Wessex Archaeology

Managing Change on Wreck Sites Through Community-based Recording: The London Recording Project EH 6400

Technical Report

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Ref: 83940.06

February 2013



Technical Report

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Technical Report

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Technical Report

Summary

Wessex Archaeology (WA) was commissioned by English Heritage (EH) in March 2012 to undertake a project entitled "Managing change on wreck sites through community-based recording: The *London* recording project". The project was funded through the National Heritage Protection Commissions Programme under Activity 4H1.203.

This project was concerned with developing a practical community-based model or protocol for recording 'at risk' designated wreck sites which experience difficult environmental or other conditions. The chosen site was the *London* in the Thames Estuary off Southend.

The major second rate warship *London* was built by the Commonwealth government in 1654-6. It was lost in the service of Charles II in 1665 as a result of an accidental magazine explosion, sinking with the loss of most of those onboard. Subject to some salvage and clearance operations shortly thereafter and in the late 20th century, the wreck of the *London* was designated under the Protection of Wrecks Act (1973) in 2008. It remains one of the most important marine heritage assets in the UK.

The project was undertaken in three Execution Stages between March and December 2012 as follows. The diving project was delayed due to bad weather and was undertaken from 10-14 September 2012.

Execution Stage	Tasks
1	Commission, team meeting, drafting of Archaeological Protocol.
2	Planning of diving project; execution of diving project (installation of survey infrastructure, upskilling of avocationals and trialling of protocol); initial stage monitoring of subsequent Licensee recording.
3	Further monitoring; review of results and drafting of technical report and final protocol document; preparation of archive.

The main product of the project has been the creation and trialling of a Recording (Archaeological) Protocol document (WA 2012d). This provides the local Licensee and others, including Southend Museum, with an agreed structure and flexible methodology for dealing with the recording of the site and any finds that are recovered from it.

The results of the project in terms of aims and objectives can be summarised as follows:

Aim	Progress
Establish a community-based	Achieved. The Protocol represents a simple, pragmatic
method of recording the London	and accessible structure for local volunteers to record the
sites that is capable of being used as	site with the assistance of the local museum service and
a model for the conservation	SMR. It meets current archaeological standards and is
management of similar 'at risk' wreck	capable of being adapted for use on similar sites. It will

sites;	have particular application to new sites and inexperienced avocational archaeologists.
Encourage community participation and management of the site.	Achieved. The Protocol has been devised and trialled with the assistance of the existing local Licensee and his team and with the active assistance of the local museum service and SMR. By providing an easy, accessible recording system it encourages community participation. By facilitating this and involving local curators and heritage managers it promotes both local management and co-operation with EH. The local and national profile of the site is also being raised by public presentation and publication.
Objective	Progress
O1 To design and develop an Archaeological Protocol for Community-Based Recording ('Archaeological Protocol') for the London that is capable of being used and developed by current and future avocational divers/groups to record and monitor the wreck and to recover 'at risk' finds.	Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been designed so that it is capable of use by other investigators and is intended to be iteratively modified in the light of ongoing experience.
O2 To install survey infrastructure in the form of survey control points/datums (CPs) on one or both sites.	Achieved with the assistance of Mark Dunkley. A total of 14 CPs were installed and positioned during the diving project. More accurate positioning of existing CPs and the installation of further CPs by the Licensee (ongoing) will be required as survey of the site progresses.
O3 To trial the Archaeological Protocol on one or both sites.	Achieved on Site 2 during the diving project and during subsequent Licensee work on site. Lessons learnt have been incorporated into a revised Protocol dated December 2012.
O4 To progress the recording of the site with particular reference to developing our knowledge of 'at risk' features and the research framework currently being developed by the Nominated Archaeologist and the Licensee.	Achieved. WA diving work focussed on the installation of CPs and insufficient time was available to advance the basic recording of the site. However, with the agreement of EH, recording of the site by the Licensee has focused largely on surface recovery of finds observed to be at risk and observations have been made with regard to a short- term cycle of erosion and deposition that is not apparent in longer-term bathymetric difference analysis. Although the research framework is not yet complete, elements of it have informed decisions made with regard to surface recoveries, for example in respect of the importance of human remains.
O5 To facilitate the up-skilling of the avocational divers currently involved in the investigation of the site.	Achieved with the assistance of Alison James. The Licensee has received guidance throughout, including with regard to: the selection of finds for surface recovery; completion of recording forms; in situ and post-recovery photography; recovery methods; temporary storage; and placement of CPs. In 2013 the Licensee will receive on site advice and guidance from the Nominated Archaeologist about measured survey based upon the Protocol.
O6 To provide guidance to community groups engaged in	Achieved. The Protocol document will constitute the publicly accessible product and will be available through

conservation management of this and similar sites in the form of publicly accessible documentation that assists with reporting, recording and conserving archaeological material.	EH. It has been designed to enable it to be modified in the light of future experience on site. Advice to EH concerning the adaption of the Protocol to other sites is given in this document. The availability of this document will be advertised by EH at their discretion and by means of an NAS Newsletter article compiled as a product of this project.
O7 Advice with regard to the benefits of wider community engagement during Execution Stages 2 and 3.	Partially achieved. The local museum service has become actively involved through the project. The WA Project Officer delivered a public talk there during the course of Executive Stage 1, building upon a series of public presentations delivered to local audiences previously. The site has an existing media profile but an approach on behalf of the BBC to prepare a short feature on the work could not be facilitated due to lack of time, but it is hoped that this will occur in the future. The Project Officer will present the project to a mixed professional and avocational audience in January 2013, in addition to the newsletter article mentioned above. The advice of L&A staff with regard to future community engagement is in Appendix 5.

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Acknowledgements

This document was commissioned by English Heritage as part of the NHPP funded *Managing change on wreck sites through community-based recording: The London recording project* (EH 6400). Wessex Archaeology would like to acknowledge the assistance of English Heritage's Helen Keeley, Mark Dunkley, Angela Middleton and in particular Alison James, whose involvement in the project has proved crucial.

Wessex Archaeology would also like to thank the following:

- Steve Ellis, Site Licensee, and his team, who participated in the development and trial of the Recording Protocol;
- Ken Crowe and Clare Hunt of Southend Borough Council Museum Service and SMR, who participated in the development of the Recording Protocol;
- Capital Pleasure Boat Services and the crew of their diving support vessel *Shake Dog*, who facilitated the diving project;
- The Port of London Authority, whose reprocessed multibeam survey data has been used in Figures 2 and 3.

The diving project was carried out by Mark Dunkley, Kevin Stratford, Dan Pascoe and Graham Scott. Alison James assisted.

Graham Scott acted as the Project Officer and compiled this document with the assistance of those mentioned above. Appendix 5 was written by former WA Learning and Access Officer Sarah Phillips. Quality control was provided by Nikki Cook. Kitty Foster prepared the illustrations and the project was managed for Wessex Archaeology by Graham Scott and Nikki Cook.

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Figure 1	Site Location
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Figure 2Site 1 CP locationsFigure 3Site 2 CP locations

Back Cover Flyer for community engagement talk at Southend Museum

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1 BACKGROUND

- 1.1.1 Wessex Archaeology (WA) was commissioned by English Heritage (EH) in March 2012 to undertake a project entitled "Managing change on wreck sites through community-based recording: The *London* recording project". The project was funded through the National Heritage Protection Commissions Programme under Activity 4H1.203.
- 1.1.2 This project was concerned with developing a practical community-based model or protocol for recording 'at risk' designated wreck sites which experience difficult environmental or other conditions. The chosen site was the *London* in the Thames Estuary off Southend (**Figure 1**).
- 1.1.3 The major second rate warship *London* was built by the Commonwealth government in 1654-6. It was lost in the service of Charles II in 1665 as a result of an accidental magazine explosion, sinking with the loss of most of those onboard. Subject to some salvage and clearance operations shortly thereafter and in the late 20th century, the wreck of the *London* was designated under the Protection of Wrecks Act (1973) in 2008 following the salvage of at least two bronze cannon from the site. Working under the direction of EH, WA carried out short phases of survey and other archaeological work on the site in 2009-12. During this time the wreck came to both local and national prominence and was featured in television documentaries.
- 1.1.4 The wreck is spread across two sites which are both are rich in archaeology (Figures 1-3). Parts of the ship's hull and internal fittings survive, together with a large quantity of delicate archaeological material including barrels, rope and leather shoes. Human remains are also frequent finds and, very unusually, have included women who were probably the wives or 'girlfriends' of the crew. As a result the *London* is amongst the most important post-medieval maritime sites in the UK.
- 1.1.5 The environment of the sites presents a severe challenge in terms of both preservation and archaeological work. Strong currents render them undiveable for all but very short 'slack water' periods and work is further restricted and slowed by underwater visibility that varies between very poor and non-existent. The impact of biological decay and corrosion, together with localised erosion caused by strong currents, is exacerbated by the fact that much delicate archaeological material including human remains is lying exposed on the seabed. In addition the sites are very close to the main commercial shipping channel.
- 1.1.6 Traditional responses to 'at risk' sites that involve stabilisation or excavation are thought to be impracticable for the *London*. Instead EH envisages a community-based approach based upon a programme of 'conservation management' in which monitoring and recording is undertaken largely by avocational divers, supported by professional guidance and mentoring. This approach allows for increased community engagement and facilitates a degree of site recording and the retrieval of finds which are believed to be at risk of loss.
- 1.1.7 It is envisaged that activities associated with conservation management on selected 'at risk' wreck sites will be largely undertaken by community groups under licence, with some

professional archaeological involvement. The information generated by a conservation management programme will also allow closer monitoring of the stability or deterioration of 'at risk' sites, thus directly informing the management strategy for wrecks within these and other marine environments.

