response to the Nominated Contact within two working days of receiving the Initial Report. There has often been a delay in providing a formal response (primarily owing to a lack of staff availability) although all Initial Responses are scrutinised on receipt to ensure that potentially contentious finds are dealt with as soon as possible.

It is important that finds are reported to WA as soon as possible as this may be critical to safeguarding archaeologically important finds and minimising disruption to dredging operations.

Initial Reports

The quality of the information provided in the initial reports uploaded to the Implementation Service is somewhat variable. Most reports are filled out clearly and photographs of the finds are attached. However, date and position information are sometimes not completed. If these are unknown then this should be explicitly stated.

On-line Reporting and Administration System

Now that the Implementation Service has been running for two years, experience of using the online system has suggested a number of changes. Owing to the success of the Protocol and the Implementation Service the volume of finds reported is far higher than originally anticipated when the system was designed. The system would benefit from some streamlining to make it easier and quicker to use by all parties concerned. This would improve the rate of response by WA to uploaded finds.

Newsletter

In response to requests from some wharf staff for regular updates of the finds being reported through the Implementation Service; and in order to facilitate their understanding of what is and is not considered of archaeological importance, Wessex Archaeology produced a printed newsletter in the autumn of 2006. This was funded by EH through the ALSF and was well received by industry staff. Funding has been made available for two further issues of the newsletter.

The “Dredged Up” newsletter is now being produced twice a year to provide wharf and vessel staff with feedback on the finds reported through the Protocol over the previous six months. This informs staff of the finds made at other wharfs and vessels and also gives them an opportunity to see that their own finds are publicised to others. In addition, it is a useful way to inform industry staff of updates to the Protocol and Awareness Programme. It is hoped that funding can be found to continue this beyond the life of the Extension to the Awareness Programme.

The Newsletter is also proving a useful tool to publicise the Protocol and the importance of the finds made and reported through the Implementation Service. Copies are distributed by EH to a variety of other organisations and individuals in addition to the industry staff already involved.

Munitions

Other than cannon balls, munitions should only be reported through the Implementation Service once the appropriate identification and where necessary disposal actions have been completed under the protocols defined in the munitions Guidance Note. Where there may be doubt whether a find constitutes a munition or not, it must always be treated as potentially dangerous, and reported through the munitions Guidance Note accordingly.

Where munitions are encountered, records should be kept of their discovery and where available as a result of information provided to/by the appropriate personnel (normally military EOD staff) the identification of the item and any measurements or photographs should be included in an initial report lodged through the Implementation Service.

Aircraft

Several finds of aircraft wreckage were made during 2005-2006 and one of the most interesting finds from 2006-2007 was the German aircraft wreckage from Area 430. Several subsequent finds made may also be parts of aircraft wreckage. This has highlighted again the potential for aircraft remains to be recovered during dredging operations. Finds should be reported to the Site Champion immediately following their discovery to enable the rapid identification of a site. If the find comprises part of an aircraft crash site, it is essential to ensure further disturbance to the site is avoided. Discoveries of aircraft wreckage are always potentially contentious as they may contain human remains and military aircraft crash sites are automatically protected under the Protection of Military Remains Act 1986.

Where a site has been identified as present it is required to be protected by a Temporary Exclusion Zone (TEZ) until it can be located accurately, where upon the TEZ can be replaced by a smaller Archaeological Exclusion Zone (AEZ). This is important as, in addition to the possible presence of human remains on the site, unexploded munitions can also pose a hazard to dredging operations. The use of Exclusion Zones prevents dredging in the vicinity and allows the importance and sensitivity of discoveries to be assessed. However, protecting crash sites in this way can have serious consequences for the dredging industry, as it can put large areas of the seabed that are otherwise suitable for dredging out of bounds.

The seabed off the south and east coasts of England contains one of the highest concentrations of crashed aircraft in the world. It is particularly rich in military aircraft, as a result of the critical role that air power played in the Second World War, and the location of the area on the route from German controlled airfields on the continent to targets within the UK. As an example between 1939 and 1945, 935 aircraft were lost off the Sussex coast alone. However, the locations of most crash sites are unknown.

As a result of the aircraft finds reported through the Implementation Service, English Heritage has commissioned WA to conduct a scoping study to identify gaps in the knowledge and understanding of aircraft crash sites at sea. The results of this study will enable this rich archaeological and historical resource to be managed more effectively, reducing the adverse impact of dredging on the sites and vice versa. The study is funded through the Aggregate Levy Sustainability Fund. The project website is located at <http://blogs.wessexarch.co.uk/aircraftcrashsitesatsea/>

Nab Tower Finds

It has recently come to WA's attention that a relatively large number of finds are discovered from licence areas to the west of Nab Tower, to the east of the Isle of Wight.

Andrew Bellamy, UMA's Nominated Contact has explained that this area, covering Licence Areas 122/2 and 122/3 and extending for several square kilometres is covered by large quantities of demolition rubble, possibly originating from bomb damaged buildings during the Second World War that was cleared and dumped at sea. It is impossible for wharves receiving cargoes from these areas to report every find as they receive approximately three skip loads of rubble a week. At present, finds that the Site Champion believes may be of archaeological interest are reported to the Nominated Contact and hence to Wessex Archaeology. From an archaeological point of view this is a less than ideal way of dealing with the issue as find selection is not based on archaeological knowledge. In addition, the context from which the finds are recovered means that domestic items which might otherwise be thought to be associated with a wreck site are likely to be items which were present in buildings and subsequently dumped in the sea.

Discussions are currently taking place with UMA as to the best way of dealing with these finds and investigations are ongoing into the source of the rubble, which appears not to be Portsmouth according to information held by the City Museum and Records Office.

Conclusion

The large increase in the number of finds being reported in 2006-2007 illustrates the success of the Protocol and the Implementation Service and the commitment of staff in the BMAPA companies to promoting a responsible attitude to the marine historic environment. Additionally the benefits of the Awareness programme are becoming apparent as this year has seen the first report from a survey contractor, based on geophysical data, as well as an increase in the number of reports originating on a vessel as opposed to at the wharf. Operational issues are still a factor in that at busy wharves it is often difficult to be sure as to which load a find originates from, however this is partially overcome by the enthusiasm and vigilance of the wharf staff.

One of the objectives of the Implementation Service is to develop a database of finds over the years and look for trends and clusters so that a view can be taken as to the implications of such material for future licence management, renewal or new applications in the region. It is still too early to draw conclusions based on the data so far

gathered, however interesting trends are developing. WA is seeing clusters of prehistoric material from licences on the east coast and an interesting accumulation of cannon balls are being reported from Area 430. These include one showing impact damage. The calibre and location of these is consistent with their use during either of two sea battles which took place during the Anglo Dutch Wars of the 17th Century. More details are given in the wharf reports.

The large quantity of demolition rubble in licence areas off the east coast of the Isle of Wight, possibly dumped as a result of bomb damage during the Second World War is proving a challenge. An appropriate management scheme is under discussion and investigation into when and where the material was supposed to have been dumped and where it has ended up is ongoing. However, even domestic rubble from on land from the 1940's can contain material that although out of context is still archaeologically interesting. This together with the work currently underway on aircraft crash sites at sea highlights the unusual lines of enquiry that can result from finds reported through the Protocol.