1.1.8 An enthusiastic licensed team of local recreational divers has become involved with the *London*. They have become English Heritage Affiliated Volunteersand are keen to investigate and record the wreck for the benefit of the local community. Having no previous archaeological experience, they requested support and guidance. The project therefore aimed to provide them with an organised system of recording that was tailored to both their level of experience and the particular demands of the sites, as well as promoting community participation and management. It was also hoped to that the project would help provide a model solution for similar sites.

2 ASSOCIATED REPORTS AND DEFINITIONS

- 2.1.1 It is intended that this report should be read in conjunction with the Archaeological Protocol document. As this is an iterative document that may be modified by the local team in the light of post-project experience, the document that should be referred to in reading this report is WA document code 83940.05 (WA 2012d). The document has been renamed the 'Recording Protocol' but is generally referred to in this document as the 'Protocol'.
- 2.1.2 Use of the term 'Licensee' in this report refers to the *London's* current survey and surface recovery licence holder, Steve Ellis, together with his team of licensed divers and other helpers.

3 OBJECTIVES

- 3.1.1 As part of a conservation management approach to the *London*, the project aimed to:
 - Establish a community-based method of recording the *London* sites that is capable of being used as a model for the conservation management of similar 'at risk' wreck sites;
 - Encourage community participation and management of the site.
- 3.1.2 The specific objectives of the project were as follows:
 - O1 To design and develop an Archaeological Protocol for Community-Based Recording ('Archaeological Protocol') for the *London* that is capable of being used and developed by current and future avocational divers/groups to record and monitor the wreck and to recover 'at risk' finds;
 - O2 To install survey infrastructure in the form of survey control points/datums (CPs) on one or both sites;
 - O3 To trial the Archaeological Protocol on one or both sites;
 - O4 To progress the recording of the site with particular reference to developing our knowledge of 'at risk' features and the research framework currently being developed by the Nominated Archaeologist and the Licensee;

- O5 To facilitate the up-skilling of the avocational divers currently involved in the investigation of the site;
- O6 To provide guidance to community groups engaged in conservation management of this and similar sites in the form of publicly accessible documentation that assists with reporting, recording and conserving archaeological material.
- O7 Advice with regard to the benefits of wider community engagement during Execution Stages 2 and 3.

4 METHODOLOGY

Site Investigation Plan

- 4.1.1 The diving project during Execution Stage 2 was carried out in accordance with a Site Investigation Plan (SIP; Product P1; WA 2012b). This document included the following:
 - Survey infrastructure design (the proposed location of CPs to be installed during the project);
 - Identification of high priority areas for the recording trial;
 - Other site and trail specific methodology;
 - Diving Project Plan (DPP);
 - Project-specific risk assessment.

Diving

- 4.1.2 The diving project was carried out by a four person WA team using surface supplied diving equipment. Mark Dunkley of EH was embedded within the team as a diver and tender.
- 4.1.3 Both sites suffer from zero or very poor visibility due to particulate matter in the water column and from very strong tidal currents. Surface supplied diving equipment was therefore chosen on the basis of both safety and operational efficiency.
- 4.1.4 Slack water periods roughly correspond with high and low water and rarely exceed 60 minutes in length, often considerably less during spring tides. The timing of slack can be unpredictable and different currents can be experienced on the surface and on the bottom. Furthermore both sites are very close to the busy Yantlet commercial shipping channel. The *London* therefore represents a very challenging diving environment from both health and safety and work efficiency perspectives.
- 4.1.5 The diving operation complied with the Diving at Work Regulations 1997 and the Scientific and Archaeological Approved Code of Practice. The diving operation was also subject to the Port of London Authority's work permit system and was undertaken in daylight hours only. Neither a PLA River nor an MMO licence was required.

Installation of Control Points

- 4.1.6 The approximate location of the CPs to be installed was planned and agreed with the Licensee and EH in advance. Choice was based upon the following criteria:
 - The need to provide CP coverage across the whole of each site to support future survey;
 - The need to provide CP coverage that would assist individual surface recoveries during the diving project;

- The location of erosion identified by long-term difference analysis (WA 2011, 2012a and c) and localised short-term erosion observed by the Licensee.
- 4.1.7 All of the locations at which CPs were installed were in areas of soft sediment without visible archaeological features. Therefore sharpened steel rods were used, although large galvanised nails were also available. A yellow survey tag was securely attached by heavy duty cable tie through a hole drilled in the head of each rod. Each tag was inscribed with an agreed unique identifying number recorded by both WA and the Licensee.
- 4.1.8 The following methodology was adopted:
 - The diver descended to the bottom of the shot and attached a search line to it. Using the acoustic tracking system the diver was then directed to the first CP location;
 - After inspecting the location the diver determined which type of CP to use and then installed it by hand, using a lump hammer as driver;
 - Between 20 and 50 positions were then recorded for the CP using an acoustic positioning system, with a final position being generated automatically by DIVAs 'accurate fix' standard deviation system;
 - The diver then moved on to the next location.
- 4.1.9 The acoustic positioning system used was a state of the art Sonardyne Scout Ultra-Short Baseline (USBL) acoustic tracking system, operated with an external gyrocompass, motion reference unit and survey standard dGPS. Manufacturer's quoted accuracy for the system is 0.25% of slant range (distance between diver-mounted transponder and vesselmounted transceiver). Past experience during similar work suggests that accuracy of less than 0.2m can be achieved, with a maximum error budget unlikely to exceed 1.0m. Data produced by the Scout system, together with other archaeological, environmental and operational data produced by WA divers, was recorded in real time using WA's GIS-based DIVA recording system.

Archaeological Protocol Trial

- 4.1.10 Surface recoveries and other survey work undertaken by the Licensee and his team during the diving project were undertaken in accordance with the first draft of the Archaeological Protocol (WA document 83940.03). Licensee and EH feedback from the trial and from WA monitoring of subsequent Licensee diving work has been incorporated into final version of the Archaeological Protocol (WA document 83940.05).
- 4.1.11 The licensed team present during fieldwork consisted of Licensee Steve Ellis, Carol Ellis and Steve Meddle. Although they dived from their own RIB and used a separate shot, for safety reasons this was done with the boat alongside *Shake Dog*. Licensee diving was undertaken as a separate operation. As the divers were not at work it was otherwise undertaken in accordance with their normal dive procedures for the *London*. The team does not regard diving in buddy pairs as offering any safety advantage on this site and therefore dive alone, although more than one may be in the water at the same time.
- 4.1.12 Recording of surface recoveries and the completion of recording forms was undertaken onboard *Shake Dog.* Guidance and support was provided by WA Project Officer (and Nominated Archaeologist) Graham Scott and by Alison James of EH.

Monitoring Meetings

4.1.13 Two monitoring meetings with the Licensee following the diving project were held at the Licensee's home in Southend. It had been hoped that the Project Officer could be present

when the licensee was diving. However, this did not prove to be practicable and was not in any event necessary for effective monitoring.

4.1.14 The Project Officer hopes to dive as a volunteer with the Licensee as his Nominated Archaeologist in 2013. It should be noted that this was not possible for the Project Officer to dive with the Licensee during monitoring as it would then have come under the Diving at Work Regulations. This would not have been practicable and was not envisaged in the project design.

5 SUMMARY OF RESULTS

5.1 Executive Stage 1

Objectives

5.1.1 Execution Stage 1 comprised the following tasks:

Execution Stage	Tasks	Product
1	Commission, team meeting, drafting of Archaeological Protocol.	P1 – Site Investigation Plan P2 – Archaeological Protocol (draft)

Narrative

- 5.1.2 Following commission WA began preparation of the draft Protocol and planning for the diving project to take place during Execution Stage 2. Contact was made with Alison James of EH, the Licensee Steve Ellis and with Ken Crowe and Clare Hunt of Southend Borough Council (SBC) Museum Service and SMR.
- 5.1.3 A meeting between the above parties was held at Southend Museum on 12th July 2012 at which the proposed contents of the Protocol and the site investigation plan were discussed. The presence of Southend Museum and SMR staff and a representative of EH's conservation staff enabled an agreement to be reached with regard to how finds from the site were to be dealt with. This was subsequently incorporated into the first draft of the Protocol.
- 5.1.4 The first draft of the Protocol (P1) was issued on 6th September 2012. Although this was somewhat later than hoped, the document subsequently proved suitable for the trial. The Site Investigation Plan (SIP; P2) was issued on 4th September. This incorporated the Diving Project Plan (DPP), which included a risk assessment of the planned diving.
- 5.1.5 Alison James agreed to liaise with the Essex Police with regard to reporting requirements in respect of human remains. Following further liaison that culminated in a meeting between Police contact PC Andy Jones and the Licensee during Execution Stage 3, a reporting arrangement was agreed which has been incorporated into the final version of the Protocol.
- 5.1.6 The WA project officer gave a talk at Southend Museum on the *London* and its importance to the local history group as part of the Museum's public programme initiative on 1st August 2012. This talk built on a series of talks already given to local and North Kent audiences on the *London* investigations and is reported to have been well received.

Results

5.1.7 Products P1 (draft) and P2 were completed. Otherwise there were no formal results.

5.2 Executive Stage 2

Objectives

5.2.1 Execution Stage 2 comprised the following tasks:

Execution Stage	Tasks	Product
2	Planning of diving project; execution of diving project (installation of survey infrastructure, upskilling of avocationals and trialling of protocol); initial stage monitoring of subsequent Licensee recording.	No formal product

Narrative

- 5.2.2 It had originally been intended to undertake the diving project using a vessel already mobilised for another contract managed by EH and the project had been costed on that basis. The diving project was initially scheduled for 21-26th July. However, the difficult weather conditions experienced during spring and early summer and a very poor long-term forecast meant that the decision was taken to postpone operations until late August or September.
- 5.2.3 This decision inevitably impacted upon the original timetable for both Execution Stages 1 and 2, with the completion of the latter being pushed back to end September 2012. In reality the division between Execution Stages 2 and 3 proved to be somewhat theoretical and the delay has had no impact upon the overall project length.
- 5.2.4 This necessitated the use of a local vessel as the costs of remobilising the original vessel from a remote base were prohibitive. The high demand for local vessel services due to the London Olympics and activities associated with the construction of offshore windfarms, together with existing WA staff commitments also meant that it was not possible to schedule the five day diving project until a suitable vessel became available in early-mid September.
- 5.2.5 A diving project took place on 10-14th September. A narrative log of activity during the diving project is annexed as **Appendix 1**. Alison James and Mark Dunkley were present on the DSV on 11-13th September. The Licensee undertook surface recovery work on 11-12th September and the Protocol was therefore trialled on these days, with the Licensee and his team recording recovered finds with the assistance of WA and EH onboard the DSV. The Licensee was unable to work on 13th September. In addition Ken Crowe and Clare Hunt of SBC Museum and SMR visited the site on 11th September with the Licensee.
- 5.2.6 Very early stage monitoring of the Licensee's subsequent work on site was undertaken by regular telephone calls and emails, with the Licensee reporting further dives and providing photographs and/or recording forms as they were undertaken. A monitoring meeting took place on 1st October when Project Officer Graham Scott and WA Learning and Access Officer Sarah Phillips met with the Licensee at his home to discuss his progress, potential changes to the Protocol and opportunities for dissemination activities and external funding.

Results

5.2.7 A total of six control points were installed and positioned on Site 1. The distribution was in accordance with the provisional CP network (SIP Appendix 2). It was decided on site that

a CP was not required in position 1 due to the proximity of a CP installed in May 2012 and an additional CP was installed between positions 6 and 4. In addition a Licensee CP (202) attached to a cannon within 4038 was positioned. The positions of these CPs, together with those installed during work in May 2012, are shown in **Figure 2** and co-ordinates are listed in **Appendix 2**. The Licensee did not dive Site 1 during the course of the diving project.

- 5.2.8 A total of eight control points were installed and positioned on Site 2. The distribution was also in accordance with the provisional CP network, with the exception that an additional CP (2321) was installed on the south-east side of the site. In addition the prominent anchor ring and navigational mark for divers 4020 and tag 2046 was positioned. The positions of these CPs are shown in **Figure 3** and co-ordinates are listed in **Appendix 2**.
- 5.2.9 Archaeological results acquired by WA during the fieldwork trial have been limited to the surface recoveries (**Appendix 3**). However, continuous helmet-mounted colour CCTV camera footage was recorded during each WA dive. This constitutes a partial visual record of both sites linked to acoustic tracking and is therefore capable of being analysed for archaeological use.
- 5.2.10 The Licensee and his team undertook four dives during the trial (**Appendix 1**). The Licensee had previously been issued with a surface recovery licence. With the agreement of EH it was decided to prioritise finds recovery during the Licensee's dives to ensure that he and his team would be confident and knowledgeable enough to recover finds subsequently.
- 5.2.11 A total of 11 finds were recovered during these dives. These are listed in **Appendix 3**, which is derived from the Licensee's own Artefact Register and Record Sheets. Example dive logs (8001 and 8004) are included in **Appendix 4**. Record forms for the finds and the dives were compiled on site. Advice and guidance was given during this process by WA and EH staff.
- 5.2.12 A short report upon community engagement arising out of the monitoring meeting on 1st October and other work is annexed as **Appendix 5**. Feedback was given on the Licensee recording forms received by WA and with regard to the standard of *in situ* and post-recovery finds photography.

5.3 Executive Stage 3

Objectives

5.3.1 Execution Stage 3 comprised the following tasks:

Execution Stage	Tasks	Objectives	Product
3	Further monitoring; review of results and drafting of technical report and final protocol document; preparation of archive.	O3-6	 P2 – Archaeological Protocol (final) P3 – Technical Report P4 – GIS Layers P5 – OASIS Report P6 – Draft NAS Newsletter article P7 – Project Archive

Narrative

5.3.2 Due to the delay in undertaking the diving project and the fact that the Licensee continued diving on the site into November 2012(**Appendix 6**), monitoring was not completed until

7th December. This was generally by email and telephone, although a meeting was held at the Licensee's home on 5th December. Subsequently Products P2-7 have been prepared.

5.3.3 The final version of the Protocol (P2) has been compiled with further comments from the Licensee, EH and SBC Museum Service and SMR. The draft NAS Newsletter article (P6) has been approved by the Licensee.

Results

- 5.3.4 The results of Execution Stage 3 are products P2-7. A draft article for submission to the NAS Newsletter (P6) is annexed as **Appendix 7** (P2 is not annexed due to its greater length). Product P4 consists of shapefiles with MEDIN metadata of the positions of control points installed during the diving project.
- 5.3.5 The Licensee has received further advice and guidance with regard to his recording work. He has surface recovered a total of eight additional finds, including human remains.