Appendix
Wharf reports for discoveries 2006-2007



BMAPA/EH

Protocol for Reporting Finds of Archaeological Interest



Britannia_0066_a: Boat Hook and Cannon Ball

These items were discovered along with 2 hand grenades at Britannia's Robin's Wharf on 10th September 2006 by Alan Hook. They were recovered from material dredged from licence area 451 off the east coast of the Isle of Wight.

Cannonballs, or round shot, are one of the earliest forms of projectiles fired from cannons. Round shot was made in early times from dressed stone and from iron by the late 15th century until the late 18th century.

Finds of cannonballs on the seabed may relate either to the location of a battle (such shot will often exhibit signs of firing or impact damage) or to the location of a shipwreck. The durability of metallic elements compared to wood and other organics means that older shipwrecks, or shipwrecks in high energy environments, are often represented solely by cannon and concreted shot on the seabed. Even reports of individual cannonballs can therefore tell us much about warfare at sea or potentially pinpoint the location of a currently unidentified shipwreck.

Boat hooks have probably been around in various forms since the first boats. They are known to have occurred in their present form from the 16th century to the present day and as such are very difficult to date. The boat hook found here is probably a modern example.

Metal artefacts from marine contexts are very unstable once they are removed from the seabed and require professional conservation if they are to survive long term. In the short term the most effective treatment is to keep them submerged in fresh water.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estates
- The Receiver of Wreck
- The National Monuments Record
- 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 Kent



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Protocol for Reporting Finds of Archaeological Interest



Britannia_0066_a: Royal Mortar Shells

These items were discovered along with a cannon ball and a boat hook at Britannia's Robin's Wharf on 10th September 2006 by Alan Hook. They were recovered from material dredged from licence area 451 off the east coast of the Isle of Wight.

These objects were initially identified as possible French hand grenades by staff at the wharf. Following industry guidance on munitions, decommissioning contractors were called in who examined them and certified them as free from explosive content. The find was then reported through the Protocol.

Photographs were sent to Phil Magrath, the Curator of Artillery of the Royal Armouries at Fort Nelson in Fareham. However, rather than grenades the items were identified as probable British shells dating from the 18th to possibly the early 19th century. One carries the arrow mark of the Board of Ordnance. This government organisation issued ordnance and warlike stores to both the Army and the Navy and was abolished in 1855 although the arrow mark continued to be used for a time by the War Office, which took over the duties of the Board.

A diameter of the shells of just over 5 inches was ascertained from the photographs provided by Britannia. This suggests that they may have been bombs for a Royal Mortar, a muzzle-loading indirect fire weapon. Royal Mortars were recorded as having a 5½" bore (c.14cm), with a general length of 1' 4¼" (c.51cm) and a weight of approximately 1cwt (c.51kg) (Wilkinson-Latham 1973:86). Royal Mortars were introduced in Europe c.1720.

As with the cannon ball, finding these shells on the seabed may relate either to the location of a battle or to the location of a shipwreck. Early incarnations of mortars were large and heavy and could not be easily transported. However, by the 18th century, mortars had been invented which were transportable and could be used in naval warfare. The durability of metallic elements compared to wood and other organic materials means that older shipwrecks, or shipwrecks in high energy environments, are often represented solely by cannon and concreted shot on the seabed. As such, even reports of single shells can tell us much about warfare at sea and potentially pinpointing the location of a hitherto unknown wreck.

References:

Wilkinson-Latham, R, 1973, *British Artillery on Land and Sea 1790-1820*. Newton Abbott: David and Charles

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estates
- The Receiver of Wreck
- The National Monuments Record
- The Historic Environment Record for the Isle of Wight
- The Local Government Archaeology Officer for the Isle of Wight



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Protocol for Reporting Finds of Archaeological Interest



UMA_0067_a: Metal Monogram

This find of a metal monogram was made by Darren Taylor at UMA's Bedhampton wharf on an unknown date. The find was made within material that had been dredged from off the Isle of Wight by the vessel *City of Chichester*.

The monogram consists of an intertwined capital G and R. From the photograph it appears to be about 5 inches across. The metal looks as though it could be brass. The object appears to be broken at the top, suggesting a motif of some kind has been broken off. It dates from the post medieval or modern periods.

Monograms (or ciphers) of the name of the reigning monarch were found on many objects on ships including cannons, other weapons and such mundane objects as buckets. This object could therefore indicate a wreck in the area. Wessex Archaeology sent the photograph of this particular monogram to the National Maritime Museum, the Imperial War Museum and the Royal Naval Museum. Staff at these organisations were unable to identify the origin of the object. Alan Jeffreys of the Imperial War Museum checked the ciphers of all the British King Georges (I to VI) but none of them matched. However, there were no standard ciphers for much of the period making it difficult to identify. A possibility is that the object could be a cipher of one of the European monarchs, such as George I of Greece.

A different option is that the monogram may be the initials of the name of a vessel upon which it was present as a decorative object, such as a name board. It may also be the initials of a company that manufactured an item that this object was broken from. The origin and purpose of this item remain a mystery!

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- 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



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Protocol for Reporting Finds of Archaeological Interest



UMA_0068_a: Cannon Ball

This cannon ball was found at UMA's Burnley Wharf by Mervin Smith. It was found in material dredged on 6th September 2006 from licence area 395/1 off the east coast of the Isle of Wight.

Cannon balls, or round shot, are one of the earliest forms of projectiles fired from cannons. Round shot was made in early times from dressed stone and from iron by the late 15th century until the late 18th century.

Finds of cannon balls on the seabed may relate either to the location of a battle (such shot will often exhibit signs of firing or impact damage) or to the location of a shipwreck. The durability of metallic elements compared to wood and other organics means that older shipwrecks, or shipwrecks in high energy environments, are often represented solely by cannon and concreted shot on the seabed. Even reports of individual cannonballs can therefore tell us much about warfare at sea or potentially pinpoint the location of a currently unidentified shipwreck.

Metal artefacts from marine contexts are very unstable once they are removed from the seabed and require professional conservation if they are to survive long term. In the short term the most effective treatment is to keep them submerged in fresh water.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- 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

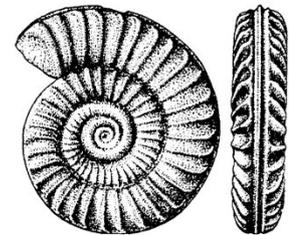


Hanson_0073_a: Ammonite Fossil

Carved stone reported by Hanson Aggregates Marine on 14/11/2006. The stone was found on board the dredger Arco Avon by the Bosun P. Roberts in material dredged from licence area 408 (The Coal Pit) 50 miles NE of the wash.

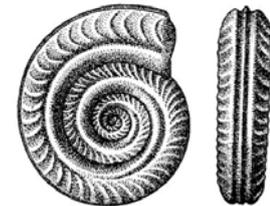
Following examination of photographs by staff at Wessex Archaeology it seems likely that this fragment of stone is part of an Ammonite fossil.

There are no visible suture patterns although the surface appears to be heavily eroded. The double ridge along the internal face of the stone indicates a possible Lower Liassic 'Arnioceras semicostatum' or an Upper Liassic 'Hildoceras bifrons'. The location of the discovery, in area 408 off the Humber coast, concurs with the discovery of these fossil types in the Whitby/Robin Hood's Bay area of Yorkshire.



Arnioceras semicostatum

The Liassic geological period refers to the Lower Jurassic (approximately 176-208 million years ago). Therefore, the age of the stone precludes its value as an archaeological artefact. Archaeology involves the study of past human life and culture and in the UK the earliest evidence for human occupation dates to 700,000 years ago, at the earliest.