5.4 Summary

5.4.1 Progress against objectives during the project can be summarised as follows:

Aim	Progress
Establish a community-	Achieved. The Protocol represents a simple, pragmatic
based method of recording	and accessible structure for local volunteers to record the
the London sites that is	site with the assistance of the local museum service and
capable of being used as a	SMR. It meets current archaeological standards and is
model for the conservation	capable of being adapted for use on similar sites. It will
management of similar 'at	have particular application to new sites and inexperienced
risk' wreck sites;	avocational archaeologists.
Encourage community participation and management of the site.	Achieved. The Protocol has been devised and trialled with the assistance of the existing local Licensee and his team and with the active assistance of the local museum service and SMR. By providing an easy, accessible recording system it encourages community participation. By facilitating this and involving local curators and heritage managers it promotes both local management and co- operation with EH. The local and national profile of the site is also being raised by public presentation and publication.
Objective	Progress
Objective O1 To design and develop an Archaeological	Progress
Objective O1 To design and develop an Archaeological Protocol for Community-	Progress Achieved. The contents of the Recording Protocol have
Objective O1 To design and develop an Archaeological Protocol for Community- Based Recording	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee
Objective O1 To design and develop an Archaeological Protocol for Community- Based Recording ('Archaeological Protocol')	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of
Objective O1 To design and develop an Archaeological Protocol for Community- Based Recording ('Archaeological Protocol') for the London that is	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface
Objective O1 To design and develop an Archaeological Protocol for Community- Based Recording ('Archaeological Protocol') for the London that is capable of being used and	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been
Objective O1 To design and develop an Archaeological Protocol for Community- Based Recording ('Archaeological Protocol') for the London that is capable of being used and developed by current and	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been designed so that it is capable of use by other investigators
Objective O1 To design and develop an Archaeological Protocol for Community- Based Recording ('Archaeological Protocol') for the London that is capable of being used and developed by current and future avocational	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been designed so that it is capable of use by other investigators and is intended to be iteratively modified in the light of
Objective O1 To design and develop an Archaeological Protocol for Community- Based Recording ('Archaeological Protocol') for the London that is capable of being used and developed by current and future avocational divers/groups to record and	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been designed so that it is capable of use by other investigators and is intended to be iteratively modified in the light of ongoing experience.
Objective O1 To design and develop an Archaeological Protocol for Community- Based Recording ('Archaeological Protocol') for the London that is capable of being used and developed by current and future avocational divers/groups to record and monitor the wreck and to	Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been designed so that it is capable of use by other investigators and is intended to be iteratively modified in the light of ongoing experience.
Objective O1 To design and develop an Archaeological Protocol for Community- Based Recording ('Archaeological Protocol') for the London that is capable of being used and developed by current and future avocational divers/groups to record and monitor the wreck and to recover 'at risk' finds.	Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been designed so that it is capable of use by other investigators and is intended to be iteratively modified in the light of ongoing experience.
ObjectiveO1To design anddevelop an ArchaeologicalProtocol for Community-Based Recording('Archaeological Protocol')for the London that iscapable of being used anddeveloped by current andfuture avocationaldivers/groups to record andmonitor the wreck and torecover 'at risk' finds.O2To install survey	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been designed so that it is capable of use by other investigators and is intended to be iteratively modified in the light of ongoing experience. Achieved with the assistance of Mark Dunkley. A total of
ObjectiveO1To design anddevelop an ArchaeologicalProtocol for Community-Based Recording('Archaeological Protocol')for the London that iscapable of being used anddeveloped by current andfuture avocationaldivers/groups to record andmonitor the wreck and torecover 'at risk' finds.O2To install surveyinfrastructure in the form of	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been designed so that it is capable of use by other investigators and is intended to be iteratively modified in the light of ongoing experience. Achieved with the assistance of Mark Dunkley. A total of 14 CPs were installed and positioned during the diving
ObjectiveO1To design anddevelop an ArchaeologicalProtocol for Community-Based Recording('Archaeological Protocol')for the London that iscapable of being used anddeveloped by current andfuture avocationaldivers/groups to record andmonitor the wreck and torecover 'at risk' finds.O2To install surveyinfrastructure in the form ofsurvey control	Progress Achieved. The contents of the Recording Protocol have been agreed and successfully trialled by EH, the Licensee and SBC Museum Service and SMR. The agreement of this document has facilitated the issuing of surface recovery licence to the Licensee. The document has been designed so that it is capable of use by other investigators and is intended to be iteratively modified in the light of ongoing experience. Achieved with the assistance of Mark Dunkley. A total of 14 CPs were installed and positioned during the diving project. More accurate positioning of existing CPs and the

or both sites.	be required as survey of the site progresses.
O3 To trial the Archaeological Protocol on one or both sites.	Achieved on Site 2 during the diving project and during subsequent Licensee work on site. Lessons learnt have been incorporated into a revised Protocol dated December 2012.
O4 To progress the recording of the site with particular reference to developing our knowledge of 'at risk' features and the research framework currently being developed by the Nominated Archaeologist and the Licensee.	Achieved. WA diving work focussed on the installation of CPs and insufficient time was available to advance the basic recording of the site. However, with the agreement of EH, recording of the site by the Licensee has focused largely on surface recovery of finds observed to be at risk and observations have been made with regard to a short- term cycle of erosion and deposition that is not apparent in longer-term bathymetric difference analysis. Although the research framework is not yet complete, elements of it have informed decisions made with regard to surface recoveries, for example in respect of the importance of human remains.
O5 To facilitate the up- skilling of the avocational divers currently involved in the investigation of the site.	Achieved with the assistance of Alison James. The Licensee has received guidance throughout, including with regard to: the selection of finds for surface recovery; completion of recording forms; in situ and post-recovery photography; recovery methods; temporary storage; and placement of CPs. In 2013 the Licensee will receive on site advice and guidance from the Nominated Archaeologist about measured survey based upon the Protocol.
O6 To provide guidance to community groups engaged in conservation management of this and similar sites in the form of publicly accessible documentation that assists with reporting, recording and conserving archaeological material.	Achieved. The Protocol document will constitute the publicly accessible product and will be available through EH. It has been designed to enable it to be modified in the light of future experience on site. Advice to EH concerning the adaption of the Protocol to other sites is given in this document. The availability of this document will be advertised by EH at their discretion and by means of an NAS Newsletter article compiled as a product of this project.
O7 Advice with regard to the benefits of wider community engagement during Execution Stages 2 and 3.	Partially achieved. The local museum service has become actively involved through the project WA Project Officer delivered a public talk there during the course of Executive Stage 1, building upon a series of public presentations delivered to local audiences previously. The site has an existing media profile but an approach on behalf of the BBC to prepare a short feature on the work could not be facilitated due to lack of time, but it is hoped that this will occur in the future. The Project Officer will present the project to a mixed professional and avocational audience in January 2013, in addition to the newsletter article mentioned above. The advice of L&A staff with regard to future community engagement is in Appendix 5.

6 DISCUSSION

6.1 Effectiveness of the Archaeological Protocol

- 6.1.1 WA would assess the overall effectiveness of the Protocol as being good. It has been readily adopted by the Licensee and his team. Whilst he did have some concerns with regard to the time taken to complete recording forms, he has become quicker with time and no longer regards the process as being onerous.
- 6.1.2 The Licensee asked for no modification of the Protocol during the last review in early December 2012. He has since indicated that it is achievable, although he felt that if any further additions to the recording workload might not be and might discourage future work. Although it was agreed during the trial that a flow chart to identify what forms must be completed would be desirable, the Licensee subsequently stated that it was not required. However, notes on this subject have been included in the Protocol for the benefit of occasional or new members of his team.
- 6.1.3 The process of finds recovery, to be reviewed by EH in the New Year, has proceeded smoothly and the Licensee has recovered finds in appropriate situations. He also appears to be exercising a suitable degree of restraint in terms of numbers of recoveries and museum has confirmed that his packaging of finds for transit is good. He appears to have satisfied the Essex Police that he can be relied upon to report the recovery of human remains to them and he has been complying with reporting requirements in respect of the Receiver of Wreck.
- 6.1.4 The trial was successful and no major flaws in the recording system were identified subsequently. The Protocol and the trial together seem to have increased the confidence of Southend Museum staff that their role is likely to be manageable.
- 6.1.5 Overall the Licensee and his immediate team of divers have made a good start and experience has demonstrated that there are ways in which they can increase the effectiveness of the Protocol in 2013. These include:
 - Increased measurement of erosion and deposition at CPs to enhance site monitoring.
 - Avoiding the use of single measurements to record the position of recovered finds (this is related to the proximity of CPs, so many more will be required).
 - Commencing drawn and offset surveys (this will be partly facilitated by the availability of the Nominated Archaeologist).
- 6.1.6 The Licensee currently restricts the number of divers on the site at any one time. This is because he appreciates that a greater number may lead to damage and because what limited visibility there is can be eliminated by nearby diver movement. Nevertheless, if the Protocol is to be used to its full effect in terms of basic archaeological recording, in particular a much needed drawn plan of both sites, then the Licensee may have to relax his restrictions in this respect.
- 6.1.7 The Nominated Archaeologist is likely to play an important role in monitoring and maintaining the standard of ongoing recording work in 2013. His support to the Licensee is likely to be particularly important with regard to the following:
 - Facilitating completion of the Site Research Framework to provide much needed research-led direction to the Licensee's work;
 - Retaining the services of the informal advisory group of experts;

- Ensuring that good progress is made in improving the numbers of CPs and the accuracy of their positioning;
- Providing the on- and off-site support required to enable the Licensee to begin detailed planning of the site;
- Ensuring that sufficient monitoring measurements are taken at CPs to enable areas of the site prone to short-term erosion to be accurately defined and prioritised for recording;
- Providing an objective view with regard to whether finds should be surface recovered or left *in situ*;
- Providing advice and technical support to the Licensee with regard to funding applications;
- Providing technical assistance or training to the Licensee in respect of recording, for example in respect of the use of GIS and 3D survey methods;
- Providing the Licensee with advice and assistance with regard to reporting, particularly in terms of publication.

6.2 **Project Methodology**

- 6.2.1 The future survey of the sites will depend upon the availability of a very accurately plotted network of CPs. However, taking sufficient measurements to trilaterate the relative positions of these CPs will take a considerable amount of dive time and this was not available in the context of the diving project. The use of a USBL acoustic system to position the CPs therefore represents an interim solution to the need to produce both relative and absolute positions whilst undertaking the installation work. It is intended that the Licensee will gradually improve the relative positioning by measured 2D or 3D survey.
- 6.2.2 Mild steel rods have been used for the CPs. These will corrode and they will eventually have to be replaced. If experience suggests that they will not last at least five years, then it may be better to invest in stainless steel versions which will have greater longevity.
- 6.2.3 Consideration will need to be given during similar projects as to whether installing CPs represents cost-effective use of contractor time. In this case it probably did because of the difficulties of plotting their positions without acoustic tracking. However, on more benign sites with better visibility this is a task that could perhaps be left to volunteer groups, with non-diving professional support if they lack the necessary archaeological experience.

6.3 Application to other sites

- 6.3.1 Although the Protocol has been designed for the *London*, it has been designed in such a way that it can be adapted for use on other sites. It is most likely to be useful for new sites in any environment or existing sites in difficult environments. The following should be taken into account in deciding whether it should be used:
 - Is a Protocol such as this necessary? The Protocol is most likely to be effective on sites that do not already have an effective archaeological recording system in place.
 - Only the structure of the Protocol is intended to be generic. The content will need to be rewritten to make it site- and user-specific.
 - The Protocol requires willing and highly engaged participants and it will need to be designed with the users rather than for them if it is to work. Unrealistic expectations, particularly of volunteers, are likely to be demotivating.
 - The archaeological training and experience of the users is a vital consideration. The recording methodology should not be aspirational but rather tailored to their level of experience.
 - The Protocol should be designed so that archaeological results can be produced from the outset. An overlong preparatory period, for example by insisting on the

completion of a CP network before survey or recovery work can begin, is likely to be demotivating.

- The willing involvement of local curators and archaeologists is important, particularly if finds are expected to be recovered. The Protocol users are likely to be motivated by their involvement. Local curators are most likely to wish to become involved if expectations concerning their role are realistic in terms of staff time and financial resources and they are properly briefed.
- Long-term work on a site will require some form of research framework to identify and prioritise archaeological work and to motivate the users.
- Adoption of the Protocol and the close involvement of EH or other heritage managers in its formulation may create an expectation amongst users of continuing support. EH should be ready to provide advice concerning external funding sources.
- The support of a suitably experienced professional archaeologist from an early stage may make the difference between the long-term success or failure of a Protocol, particularly if the users are inexperienced or time-poor.

6.4 Dissemination

6.4.1 Dissemination and community engagement issues are discussed in **Appendix 5**.

7 **RECOMMENDATIONS**

7.1 Site specific

- 7.1.1 A research framework should be integrated into the Protocol as soon as possible.
- 7.1.2 The Licensee hopes to begin survey of Site 2 in 2013 and further finds are likely to be recovered. Greater emphasis will therefore be required in 2013 on the installation and positioning of further and existing CPs. A more systematic approach to monitoring measurements and observations would also be valuable in terms of prioritising this recording.
- 7.1.3 The Project Officer will be discussing with EH the possibility of temporarily retaining P7, the project archive, as Nominated Archaeologist.
- 7.1.4 The harsh site environment is gradually taking a toll of the Licensee's diving, RIB and survey equipment. In addition they have incurred significant expense during fieldwork and lack funding to obtain survey equipment and software and training that has the capability to significantly enhance their capabilities. Although the Licensee readily acknowledges that he is a volunteer, a modest grant for equipment purchase and repair and for further NAS training could nevertheless make a significant difference in terms of future recording progress.

7.2 Application to other sites

- 7.2.1 It is recommended that EH should assess what sites currently under investigation may benefit from the adoption of a similar Protocol. Sites that have potential investigators who have little archaeological experience, those that have existing investigators who are failing to produce results or those which have investigators wishing to build local partnerships are most likely to benefit.
- 7.2.2 During undesignated site assessment work, consideration could be given to instructing the contractors to either recommend whether a Protocol is required or to actually draft the Protocol. The latter could be part of or subsequent to the assessment process.

Consideration could also be given to asking the contractors to install survey infrastructure during fieldwork, provided there is a reasonable expectation that it will be used.

7.3 Dissemination

7.3.1 Recommendations concerning dissemination and other community engagement are discussed in **Appendix 5**.

8 **PROJECT ARCHIVE**

8.1.1 The project archive consisting of a hard copy file and computer records, together with mini-DV tapes, dive logs and miscellaneous hardcopy illustrations is currently stored at WA under project code 83940.

9 **REFERENCES**

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APPENDIX 1: DIVING PROJECT ACTIVITY LOG

Date	Activity
10/09/2012	Mobilisation of DSV from central London to shore base at Denton Wharf,
	Gravesend (berthing at Sheerness refused at late notice).
	Mobilisation of WA dive team and equipment from WA Salisbury.
	Loading and set-up of dive and survey equipment on DSV.
	Mobilisation of Alison James and Mark Dunkley.
11/09/2012	06:00 on shift, DSV departs shore base for transit to site;
	WA Dive 1 (Pascoe; in-water 15:30; 38 minutes; installing CPs on Site 2);
	Licensee Dive 8000* (Steve Ellis; surface recovery trial);
	Licensee Team Dive 8001 (Steve Meddle; surface recovery trial);
	Surface recording of recovered finds and dives using Protocol forms;
	Visit of SBC Museum and SMR staff to site with Licensee;
	DSV transit site to shore base, alongside and off-shift 19:15.
12/09/2012	06:00 on shift, DSV departs shore base for transit to site;
	WA Dive 2 (Pascoe; in-water 09:55; 57 minutes; installing CPs on Site 2);
	WA Dive 3 (Dunkley; in-water 16:35; 54 minutes; completed installation of CPs on
	Site 2);
	Licensee Team Dive 8002 (Steve and Carol Ellis; surface recovery trial);
	Licensee Team Dive 8003 (Steve Meddle; surface recovery trial);
	Surface recording of recovered finds and dives using Protocol forms;
	DSV transit site to shore base, alongside and off-shift 20:15.
13/09/2012	07:00 on shift, DSV departs shore base for transit to site;
	WA Dive 4 (Scott; installing CPs on Site 1);
	DSV transit site to shore base;
	EH staff demobilised (Mark Dunkley takes surface recovered finds to EH);
	Unloading DSV;
	Off-shift 16:15.
14/09/2012	DSV demobilised; WA team demobilised.

*Dive numbers from a block of numbers beginning with 8000 allocated under the Protocol.

APPENDIX 2: CONTROL POINT POSITIONS (WGS 84)

Site 1

Control Point	Latitude	Longitude
2028	N 51 29.737440	E 0 44.39610
2312	N 51 29.737620	E 0 44.39646
2314	N 51 29.738580	E 0 44.39364
2323	N 51 29.728440	E 0 44.38908
2324	N 51 29.732700	E 0 44.38746
2325	N 51 29.735340	E 0 44.39130
2326	N 51 29.733480	E 0 44.39112
2327	N 51 29.731199	E 0 44.38626
2328	N 51 29.731020	E 0 44.39214
4005 (upstanding knee)	N 51 29.727240	E 0 44.39004
202 (Licensee CP)	N 51 29.733720	E 0 44.39238

Site 2

Control Point	Latitude	Longitude
2034	N 51 29.74056	E 0 44.03238
2310	N 51 29.73414	E 0 44.01654
2311	N 51 29.74164	E 0 44.02452
2313	N 51 29.73474	E 0 44.01570
2316	N 51 29.73924	E 0 44.01798
2319	N 51 29.73534	E 0 44.02092
2320	N 51 29.74206	E 0 44.02962
2321	N 51 29.73894	E 0 44.02992
2046 (existing tag)	N 51 29.73858	E 0 44.02434
4020 (anchor ring)	N 51 29.73930	E 0 44.02866

APPENDIX 3: ARTEFACT RECOVERIES, EXECUTION STAGE 2 DIVING PROJECT

The following Artefact Register and Artefact Record Sheets were completed during and after the trial of the Protocol during the Diving Project. All finds were recovered by the Licensee.