Hildoceras bifrons

The find is also of minimal geological value as the heavy erosion suggests that it has been subject to extensive movement within the gravels. This indicates that it is a derived artefact and not in situ.

However, it is important that any discoveries which appear to be of an unusual shape or fabric continue to be reported through the Protocol as any one of these may prove to be an important archaeological discovery. Just as many people collect fossils today people in the past often re-used fossils, as jewellery for example, and an artefact millions of years old may, therefore, still contribute to the study of humans.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate



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Protocol for Reporting Finds of Archaeological Interest



UMA_0076_a: Animal Bone

Discovered on an unknown date by Paul Harrington on board the *City of Westminster* during dredging operations in Area 296 off Great Yarmouth.

Jessica Grimm, Animal Bone Specialist at Wessex Archaeology, examined the above photographs of the bone. She suggested that it is the end of a long bone from a large mammal, possibly an animal bigger than a horse. It is not possible to estimate the date of a bone from a photograph and it may be prehistoric or recent in origin.

Animals were carried on board ships as cargo and as provisions so animal bone from sheep, horses, cattle and pigs, for example, may end up on the seabed as a result of a shipwreck or through simple waste disposal. Animal remains may also end up in marine contexts having been washed from terrestrial deposits by rivers or eroded from cliffs or beaches. Alternatively they may date to a time when the seabed was dry land.

During an ice age more of the world's water is incorporated within ice sheets on land and sea level drops exposing areas of the seabed. When the ice melts at the end of an ice age the water floods back into the seas and oceans and the sea level rises again, inundating wide expanses of dry land.

At the height of the last ice age c. 18,000 years ago the North Sea would have been dry land. Sea level did not reach its current level until c. 5,000 years ago. It is possible, therefore, that this piece of bone may have originated from a prehistoric landscape which now lies submerged on the seabed.

As it has not been possible to identify the species it is difficult to determine how this piece of bone ended up on the seabed. The discovery of further material from this area, however, will aid identification and potentially help us to identify an unknown archaeological site on the seabed.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The National Monuments Record
- The Historic Environment Record for Norfolk
- The Local Government Archaeology Officer for Norfolk
- The Finds Liaison Officer (Portable Antiquities Scheme) for Norfolk



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Protocol for Reporting Finds of Archaeological Interest



UMA_0077_a: Cannon Ball, Pottery and 2 Bricks

These finds were made by Darren Taylor at UMA's Bedhampton Quay. They were found in material dredged from Area 127 off the west coast of the Isle of Wight on 10th November 2006.

Although found in the same aggregate load the cannon ball is not associated with the other items. Round shot was made in early times from dressed stone and from iron by the late 15th century until the late 18th century. Finds of cannon balls can indicate the location of a battle or a previously unrecorded shipwreck.

The piece of pottery has been examined by Lorraine Mephram, Finds Manager at Wessex Archaeology and identified as part of an earthenware casserole dish dating from the 19th or 20th centuries. Antony Firth (Coastal and Marine Section Head at Wessex Archaeology) believes that the bricks are unlikely to have come from a ship. They have two distinct layers, with a heat resistant coating bonded to them and may possibly be from a kiln. It is believed likely that the pottery fragment and the bricks are from rubble originating from Portsmouth which was dumped in the sea after the Second World War when the city was rebuilt.

The presence of the Naval Dockyard made Portsmouth a prime target for Second World War German bombers. Barely a street escaped the bombs and by the end of the war the city was devastated. Between July 1940 and July 1944 there were 67 major bombing raids on Portsmouth and 930 civilians and numerous service personnel were killed in the city, with many more injured (Portsmouth City Council, 2006). The war is an important part of Britain's social history in the 20th century. Finds from this period illustrate how the war affected the lives of everyone.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- 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



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Protocol for Reporting Finds of Archaeological Interest

UMA_0080_a, UMA_0081_a & UMA_0083_a: German Aircraft Wreckage

These three sets of finds were made in material dredged from Area 430, approximately 29km east of Southwold on the Suffolk coast. The UMA_0080_a and UMA_0081_a finds were both made at Erith by Barry Gould and had been dredged on the 6th and 16th of January 2007 by the *City of London*. The UMA_0083_a finds were made by Jo O'Brien at Ridham in material that had been dredged by the same vessel on 30th January 2007.



UMA_0080: aircraft fragments



UMA_0081: German MG 15 machine gun magazine



UMA_0083: human right humerus – upper arm



UMA_0083: Lku 4 gyro compass with German text visible

- UMA_0080 consists of 4 pieces of aircraft wreckage.
- UMA_0081 consists of various pieces of aircraft wreckage including a saddle magazine. The magazine and ammunition were immediately reported to the Metropolitan police who called in the decommissioning consultant EOD, in accordance with the Munitions Guidance Note. The magazine was identified by Ian Jones from the EOD as belonging to a German MG 15 machine gun.
- UMA_0083 consists of almost 300 fragments of an aircraft. They were discovered initially on 31st January 2007, when the load was received at the wharf. More pieces were discovered over the several days it took to process the load and a human bone was discovered the following day.



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Protocol for Reporting Finds of Archaeological Interest

UMA_0080_a, UMA_0081_a & UMA_0083_a: German Aircraft Wreckage

The bone was identified from a photograph as being from a human right upper arm by the osteoarchaeologist at Wessex Archaeology (WA). At this point, WA informed English Heritage and the Ministry of Defence Joint Casualty and Compassionate Centre (JCCC) at RAF Innsworth of the find. Further contact has been had with the JCCC and they have been kept updated by WA as the investigation has progressed. The JCCC also informed the German Embassy of the finds and WA are awaiting their instructions. As required by the Protocol, the Receiver of Wreck was informed of all three finds.

Two other finds of aircraft parts in Area 430 were reported through the Protocol last summer. These consisted of:

- UMA_0061. A small number of various metal aircraft parts dredged on 13th July 2006 in the northeast of Area 430, in the vicinity of where the new finds were made. Despite a part number and a BOSHH symbol it has not been possible to identify the type of aircraft they came from or determine a position for the material, but increased vigilance was recommended.
- UMA_0062. Dredged on 20th June 2006 approximately 1km northwest of UMA_0061 this find consisted of a rudder pedal and a lamp. The pedal was subsequently identified by Andy Simpson at the RAF Museum in Hendon to have belonged to an American aircraft, either a P-51 Mustang fighter or a B-25 Mitchell bomber. The lamp's origin was not discovered and may be unrelated to the aircraft as it is not a standard part of either model.

Both these finds appeared to comprise isolated remains rather than representing coherent crash sites and it was not considered necessary to establish exclusion zones to prevent further dredging at the sites.

With regard to the January finds, WA recommended that UMA and CEMEX instructed dredging to cease in the area of the finds soon after the reports were lodged. In accordance with the Protocol a wide Temporary Exclusion Zone (TEZ) was implemented to cover the dredging vessel tracks from which aircraft wreckage was recovered in both 2006 and 2007. This TEZ covers approximately the eastern half of the licence area.

To reduce the area closed to dredging UMA and CEMEX commissioned WA to assess the most recent sidescan sonar data over Area 430 with the specific aim of identifying any anomalies likely to be parts of the aircraft. Only data collected from within the TEZ was to be processed. When the location of the aircraft crash site was not established, WA recommended in May 2007 that a high resolution geophysical survey be carried out with the specific objective of locating the site so that a localised Archaeological Exclusion Zone can be implemented. This was completed in August 2007.