The Lor	ndon Reco	rding	Project			Artefact Register					
Object	Context	Draw	/ing No.	Phot	o No.	Material	Description	Action	Current		
No.	No.	In	Surface	In	Surface			following	location		
		situ		situ				recovery			
3036	Surface find	x	No	Yes	Yes	Human bone	Femur	Recorded on site; kept in fresh container	EH		
3037	Surface find	x	No	Yes	Yes	Pottery	Stoneware jug (Frechen/Bartm ann); not complete (handle and neck missing)	Recorded on site; kept in seawater container	EH		
3038	Surface find	x	No	Yes	Yes	Human bone	Cranium	Recorded on site; kept in fresh container	EH		
3039	Surface find	Х	No	Yes	Yes	Pewter?	Broken handle?	Recorded on site; kept in fresh container	EH		
3040	Surface find	x	No	Yes	Yes	?bronze	Seal	Recorded on site and kept in fresh water	EH		
3041	Surface find	x	No	Yes	Yes	bronze	dividers	Recorderd on site and kept in fresh water	EH		
3042	Surface find	x	No	Yes	Yes	clay	Clay pipe bowl	Recorded on site and kept in fresh water.	EH		
3043	Surface find	x	No	Yes	Yes	alloy	Unidentified metal object	Recorded on site and kept in fresh water	EH		
3044	Surface find	x	No	Yes	Yes	Human bone	Femur	Recorded on site and kept in fresh water.	EH		
3045	Surface find	x	No	Yes	Yes	Human bone	Femur	Recorded on site and kept in fresh water.	EH		
3046	Surface find	x	No	Yes	Yes	Leather	Large piece of leather	Recorded on site and kept in fresh water.	EH		

The Lona	The London Recording Project					Artefact Record Sheet				
Artefact	3036	Reco	overed	Yes	Date		11/09/2012	Recorded	Steve Ellis	
No.					recor	ded		by		
Drawing	Х	Phot	ograph			Survey		8000		
Nos.		Nos.					Record/Dive Log			
					No.					
In situ co	-	Lat	No		Long	g No		Adjusted	16.2m (not adjusted)	
ordinates	if				_			depth		
available										
Description Adult human femur. Probable male < 35 years old.										
(size, sha	pe,				-					

completeness,	47cm south of CP 2045 on surface of fine silt. East of main wreckage on Site
material,	2. No other finds seen near by. The femur 400mm long
unusual	
features,	
function)	
Sketch	No
Treatment on	Minimum handling. Placed in waterproof container with fresh water for
site	transport.
Conservation	Transferred to EH on site.
assessment	

The Londor	The London Recording Project				Artefact Record Sheet					
Artefact	3037	Reco	Recovered Yes		Date		11/09/2012	Recorded	Steve	
No.					record	ded		by	Ellis	
Drawing		Phot	ograph			Surve	У			
Nos.		Nos.				Recor	d/Dive Log			
						No.				
In situ co-		Lat		No	Long	No		Adjusted	15.9m not	
ordinates if								depth	adjusted	
available		_								
Description	Incomplete broken bottle, handle and neck missing. Mottled brown glase									
(size, shape,		stoneware, rhenish/bartmann form. Apllied moulded relief on main								
completene	ess,	body,handle missing no sign of missing peice on sea bed.								
material, ur	nusual									
features, fu	nction)	Under timber frame 2046.								
		Meas	suremen	ts from CF	Ps:					
		2046	– 44.0 c	m						
		2044	- 134.6	cm						
Sketch		No								
Treatment of	on site	Freshwater container								
Conservatio	on	Tran	Transferred to EH							
assessmen	t									

The London Recording Project					Artefact Record Sheet					
Artefact	3038	Recovered Yes/		Yes/	Date 11		11/9/12	R	lecorded	Steve
No.					record	ded		b	y	Meddle
Drawing		Phot	tograph			Surve	у		8002	
Nos.		Nos.				Recor	d/Dive Log	g		
						No.				
In situ co-or	dinates	Lat	No		Long	No		A	djusted	
if available								d	epth	
Description		Inco	mplete h	uman craniu	ım foun	d in 13	.9m of wa	tei	ſ	
(size, shape,	I	2035 – NE 50cm								
completenes	ss,									
material, uni	usual									
features, fun	ction)									
Sketch		No								
Treatment o	n site	Plac	ed in free	sh water and	l covere	d over				
Conservatio	n	Tran	sferred t	o EH						
assessment	sessment									

 The London Recording Project
 Artefact Record Sheet

Artefact No.	3039	Recovered		No	Date record	ded	11/9/12	Recorded by	Steve Meddle
Drawing Nos.		Photograph Nos.				Survey Record/Dive Lo No.		8002	
In situ co-oro if available	dinates	Lat No			Long	No		Adjusted depth	13.9m
Description (size, shape, completenes material, unu features, fun	ss, Isual ction)	A possible broken handle with a hinge detail. Could be pewter? 2035 – 50cm NW					er?		
Sketch		No							
Treatment on site Placed in fresh water and covered									
Conservation assessment	n	Transferred to EH							

The London Recording Project					Artefact Record Sheet				
Artefact	3040	Recovered		Yes	Date		12/09/2012	Recorded	CE
No.					record	ded		by	
Drawing		Phot	ograph	0051		Survey Record/Dive		e 8002	
Nos.		Nos.		0052		Log N	0.		
In situ co-or	dinates	Lat			Long			Adjusted	
if available								depth	
Description		Bror	ize ring l	ike seal.					
(size, shape	,	95 c	ms from	2038 tag f	from Nort	h to So	outh.		
completenes	SS,	Bird	like feat	ure on fac	e of the r	ing.			
material, un	usual	(sub	sequentl	y determi	ned to be	e a pipe	e tamper)		
features, fur	nction)								
Sketch		No							
Treatment o	n site	Placed in fresh water							
Conservatio	n	Tran	Transferred to EH						
assessment									

The London	The London Recording Project				Artefact Record Sheet				
Artefact	3041	Recovered		Yes	Date		12/09/2012	Recorded	CE
No.					record	ded		by	
Drawing		Phot	ograph	0053		Surve	y Record/Div	e 8002	
Nos.		Nos.				Log N	0.		
In situ co-or	dinates	Lat			Long			Adjusted	
if available								depth	
Description Navigation dividers a			ividers ap	prox 10.5	icms le	ength and 2.5	cms width.		
(size, shape	,	2 metres E of control point 2050.							
completene	SS,								
material, un	usual								
features, fur	nction)								
Sketch		No							
Treatment o	n site	Plac	ed in fres	sh water					
Conservatio	n	Transferred to EH							
assessment									

The London Recording Project	Artefact Record Sheet

Artefact	3042	Reco	overed	Yes	Date		12/09/2012	Recorded	CE
No.		ĺ			record	ded		by	
Drawing		Phot	ograph	0054		Survey Record/Dive		e 8002	
Nos.		Nos.				Log N	0.		
In situ co-or	dinates	Lat			Long			Adjusted	
if available								depth	
Description		Clay	Clay pipe bowl						
(size, shape	,	80cn	ns from 2	2050 toward	ls NW				
completene	SS,	ĺ							
material, un	usual	ĺ							
features, fur	nction)	ĺ							
Sketch		No							
Treatment o	n site	Plac	ed in fre	sh water					
Conservatio	n	Tran	sferred t	O EH					
assessment	:								

The London	Recordi	ng Pro	oject		Artefact Record Sheet					
Artefact	3043	Reco	overed	Yes	Date	12/09/2012		Recorded	CE	
No.					record	ded		by		
Drawing		Phot	ograph	0055		Surve	y Record/Div	e 8002		
Nos.		Nos.				Log N	0.			
In situ co-or	dinates	Lat			Long			Adjusted		
if available								depth		
Description	cription Unidentified metal object									
(size, shape	,	Rou	nded –ap	pears to h	ave a sc	rew th	read.			
completene	SS,	See	photo							
material, un	usual	82cn	ns from	control 20	50 in ?N	W dire	ction.			
features, fur	nction)									
Sketch		No								
Treatment o	n site	Plac	ed in fres	sh water						
Conservatio	n	Tran	Transferred to EH							
assessment	1									