Research carried out by WA attempted to establish the type of aircraft that the January finds came from. 87 items from the UMA_0083 find thought to be potentially diagnostic were cleaned, catalogued and photographed. These photographs and object descriptions, together with the photographs of the UMA_0080 and UMA_0081 finds received from the wharves were burnt to CDs and sent out to various organisations including the RAF museum at Hendon, the Imperial War Museum and the Aircraft Restoration Company.



BMAPA/EH

Protocol for Reporting Finds of Archaeological Interest

UMA_0080_a, UMA_0081_a & UMA_0083_a: German Aircraft Wreckage

The parts are most certainly German. John Romain of the Aircraft Restoration Company states that the various alloy pieces riveted together are of classic German design, as is the combination of steel to alloy present in some of the pieces. German text is also visible on one object and part numbers are found on others. One object was identified as the lower part of a Lku 4 course indicator gyro compass, part number FI 22561. In the early 1940s this type of gyro compass was used in only four types of aircraft: Heinkel 111; Junkers Ju 88; Messerschmitt Bf 110; Dornier Do 24. Other parts, such as engine components, indicate the aircraft is either a Ju 88 or He 111 and is most likely to be a Ju 88.



Junkers Ju 88 in flight



Heinkel He 111 over London, 7 Sep 1940

The He 111 carried a crew of 4 or 5 while the Ju 88 carried 2 to 6 (typically 4 in the earlier bombers). The manner in which the aircraft crashed will affect the number of aircrew whose remains are present in the wreck. If the pilot ditched the aircraft, some of the crew may have managed to bail out. In addition, both types of aircraft carried further weaponry than the single MG 15 for which there is definite evidence. Unless all the other magazines were emptied, further ammunition will be contained within the crash site. Both aircraft also carried bombs. The maximum payload of either of the possible aircraft types is 3000 kg for the Ju 88. The presence of unexploded ordnance must therefore be considered a possibility.

The date on which the aircraft crashed post-dates June 1940 as July 1940 is the latest date stamped on the ammunition within a magazine recovered as part of find UMA_0081. It therefore seems likely that the aircraft crashed in late summer 1940, during the Battle of Britain, before using up this ammunition. If the aircraft is indeed a Ju 88 this suggests the period during which it is likely to have crashed to be the second half of August 1940, although aircraft of this type were shot down both before and after this period in smaller numbers.

Information about this discovery has been forwarded to:

- The Ministry of Defence Joint Casualty and Compassionate Centre
- The National Monuments Record
- The Historic Environment Record for Suffolk
- The Local Government Archaeology Officer for Suffolk
- The Finds Liaison Officer (Portable Antiquities Scheme) for Kent
- The German Embassy
- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck



No Picture Available

UMA_0082_a: 2 Cannon Balls

These cannon balls were found at UMA's Bedhampton Quay by D Taylor and R Smith. They were found in material dredged on 6th January 2007 from Licence Area 340 off the east coast of the Isle of Wight.

Cannon balls, or round shot, are one of the earliest forms of projectiles fired from cannons. Round shot was made in early times from dressed stone and from iron by the late 15th century until the late 18th century.

Finds of cannon balls on the seabed may relate either to the location of a battle (such shot will often exhibit signs of firing or impact damage) or to the location of a shipwreck. The durability of metallic elements compared to wood and other organics means that older shipwrecks, or shipwrecks in high energy environments, are often represented solely by cannon and concreted shot on the seabed. Even reports of individual cannonballs can therefore tell us much about warfare at sea or potentially pinpoint the location of a currently unidentified shipwreck.

Metal artefacts from marine contexts are very unstable once they are removed from the seabed and require professional conservation if they are to survive long term. In the short term the most effective treatment is to keep them submerged in fresh water.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- 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



BMAPA/EH

Protocol for Reporting Finds of Archaeological Interest



UMA_0083_b: Sounding Lead

This object was discovered by Jo O'Brien at UMA'S Ridham wharf. It was found in material dredged on 30th January 2007 from Licence Area 430 off Suffolk by the vessel *City of London*.

This object is likely to be a sounding lead, or 'plummet'. Although it is possible that it may be a fishing weight or plumb bob these do not require the depression that is clearly visible in the base. The object is made of lead and it is not possible to date it as lead has been used by humans for at least 7000 years.

Sounding leads are used today and are known to have been used for over 2000 years, with some of the earliest known examples dating from the second century BC. They are probably the earliest devices used to facilitate safe navigation, especially in reduced visibility. They were used at the end of a lead line to measure the depth of the water. A cavity in the bottom or 'heel' of the lead could be 'armed' with tallow to collect a sample of the seabed. Sand, mud, shingle, shells etc. adhere to the tallow and inform the leadsman of the type of bottom deposits present. The lead line was used particularly during pilotage in shallow coastal waters.

The lead line attached to the plummet would consist of a hemp line and have contained marks at various depths in fathoms (1 fathom = 6 feet). The traditional marks used are made from pieces of leather, white cotton, red bunting, blue serge and cord. When sounding the lead in darkness the leadsman can still tell the depth by feeling the number of leather strips or type of cloth.

This example is from a small boat as it weighs only 12 oz (338 g). Hand lead lines of about 25 fathoms were used with a lead weighing around 7 pounds (3.18 kg) to measure depths in coastal waters of up to around 20 fathoms. For measuring greater depths a deep sea lead line was used. The lead used in this case was about 14 pounds (6.35 kg) in weight and the line marked at intervals of 5 fathoms with knotted cord.

Although the lead was found in the same load as nearly 300 pieces of Second World War aircraft (UMA_0083_a) it is unlikely to be related, although it could have been lost through snagging on the wreckage.

Information about this discovery has been forwarded to:

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



BMAPA/EH

Protocol for Reporting Finds of Archaeological Interest



Hanson_0085_a: Uncharted Wreck

A seafloor feature identified as a possible wreck was discovered by Emu Surveys during a sidescan sonar survey on behalf of Hansons Aggregates in August 2006. The find was reported to English Heritage by Emu on 01/03/2007. This potential wreck lies approximately 1.2km NW of Licence Area 202, approximately 9km off Great Yarmouth, in an area of known wreck losses dating mostly from the 1800s.

Ever since the earliest travellers adopted rivers and the sea as a means of transportation and communication, water crafts have played a fundamental role in the history of the world. From the invention of the first known Mediterranean vessel around 6000 years ago to the invention of iron hulls around 1850, vessels have played an important role in a nation's identity through naval battles, trading expeditions and other voyages. Wrecks are important archaeological finds in their own right and discovering their identity and function opens new understanding of technology, society, economics, politics and historical events.

The image above was produced from Emu's sidescan sonar data. The feature is an elongated dark reflector measuring approximately 114m long by 15m wide. It is clearly a man made object, most probably a wreck that is partially buried. This find demonstrates how much still lies buried and undiscovered in British waters. The sediments in the area of the find are known to move by approximately 100m a year. This high level of movement, equating to 8m a month, could rapidly bury and re-expose large wreck sites and other archaeological material.

Historical records from the United Kingdom Hydrographic Office and National Monuments Record Office were consulted by WA staff to try to identify this new find. The recorded wreck losses in the area indicate a high percentage from the 19th century. Within 2km of Hanson_0085 are six losses of unknown identity. Although none of the records coincide with the new find, the positioning techniques available at the time of the losses were not as accurate as those of today. Hanson_0085 could therefore be an unrecorded wreck or one of the six reported losses. These six sites were rediscovered in the late 1980s by the UKHO and resurveyed in 1993, when only magnetic anomalies were found. By the turn of the 21st century none of the wrecks were detected. It is possible that later surveys did not use a magnetometer and the remains are still buried or that they have been completely broken up and dispersed.