The London	Recordi	ng Pro	ject		Artefact Record Sheet					
Artefact	3044	Reco	vered	Yes	Date	e 12/09/2012		Recorded	CE	
No.					record	ded		by		
Drawing		Phot	ograph	0056		Surve	y Record/Div	e 8002		
Nos.		Nos.	_			Log N	0.			
In situ co-or	dinates	Lat			Long			Adjusted		
if available								depth		
Description		Human femur								
(size, shape	,	1metre from control point 2050 towards NW.								
completene	SS,									
material, un	usual									
features, fur	nction)									
Sketch		No								
Treatment o	n site	Place	ed in fres	sh water						
Conservatio	n	Tran	sferred t	o EH						
assessment										

The London	Recordi	ng Project		Artefact Record Sheet					
Artefact	3045	Recovered	Yes	Date	12/09/2012	Recorded	CE		

No.					recor	ded		by		
Drawing Nos.		Phot Nos.	ograph	0057		Survey Record/Dive Log No.		8003		
In situ co-or if available	dinates	Lat			Long			Adjusted depth	16.1 m	
Description Human femur										
(size, shape	,	6.2 n	2 metres from control point 2044 to the W.							
completene	SS,									
material, un	usual									
features, fui	nction)									
Sketch		No								
Treatment o	n site	Plac	ed in fre	sh water						
Conservatio	n	Tran	sferred t	o EH						
assessment	:									

The London	Recordi	ng Pro	oject		Artefact Record Sheet					
Artefact	3046	Reco	overed	Yes	Date	12/09/2012		Recorded	CE	
No.					record	bed		by		
Drawing		Phot	ograph	0058		Surve	y Record/Div	e 8003		
Nos.		Nos.	-			Log N	0.			
In situ co-or	dinates	Lat		Long			Adjusted			
if available					_			depth		
Description		Larg	e piece d	of leather.						
(size, shape	,	Control point 2038. 1 metre to the N.								
completene	SS,									
material, un	usual									
features, fur	nction)									
Sketch		No								
Treatment o	n site	Plac	ed in fre	sh water						
Conservatio	n	Tran	Transferred to EH							
assessment										

APPENDIX 4: SAMPLE LICENSEE SURVEY RECORD AND DIVE LOGS

The Londo	n Reco	ording	g Project		Survey record and dive log					
Date	11/9/1	2	Dive No.	8002		Divers	Steve Meddle			
From	То		Measurement	Depth		Depth of CP	Adjusted depth			
3035	3039 a 3038	and	50cm	13.9r	n					
Dive description (what you did)Descended and followed the lead line to t Recovered artefacts 3038 and 3039.					line to the tag 9.	g 2035.				
Archaeological observations (a detailed description of what you saw)			Recovered the cranium (3038) and the possible handle (3039). Tried to locate the spoon seen on previous dives but it was not visible.							
Environmental Observations (state of the site, i.e erosion and deposition)					ything much n.					
Underwater conditions (visibility, current, etc.)			The current was light and visibility was very good for the London (approx c.1 metre)							
Completed by	Ste	eve Me	ddle		Date 11/9/12					

The Londo	on Recording	Project		Survey record and dive log						
Date	08/10/2012	Dive No.8004		Divers	Steve Ellis					
From	То	Measurement	Depth		Depth of	Adjusted depth				
					CP					
Dive descr	ription	Raised two art	efacts 304	7/3048						
(what you did) Placed a survey grid on the site(on the later wreck)for surveying at a later date.						reck)for use in				
Archaeolo	gical	Lots of wooden structure seen.								
observatio	ons (a	Another shoe sole, broken Clay pipes,lead ingot,bone(poss								
detailed de	escription	cattle)in situ.								
of what yo	u saw)	The smaller anchor ring was a lot more expossed than								
		previously see	n,as more	e wreckag	je was seen ι	underneath it.				
Environme	ental	More of the wr	eckage w	as expos	ed.					
Observatio	ons									
Underwate	er	5.0 mtr tide.								
conditions	; (visibility,	Poor visibility 20cm with torch, weather settled, sea state								
current, et	c.)	calm,tide still running 45min before high water.								
Completed by	S E LLIS			Date	07/10/2012					

APPENDIX 5: COMMUNITY ENGAGEMENT

A two-day consultation was undertaken to advise on the feasibility of wider public engagement through the *London* community-based recording project. The aim was to explore the current situation and expectations of the avocational licensee team in terms of wider community engagement, as well as identify networking opportunities and current best practice to inform and support this.

The consultation involved:

- a meeting with the Licensee and Nominated Archaeologist;
- a phone-call interview with Southend Museum staff;
- a phone-call interview with Thames Discover staff; and
- an initial web review of community maritime archaeology projects.

Like all community-based fieldwork there are limitations to who can be directly involved. This is particularly true for marine archaeological projects due to the need for volunteers to be qualified divers. The *London* is an excellent case study because due to its location these divers need to be highly experienced to deal with the strong currents, busy traffic and poor visibility of the Thames.

However, past community archaeology projects have shown that there are far wider opportunities to engage with the local community than directly being involved in the fieldwork element.

Often local and wider audiences are simply interested in finding out about their heritage rather than looking for direct experience. Communicating marine archaeology can be challenging because it can be on your doorstep but still impossible to visit. Often the discoveries lifted from the seabed require expensive conservation prior to display and fragments of rusty metal may not mean much out of their original context. The potential for amazing discoveries of treasure are the rarity rather than the rule. However, it is the stories we can tell, both from the past and about the process of discovering and recording the archaeology that often catch the public's imagination.

There are several organisations that have worked on interpretive projects to promote marine archaeology in general as well as specific maritime sites. For example, the Hampshire and Wight Maritime (www.hwtma.org.uk) Trust for Archaeology and Wessex Archaeology (www.wessexarch.co.uk) both have a strong presence on the web and have developed a range of online materials that can reach a wide audience. Outreach has also been an important element of their work, approaching new audiences who may not be aware of their marine heritage, through projects such as the Engaging New Audiences: Maritime Bus project (http://www.hwtma.org.uk/hlfena) and Explore the Seafloor (http://ets.wessexarch.co.uk/) and providing exhibitions, handling materials, books and leaflets. These two organisations are a useful starting place for exploring the methods and discovering what is most effective.

Recently Bournemouth University has obtained Heritage Lottery funding for their M.A.D about the Wreck project, which aims to explore how the investigations of the Swash Channel wreck can be presented to the public. This project is in the early stages but it will be interesting to see how the project develops, particularly in respect to working with Poole Museum, and there will be useful lessons learnt for the *London* through its implementation.

In terms of opportunities for the wider community to become more actively involved in the *London* project, volunteering can include other opportunities other than on-site fieldwork.

The Thames Discovery Programme (www.thamesdiscovery.org) hosted by the Museum of London is a community archaeology project, which aims to encourage the monitoring and recording of the intertidal archaeology of the Thames. This project has proved highly successful, winning a British Archaeology Award for Best Community Archaeology and again there are useful lessons to be learnt. A key element of their success is the range of opportunities for people who don't want to get muddy to get involved in the project, including representing the programme at events, helping develop exhibitions and creating content for the website and Facebook pages. Opening up Riverpedia on their website for people to share information shows that the project does not just belong to the staff that run it but everyone.

The meeting with the licensee team illustrated that they are keen to include community engagement as part of the ongoing work they will do with the *London*. The team have already attended local community events on behalf of English Heritage. In addition, with advice from English Heritage, they have begun to look at potential projects and funding to continue both the fieldwork and tell the local community about it.

A range of potential ideas were discussed during the meeting;-

- The development of a website with social media e.g. blog, Facebook
- Community talks and attendance of the divers at public events
- Exhibitions, trails and other ways of communicating info generated through London

• Volunteer opportunities for community: post excavation, volunteers to run website, help with events, work on other interpretive elements.

Funding and time were identified as two key issues that could prevent wider community engagement. The fieldwork element requires expensive equipment, such as cameras and torches, the wear and subsequent replacement of existing equipment was a concern. Another expense is future training in field recording elements, that the licensee team would like to undertake to further develop recording skills, for example photography due to the poor visibility on site. While websites and local travel to public events can be done relative inexpensively this commitment will still create additional costs on top of the fieldwork.

Time is another issue, as volunteers with jobs; the licensee team have limitations to their time. The sustainability of community engagement is important, both websites and developing and managing a volunteer network are more time-consuming than they can initially seem. However, once established a wider volunteer network would help the licensee team so that they are not overloaded with a range of tasks.