The remains of Hanson_0085 are likely to be primarily wooden in construction with iron structural parts and fittings as well as iron steam engines. Shipbuilding in the 1800s followed the practice of constructing wooden hulls with iron fittings. By the 1850s larger iron hull parts were being fitted and steam engines were replacing sails. Brunel's *SS Great Britain* was the first completely iron hulled vessel built in the UK. Iron or steel hulled ships became common in the second half of the 19th century.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The National Monuments Record
- The United Kingdom Hydrographic Office
- The Historic Environment Record for Great Yarmouth
- The Local Government Archaeology Officer for Great Yarmouth



BMAPA/EH

Protocol for Reporting Finds of Archaeological Interest

Hanson_0088_a: Fossil of a Dolphin



An unusually shaped stone was dredged from licence area 408, 50 miles NE of the wash (The Coal Pit) during the first third of 2007. The object was discovered on board of the dredger Arco Humber and it was reported by Hanson Aggregates Marine Limited on 3rd May 2007 as a possible fossil.



Following examination of photographs by Dr. Matt Leivers, Prehistoric Finds Specialist at Wessex Archaeology, he confirmed this was an object of non-archaeological interest.

However, Wessex Archaeology sought further specialist help. Marine mammals palaeontological specialists from the Natural History Museum and the North Sea Project (Natural Environment Research Centre) were very excited about the finding. From examining the photographs, they all confirmed this is clearly **the first phalange of the pectoral flipper of a dolphin**, and what appears to be quite a sizeable animal too. This dolphin most probably lived in the Pliocene epoch, 5.3 million to 1.8 million years before present.



The only hominids around at the time were the now extinct australopithecines which were closely related to humans and were present in Africa in the Pliocene. The earliest archaeological evidence of humans in the UK dates back to only 700,000 years ago. Archaeology involves the study of past human life and culture and only fossilised bones of animals that co-existed with humans are of archaeological interest. Fossilised mammoth bones, as shown below, are of archaeological interest in terms of human subsistence. These woolly elephants lived in Northern Europe between 300,000-10,000 years ago.



Information about Hanson_0088_a has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate



BMAPA/EH

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UMA_0090_a: Ship's Timber



This object was discovered by Arthur Farmiloe at UMA's Bedhampton Quay within material received from the vessel City of Chichester. The material had been dredged on 16th April 2007 from Licence Area 340, off the east coast of the Isle of Wight.

The timber is curved in form with a roughly rectangular projection on the inner surface. It is made of oak and has been worked. Tool marks are visible in several places and may have been made by an axe or adze. There is no evidence of any fastenings but Steve Allen of the York Archaeological Trust suggests that both ends of the timber appear to be broken and the fastenings may have been on the missing portions.

Staff at Wessex Archaeology suggest that the timber is unlikely to have come from a terrestrial structure, primarily owing to its curved form. Nigel Nayling from the University of Wales suggests that it may be part of a framing timber from a carvel built vessel. Vessels built using this method had their planks laid edge-to-edge without overlapping. Antony Firth (Wessex Archaeology) suggests that the timber is pre-18th century in date. Steve Webster (Wessex Archaeology) states that if the timber is from a carvel built vessel then it probably post-dates 1500 as although the carvel technique had been used since Roman times for some merchant vessels it became commonly used for naval vessels as well during c. 1500 – 1850.

Ever since the earliest travellers adopted rivers and the sea as a means of transportation and communication, water craft have played a fundamental role in the history of the world. From the invention of the first known Mediterranean vessel around 6000 years ago to the invention of iron hulls around 1850, vessels have played an important role in a nation's identity through naval battles, trading expeditions and other voyages. Wrecks are important archaeological finds in their own right and discovering their identity and function opens new understanding of technology, society, economics, politics and historical events.

It has not been possible to identify a shipwreck from which this timber may have originated but the discovery of further wreck material from the area would greatly enhance the possibility of pinpointing the location of a currently unidentified shipwreck.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- 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



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UMA_0091_a: Cannon Ball

This cannon ball was discovered at UMA's Ridham Dock Wharf by Garry Phillips. It was found in material dredged on 30th January 2007 from UMA's Licence Area 430, approximately 20 miles off the coast of Suffolk. With no archaeological connection but in the same load, almost 300 pieces of wreckage of a 1940 aircraft and a human bone were also found & reported (UMA 0083 a).

Based on the above photograph provided by UMA, Wessex Archaeology verified this object as a cannon ball. It's made of iron with encrustation, seems complete and estimated from the above photograph, it measures approximately 120mm in diameter.

Cannon balls, or round shot, are one of the earliest forms of projectiles fired from cannons. Round shots were made in the 14th century from dressed stone and from iron by the 15th century until late 19th century.

Finds of cannon balls on the seabed may relate either to the location of a battle (such shot will often exhibit signs of firing or impact damage), fort shots washed further out into the sea or to the location of a shipwreck.

Two major naval battles took place in the vicinity. The battle of Lowestoft was the opening engagement of the Second Anglo-Dutch war in 1655 when 20 Dutch ships and two English vessels were lost. The Battle of Sole Bay in June 1672 was the first engagement of the Third (and final) Anglo-Dutch war. The Dutch lost three ships, while the combined English and French fleet suffered the loss of four ships.

The durability of metallic elements compared to wood and other organics means that older shipwrecks, or shipwrecks in high energy environments, are often represented solely by cannon and concreted shot on the seabed. Even reports of individual cannon balls can therefore tell us much about warfare at sea or potentially pinpoint the location of a currently unidentified shipwreck or in greater numbers it can pinpoint where battles took place.

Metal artefacts from marine contexts are very unstable once they are removed from the seabed and require professional conservation if they are to survive long term. If the object is still wet, the short-term most effective treatment is to keep it submerged in fresh water. If the object has already dried out, then the best preservation is to keep it dry and store it surrounded by padding. It is recommended that dried out objects are not re-submerged.

Information about this discovery has been forwarded to:

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



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UMA_0092_a: Metal Fastener

This object was found by Justin Apps at UMA's Ridham wharf. It had been dredged on 18th April 2007 from Area 296 off the Norfolk coast by the City of London.

Photographs of this object were sent to Andrew Simpson at the RAF Museum in Hendon who circulated the images to his Head of Department and the resident Aircraft Technician. The metal object has been identified as a fastener – a hardware device that mechanically joins or affixes two or more objects together.

Although clearly a constructional element, it is not possible not ascertain the precise origin and function of the object. However, although it has not been conclusively identified as such, the possibility that the metal fastener comprises part of an aircraft or a modern vessel has not been ruled out.

Crashed aircraft are particularly important to archaeologists. Not only do they offer a unique form of evidence for the historical development of flight, but they also often relate to the profound changes in warfare which marked the 20th century. Moreover, all crashed military aircraft are protected by law under the Protection of Military Remains Act 1986. The discovery of aircraft remains is thus incredibly important, particularly as aircraft crash sites may contain human remains.

The metal fastener appears to comprise an isolated find. However, the discovery of further remains from the same area should be reported immediately. Further finds from the area which may be associated with the fastener would not only greatly aid interpretations of this find, but may potentially locate a previously unknown crash site or wreck.

Information about this discovery has been forwarded to:

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



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Cemex_0093_a: Animal Bone

This animal bone was found at the same time as Cemex_0093_b, a metal object. The two objects were discovered in a split cargo of gravel by Roger Burnham in Northfleet wharf on 24th April 2007. The exact dredging location & date are unknown. The material was dredged by the vessel Sand Weaver from Areas 102 (Humber) & 251(Lowestoft) on 5th or 6th & 18th April 2007.

This fairly complete bone is approximately 35cm long and was identified from the above photograph as a radius from a mammal with a size similar to that of a horse, red deer or cattle by Jessica Grimm (Animal Bone Specialist, Wessex Archaeology). Having assessed the photograph, English Heritage have suggested that it may be the radius from a hippopotamus. Without closer examination it is not possible to verify its origin.

Animals were carried on board ships as cargo and as provisions and animal bone such as Cemex_0093_a may end up on the seabed as a result of a shipwreck or through simple waste disposal. Animal remains may also end up in marine contexts having been washed from terrestrial deposits by rivers or eroded from cliffs or beaches. Alternatively they may date to a time when the seabed was dry land, for example at the height of the last ice age c.18,000 years ago. Large wild herbivores, such as cattle, horses and red deer have long been present in Northern Europe and this bone may be prehistoric in date. It is not feasible to confirm a date for the bone from a photograph.

During the last ice age a greater proportion of the world's water was incorporated in the ice sheets and sea level dropped. As a result, large expanses of land, now forming the seabed of the North Sea and the English Channel, were available for population by humans and animals. At the end of the ice age, ice sheets melted, sea levels rose reaching current sea level until c.5,000 years ago. These areas then became submerged preserving many of these former terrestrial landscapes.

If the bone is from a hippopotamus it is from an interglacial period between ice ages when the temperature was higher than it is now. These temperature changes can be quite rapid and ultimately the sea level may have been higher than it is today. Depending on the complex balance between warming and melting there may have been a suitable environment for hippopotami on land which is now submerged. Alternatively, the bone may be derived from an area which is now onshore. It is known that there were hippopotami in what is now the London area during the Ipswichian interglacial, c.130,000 – 80,000 years ago. There is no evidence for human habitation in Britain as early as this and if the bone is this old it will not be possible to date it as the range is beyond that which can be found from carbon-14 dating.

The discovery of further material from the same area may help identify the bone's origin. As further discoveries are reported and mapped it may be possible to identify meaningful patterns in the distribution of finds that will aid archaeologists in the identification of sites and archaeologically sensitive areas on the seabed.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- National Monuments Record
- The Historic Environment Record for Suffolk & East Riding of Yorkshire
- The Local Government Archaeology Officer for Suffolk & East Riding of Yorkshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Kent.



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Cemex_0093_b: Metal Object

This metal object was found at the same time as Cemex_0093_a, an animal bone. The two objects were discovered in a split cargo of gravel by Roger Burnham in Northfleet wharf on 24th April 2007. The exact dredging location and data are unknown. The material was dredged by vessel Sand Weaver from Areas 102 (Humber) & 251(Lowestoft) on 5th or 6th & 18th April 2007.

Through an assessment of its photograph, the metal object appears to be an elongated, blade shaped iron object, approximately 27.5cm long. The tip is not quite symmetrical, with the right side being slightly curved and a bit longer than the other, straight side. Jörn Schuster (Archaeological Artefacts Specialist, Wessex Archaeology) did not think this was a pole stave or knife, it appears to be too square. The tang is also uncommonly short and has an unusual slot in it. Jörn has suggested that the metal object is possibly part of an agricultural tool such as a plough.

Wessex Archaeology's post medieval specialist, Phil Andrews noted the object does not appear to be particularly old and would suggest a post-medieval date. Nevertheless, the preservation of archaeological artefacts recovered from seabed sediments is significantly different to those recovered from land sites and this object could date back to numerous periods. The shape of farming and agricultural tools has not evolved significantly in the last 2500 years and so this object could have been made as early as the Iron Age, when iron started replacing tools made of stone and wood. Similarly, this tool could have been manufactured in Roman times, medieval, post-medieval and even as late as the 20th century. Without closer examination it is not possible to provide any further interpretation.

It remains uncertain whether this metal object and the animal bone were recovered from the same location, especially since the vessel Sand Weaver dredged material from two separate licence areas (102, Humber and 251, Lowestoft) before discharging the cargo at the wharf.

If the animal bone found in the same load as this metal object was from a prehistoric animal then these two objects bear no relation to each other. However, if the bone is not prehistoric and the finds were recovered at the same time, at the same location, they could be part of a single archaeological site and so they could represent a ship cargo of farming stock and tools. It could also be possible that these two objects have no relation to each other. The tool could be an isolated object, thrown overboard as waste or evidence of a shipwrecked cargo and the bone could have been washed into the sea from a terrestrial location by rivers.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- The Historic Environment Record for Suffolk & East Riding of Yorkshire
- The Local Government Archaeology Officer for Suffolk & East Riding of Yorkshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Kent



BMAPA/EH

Protocol for Reporting Finds of Archaeological Interest



CEMEX_0095_a: Ship's Timbers

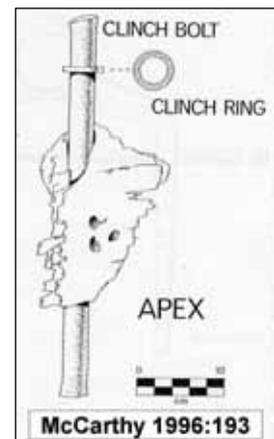
These timbers were found by Daniel Kelliher aboard the Sand Swan. Dredging was taking place in Area 175/1 in the Mersey on the 27th July 2007.

These two large timbers both measure 0.6m long. One contains a metal bolt and has a cross-section of approximately 0.2m by 0.1m. The other timber has a cross-section of approximately 0.2m by 0.15m.

Wooden pegs, known as trunnels, treenails or trenails, are present in both timbers. These long cylindrical pins of wood were commonly used to connect the planking to the frames in the timber frame construction of watercraft. The trunnels would expand when in contact with water, causing them to grip the planks more tightly.

The copper bolt provided another technique for fastening in shipbuilding traditions. Bolts used to fasten or secure timber components have many different purposes and appear in many different forms. Bolts found out of context are best considered under two subdivisions; 'short fastenings' and 'through fastenings' (McCarthy 1996:189). This copper bolt may be best described as a 'through fastening' – a bolt which passes completely through the pieces it joins. Within this category, it possibly represents a 'clinch bolt' used in shipbuilding to fasten elements such as scarf joints, keelsons or stringers (McCarthy 1996:191).

These constructional characteristics imply that the timbers comprise part of a shipwreck. It is not possible to ascertain a date of the vessel without further analysis. However, clinch bolts appear in documentary sources from the late 18th century (McCarthy 1996:181) and are known in archaeological examples to have been in use prior to this date. As a copper bolt, it is likely that this find predated the early 19th century when the use of iron in ship construction predominated over copper, although a later date cannot be discounted.



Following discovery of the timbers, the implementation of a precautionary exclusion zone around where they were discovered was advised. Due to the strength of the tidal currents in the Mersey, it is possible that the timbers are from a wreck which is broken up and widely dispersed. It has not been possible to identify the wreck from which these finds originated. However, the discovery of further material from the area would greatly enhance the potential for pinpointing the location of a currently unidentified wreck.

References:

McCarthy, M, 1996, 'Ship fastenings: a preliminary study revisited' in *The International Journal of Nautical Archaeology* 25 (3 and 4): 177-206

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- The Historic Environment Record for Merseyside
- The Local Government Archaeology Officer for Merseyside
- The Finds Liaison Officer (Portable Antiquities Scheme) for Cheshire, Greater Manchester and Merseyside

UMA_0096_a, UMA_0099_a, UMA_0110_a: Possible World War II Rubble



UMA_0096: Silver cutlery



UMA_0096: Brass plate



UMA_0099: Metal object



UMA_0110: Possible compass ring



UMA_0110: Possible light switch fitting



UMA_0110: Fuse box cover



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UMA_0096_a, UMA_0099_a, UMA_0110_a: Possible World War II Rubble

These finds were all dredged from the Isle of Wight dredging region to the west of Nab Tower, in an area containing large quantities of rubble from which objects are frequently dredged up.

UMA_0096 was discovered by Darren Taylor at Bedhampton Quay in material dredged on 30th July 2007 by the City of Chichester in Area 122/2. It consists of a silver spoon and fork, both hallmarked, and a brass plate. The plate has the inscription 'portable connection for port bow light' and as such has clearly come off a vessel. Lorraine Mephram, Wessex Archaeology's Finds Manager, states that although the fork is an entirely non-distinctive type the spoon is a fiddle pattern – this refers to the shape of the handle – and is a type introduced in the 1780s and still in production today. The set of 4 hallmarks together on the spoon indicates it was made later than 1781, when this practice was first introduced.

UMA_0099 was discovered by Darren Taylor at Bedhampton Quay in a cargo dredged from Area 122/3 by the City of Chichester on 4th August 2007. It is a metal object approximately 20cm long. Approximately halfway along it is what appears to be a broad arrow mark. This would indicate that it originated from the Board of Ordnance. This government organisation issued ordnance and warlike stores to both the Army and the Navy and was abolished in 1855 although the arrow mark continued to be used for a time by the War Office, which took over the duties of the Board. The object also has the number 24 – 4½ inscribed, on the left-hand end as the object appears in the photograph. Wessex Archaeology has been unable to identify this object. Although it appears remarkably similar to a belying pin it would need a narrow stem below the collar (on the right-hand end) to fit through a pin rail. The object was reported as being unbroken so it appears it must be something else.

UMA_0110 was found by Steve Smith at Bedhampton Quay in a cargo dredged by the City of Chichester from Area 122/3 on 26th September 2007. Three brass objects were found. One object was suggested to be a compass ring. A second object appears to be a fuse box cover. The third object appears similar to a light switch surround or light fitting although Lorraine Mephram suggests it could be a fitting for almost anything. It probably dates from the late 19th or 20th century.

UMA have stated that the rubble from which these finds appear to have come is spread across several square kilometres, covering an area to the south of the Portsmouth coast and to the west of Nab Tower. The rubble may have accumulated due to the dumping of domestic scrap or demolition debris during or in the aftermath of WWII. Wessex Archaeology contacted Diana Gregg at Portsmouth City Museum and Records Office who informed them that the majority of rubble within Portsmouth was dumped inland and reused for various military projects, such as constructing the embarkation ramps used by the troops in D Day. Whilst it is possible that the rubble was dumped at sea when no longer needed for this purpose, there is no record for this. As such, we are unable to conclusively identify the source of the rubble, but will continue to investigate its origin. However, the presence of the rubble does not preclude the occurrence of wrecks in the area. The finds of the possible compass ring and the plate with inscription may have come from a wreck, been lost overboard from a vessel or been contained in the rubble when it was dumped. The other finds may also be associated with loss from a vessel or wreck.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estates
- The Receiver of Wreck
- The National Monuments Record
- 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



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UMA_0097_a: Possible Aircraft Part

This fragment was found at UMA's Burnley Wharf by Mr. J. Jerromes on the 3rd June 2006. The find was found in material dredged by the vessel Arco Avon from licence area 127, approximately 11km from the eastern extremity of the Isle of Wight.

From an examination of the photograph, this metal fragment appears to measure approximately 34cm in length and 6cm in width, and displays cross rivets on its surface. The object was identified as a possible aircraft part by the staff at the wharf. Photographs of the find were sent to Andrew Simpson at the RAF Museum in Hendon. Mr Simpson suggested that the object could quite possibly have belonged to an aircraft, although it is not possible to say conclusively through examining the photographs alone.

Crashed aircraft are particularly important to archaeologists, as not only do they offer a unique form of evidence for the historical development of flight, but they also often relate to crucial historical episodes of warfare which have had a profound impact during the 20th century and beyond. In addition to this, all crashed military aircraft are protected by law under the Protection of Military Remains Act 1986. The discovery of aircraft remains is thus incredibly important, particularly as aircraft crash sites may contain human remains.

As the metal object is an isolated find, it is not necessarily indicative of the presence of an aircraft crash site. However, the discovery of further remains from the area should be reported immediately. Further finds could not only aid the interpretations of this particular discovery, but could also be mapped to enable the identification of meaningful patterns in the distribution of finds within this area. This in turn has the potential to identify sites and archaeologically sensitive areas on the seabed, perhaps even resulting in the discovery of a previously unknown aircraft crash site.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- 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.



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UMA_0098_a: Concrete Objects

These objects were found at UMA's Burnley Wharf Rejects Bay. The finder, dredging area and date on which the objects were found are unknown.

This find comprises two concrete objects. From the photographs, one appears to be square in shape, measuring c.24cm². This concrete fragment has a circular hole in the middle, with a diameter of c.5cm. The other fragment consists of a concrete block also square in shape measuring c.15cm² as assessed from the photograph. Upon the surface of this concrete block are 5 fragments of green and white tile.

Photographs of these finds were sent to Wessex Archaeology's Finds Department. It was suggested that the finds appear to be building rubble. However, the possibility that the fragment with the hole in the centre was re-used as a fishing weight has not been ruled out.

Fishing weights are interesting from an archaeological point of view. Not only can their location can tell us where people were fishing, but they can also inform us of the diet of local communities. They may have been used in an inshore environment or further out at sea on fishing gear deployed from vessels.

It is not possible to date the objects from the photographs alone. However the use of modern concrete, which started with the development of Portland Cement, began around the 1820s (www.concrete.org.uk). It has been suggested by the Wessex Archaeology Finds Department that the tiles which are apparent on the surface of one of the fragments may point towards a 20th century date for the rubble, although this cannot be verified.

Information about this discovery has been forwarded to:

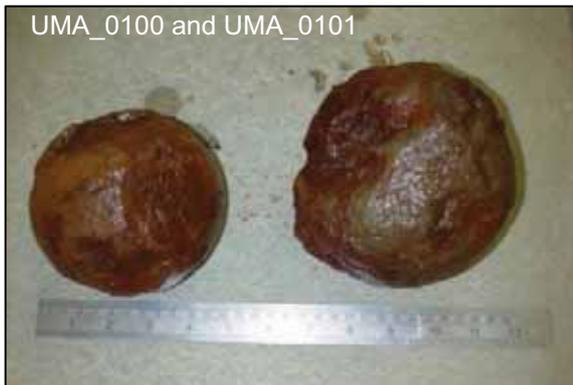
- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- The Historic Environment Record for Hampshire
- The Local Government Archaeology Officer for Hampshire
- The Finds Liaison Officer (Portable Antiquities Scheme) for Hampshire.



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UMA_0100_a, UMA_0101_a and UMA_0102_a: Cannon Balls



Found at UMA's Ridham wharf, all were dredged from Area 430 by the City of London. UMA_0100 and UMA_0101 were found by Justin Apps and UMA_0102 by Richard Apps in material dredged on 11th July, 22nd June and 11th August 2007.

Cannon balls, or round shot, are one of the earliest forms of projectiles fired from cannons. They were made from iron by the late 15th century until the late 18th century. Finds of cannon balls on the seabed may relate either to the location of a battle (such shot will often exhibit signs of firing or impact damage) or to the location of a shipwreck. Even reports of individual cannonballs can therefore tell us much about warfare at sea or potentially pinpoint the location of a currently unidentified shipwreck.

Two major sea battles took place around Area 430 in the 17th century and it is possible that the cannon balls are related to these. The battle of Lowestoft was the opening engagement of the Second Anglo-Dutch war in 1665. Altogether, 20 Dutch ships and two English vessels were lost in the course of the battle, among these the Dutch flagship *Eendracht* which exploded. The Battle of Sole Bay in June 1672 was the first engagement of the Third (and final) Anglo-Dutch war. The Dutch lost three ships, while the combined English and French fleet suffered the loss of four ships. Although none of the lost warships from either battle have been located, it is not inconceivable that casualties might be found in the vicinity of Area 430.

Metal artefacts from marine contexts are very unstable once they are removed from the seabed and require professional conservation if they are to survive long term. In the short term the most effective treatment is to keep them submerged in fresh water. Concretions like that on UMA_0102 should not be removed as this may damage the object.

Information about this discovery has been forwarded to:

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



BMAPA/EH

Protocol for Reporting Finds of Archaeological Interest



CEMEX_0104_a: Worked Wood and Associated Coal

These objects were discovered at CEMEX's Dover Wharf by I. Buckley. It was found in material dredged on the 7th August 2007 from licence area 251, over 7km east from Lowestoft.

This fragment of wood has been worked to produce flat sides and there is an indication that a hole has been crafted into the wood. Through an examination of the photographs provided, the fragment appears to be c.17cm long and c.7cm wide. Alongside this timber fragment, two pieces of coal were found, the larger measuring c.5cm² as determined from the photograph.

As the wooden fragment constitutes a worked piece of timber into which a hole has been crafted, it is possible that the find is part of a wreck, although it cannot be conclusively identified as such. Due to the worn nature of the fragment, it is impossible to ascertain the origin or function of this piece of timber.

The presence of coal alongside the timber fragments may be of some significance. If the two finds are associated, the finds may suggest the remains of a coastal merchant vessel carrying a cargo of coal. As a bulk commodity coal was generally shipped by water, with the east coast of Britain providing one such trade route. Alternatively, it is possible that the finds derived from a wooden steam propelled vessel where coal was used as the boiler fuel.

Whilst it is possible that the fragments of wood and coal were part of a wreck, they appear to be isolated finds and are therefore not necessarily suggestive of a coherent wreck site. However, any further remains from the area should be reported immediately. The discovery of more wreck material would greatly enhance the potential for pinpointing the location 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 Monuments Record
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UMA_0107_a: Mammoth Tooth

This object was found at UMA's Ridham Wharf by Garry Phillips in material dredged by the City of London on 16th September 2007 from Area 296 off the coast of Norfolk.

This photograph was shown to Jessica Grimm, Animal Bone Specialist at Wessex Archaeology who identified it as a mammoth tooth. She suggests it may be a milk tooth as it is quite small and appears possibly unworn. Earlier finds of mammoth remains have been made in Areas 254 and 361, part of the East Coast dredging region along with Area 296.

Mammoths are relatively rare fossils in Britain. They occur from the Wolstonian ice age (380,000 to 130,000 years ago) to the end of the Devensian ice age (c. 10,000 years ago) but there are few dated examples. It is not currently possible to confirm a date for the tooth.

The remains of ice age mammals may end up in marine contexts having been washed from terrestrial deposits by rivers or eroded from cliffs or beaches. Alternatively they may date to a time when the seabed was dry land.

During the last ice age (the Devensian) a greater proportion of the world's water was incorporated in the ice sheets and sea level dropped. As a result large expanses of land, now forming the seabed of the North Sea and the English Channel, were available for population by humans and animals. At the end of the ice age sea levels rose as the ice sheets melted and these areas became submerged. Many of these former terrestrial landscapes lie preserved on the seabed.

This discovery has been added to the currently available baseline data for the marine historic environment in the East Coast region. As further discoveries are reported and mapped it may be possible to identify meaningful patterns in the distribution of finds that will aid archaeologists in the identification of sites and archaeologically sensitive areas on the seabed. This is of benefit to both the public in general and to the marine aggregate industry in enabling companies and curators to be quickly alerted to the presence of archaeological sites that can be better protected as a result.

Information about this discovery has been forwarded to:

- English Heritage
- BMAPA
- The Crown Estate
- The Receiver of Wreck
- The National Monuments Record
- The Historic Environment Record for Norfolk
- The Local Government Archaeology Officer for Norfolk
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UMA_0109_a: Copper Bolt

This artefact was discovered at UMA's Ridham Dock wharf by Garry Philips and Justin Apps. The metal object was discovered in material dredged in September 2007. The licence area in which the material was located is unknown as the item was found in a screen mat.

This bolt appears to be made from copper, and is c.15cm in length. It is possible that it derived from a wreck, as bolts provided a technique for fastening or securing components together in shipbuilding traditions.

Bolts have many different purposes and appear in many different forms in the construction of watercraft. Bolts found out of context, such as this find, are best considered under two subdivisions; 'short fastenings' and 'through fastenings' (McCarthy 1996:189). This copper bolt may be best described as a 'short fastening' – a bolt which is fairly short in length and does not extend through the material it intends to connect. More specifically, due to its length, solid head and tapered point, it is possible that the bolt represents a 'dump bolt'. Dump bolts were often used in plank fastening (Thearle 1874:230).

Dump bolts appear in documentary sources from the late 19th century (McCarthy 1996:181) although they are thought to have been in use prior to this date. As a copper bolt, it is possible that this find predated the early 19th century when the use of iron in ship construction predominated over copper, although a later date cannot be discounted.

As the bolt appears to comprise an isolated find, it is not feasible to identify its function or origin conclusively. It may have been a result of waste disposal or lost overboard rather than the indication of a wreck. Moreover, the bolt may not derive from a vessel at all. The discovery of further material from the area would greatly aid interpretations of this find and may potentially enhance the possibility of locating a previously unknown or unidentified wreck site.

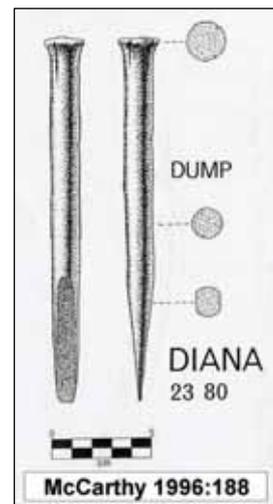
References:

McCarthy, M., 1996, 'Ship fastenings: a preliminary study revisited' in *The International Journal of Nautical Archaeology* 25 (3 and 4): 177-206

Thearle, S. J. P., 1874, *Naval Architecture: a Treatise on Laying off and Building Wood, Iron and Composite Ships*. London

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BMAPA is one of the constituent bodies of the Quarry Products Association, the trade association for the aggregates, asphalt and ready-mixed concrete industries.



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