Discussions with Southend Museum staff, who are working with the Licensee team to deal with any artefacts lifted, suggest that they are keen to explore further opportunities to develop the project and work with the local community. The museum has recently undertaken a maritime archaeology exhibition and would be keen to do more, particularly on the *London* artefacts.

A key message from the staff at the Thames Discovery programme was to develop networks of organisations that can support your project and provide advice, such as the Portable Antiquities Scheme. The relationship the licensee team already have with Southend museum is an important one. The museum's experience of working with volunteers could provide help to develop wider opportunities for volunteering in respect to the *London*.

Opportunities for training for the licensee team, such as photography, can help open the site to a wider audience through better recording and fresh content for websites and exhibitions. The public will be just as interested in the team's story of why they undertook this project as they will be with the wreck itself, and a simple blog would be an excellent first step to getting the word out.

Keeping this mind funding opportunities should be sought that will support both the teams activities and development of skills, as well wider community engagement. The example above shows that unsurprisingly these are not exclusive. The Heritage Lottery Fund encourages applications for projects that undertake both.

In terms of further volunteering opportunities, it would be useful to hold some talks about the wrecks as a means of local consultation and network developing – what do people want? Are they interested in helping out at events, creating exhibitions? It may also be useful to provide information in non-heritage locations to attract new audiences, such as a small exhibition in a supermarket or an empty shop front. Often those already interested in their local heritage are participating in an activity and do not have time for new opportunities, but a project like this can catch the imagination of those uninitiated into their local heritage – the challenge is getting their attention. It may be that there could be financial help for the team available through the community if people believe in the project and gauging support early on will help with applications for funding, such as Heritage Lottery Funding.

There is a range possibilities available to the licensee team and many organisations that can support them. It is important that sustainability is considered when starting out on a plan to engage the wider community and developing interest and networks early on are important. In terms of examining the *London* community-based recording project as a pilot, the application will differ depending on the location and community but the essence of learning from others, developing networks and offering a range of ways for people to explore their heritage are key to successful community engagement.

APPENDIX 6: DIVES CARRIED OUT BY THE LICENSEE POST-12TH SEPTEMBER

The L	ondon Reco	rding Project		Dive Register
Dive	Date	Diver/s	Work undertaken	Site conditions
No.				
8004	07/10/12	Steve and Carol	Surface	Good
		Ellis,Steve Meddle	recovery(3047/3048);	
			Survey work	
8005	10/10/12	Steve Ellis,Steve	Surface	Good
		Meddle,Bill Sayers	recovery(3049/3050/3051)	
8006	14/10/12	Steve and Carol	Survey work	Very poor
		Ellis,Steve Meddle		
8007	28/10/12	Steve Ellis and Steve	Surface recovery (3052);	Visibility very poor
		Meddle	Survey work	
8008	11/11/12	Steve and Carol	Surface	Fair
		Ellis,Steve Meddle	recovery(3053/3054);	
			Survey work	
8009	12/11/12	Steve Ellis, Steve	Survey work	Fair
		Meddle		

The following is extracted from the Licensee Dive Register:

APPENDIX 7: POST-DIVING PROJECT SURFACE RECOVERIES

The Lor	ndon Reco	rding	Project			Artefact Register				
Object No.	Context	Draw	ving No.	Phot	o No.	Material	Description	Action following	Current location	
		In situ	Surface	In situ	Surfac	e		recovery	location	
3047		x		yes	yes	Leather/ wood	Shoe sole	Recorded on site and kept	EH (as of 17/12/12)	
								In fresh water.	EH (as of 17/12/12)	
3048		x		yes	yes	Clay	Clay pipe	Recorded on site and kept in sea water.	EH (as of 17/12/12)	
0049		x		yes	yes	Bone	Cranium	Recorded on site and kept in fresh water.	EH (as of 17/12/12)	
0050		x		yes	yes	Bone	Femur	Recorded and kept in fresh water.	EH (as of 17/12/12)	
0051		x		yes	yes	Bone	Rib	Recorded and kept in fresh water.	EH (as of 17/12/12)	
3052		x		yes	yes	Wood	Pulley block	Recorded and kept in fresh water	EH (as of 17/12/12)	
3053		x		yes	yes	Pewter	pot	Recorded and kept in fresh water	EH (as of 17/12/12)	
3054		x		yes	yes	Bone	Femur	Recorded and kept in fresh water	EH (as of 17/12/12)	

APPENDIX 7: DRAFT NAS NEWSLETTER ARTICLE (P7)

The London Recording Project – a model for 'difficult wrecks'?



The second rate London in 1660, one of two drawings by Willem Van de Velde the Elder

'...This morning is brought to me to the office the sad news of the *London*, in which Sir J Lawsons men were all bringing her from Chatham to the Hope, and thence he was to go to sea in her – but a little a-this-side the buoy of the Nower, she suddenly blew up. About 24 and a woman that were in the round house and coach saved; the rest, being 300, drowned...'

So wrote the famous diarist and naval administrator Samuel Pepys on 8th March 1665. Today Charles II's second rate warship *London* is an 'at risk' designated wreck in the Thames Estuary off Southend. Lost in 1665 as a result of a magazine explosion as it was being sailed out of the Medway at the start of the Second Dutch War, the remains of the ship are scattered across two sites on the edge of the present shipping channel.

The sites have been known about for some time and a French demi-culverin in the 1960s can be seen at the Royal Armouries museum at Fort Nelson near Portsmouth. They were designated under the Protection of Wrecks Act after at least two bronze cannon were salvaged from the site in 2007. Archaeological contractors Wessex Archaeology then undertook a short phased programme of work on the sites from 2009-2011 on behalf of English Heritage, during which geophysical and diving surveys were carried out.

Wessex Archaeology



Bronze demi-cannon cast for the London by George Browne, one of the guns salvaged from the London in 2007.

The sites are rich in archaeology. Parts of the ship's hull and internal fittings survive, together with a large quantity of delicate archaeological material including barrels, rope and leather shoes. Much is currently lying exposed on the seabed. Given the scale of the casualties it is not therefore surprising that human remains have been found. However, the discovery of the remains of at least two women is. Although severe penalties could be levied upon officers and sailors of the Restoration Navy for concealing women onboard, it was the misfortune of these two women that wives or 'girlfriends' were allowed onboard in port and in the fleet anchorages such as the Nore (or Nower) in the Thames or the Downs off Kent.

The extensive financial commitment required to fully record the site using archaeological contractors was not an option open to English Heritage, which therefore turned to the local community for help. Seeking out an enthusiastic Licensee they found local Essex diver and current Licensee Steve Ellis. Supported by English Heritage and a range of volunteer specialists, his team quickly become acquainted with the site. Able to dive regularly and throughout the year, they started to make significant discoveries.

If the environment is problematic for diving, it is doubly so for archaeology. The sites are swept by fierce currents and have visibility that often prevents divers from reading their gauges. Like many sites on the east coast of England the *London* represents the type of challenge that has often defeated archaeological investigations.



Licensee Steve Ellis (right) and members of his licensed team on site

Whilst Steve and his team were highly experienced Estuary divers, they were new to archaeology. They therefore faced a steep learning curve if they were to produce the kind of archaeological results they craved, those that were going to produce a lasting public benefit to the local community. An NAS course and the help of a number of specialist volunteers from Wessex Archaeology and elsewhere helped but was not the complete solution.

Discussions between English Heritage, Wessex Archaeology and the Licensee therefore led in 2012 to a National Heritage Protection Plan funded project to produce a recording system or 'Archaeological Protocol' for the *London* that was suited to the volunteers who would be using it and the difficult environment. A group led by Wessex Archaeology and including the Licensee and his team, maritime and conservation staff from English Heritage and representatives of Southend Museum sat down together in early summer and devised the protocol.

The protocol provides guidelines on how to prioritise the work involved. These decisions are based upon research questions and, because the site is at risk, upon analysis of those areas of the site thought to be at greatest risk of erosion. The latter in turn relies upon difference analysis of multibeam swath bathymetry datasets acquired during monitoring work for the London Gateway scheme and is therefore is a good example of how data produced during developer-funded marine archaeological work can be fed into the work being carried out by local voluntary groups. In addition to this the Licensee's own monitoring work based upon simple diver observations is now producing a picture of a short term cycle of erosion and deposition within the long term pattern revealed by the geophysics.



Plot of bathymetric changes on one of the London sites between 2010 and 2011 (blue indicates areas of deposition, yellow and red erosion)

To ensure that the protocol could do what it promised a short fieldwork trial was undertaken in September 2012. As the protocol provided procedures for identifying when artefacts 'at risk' should be recovered and for their long-term care, the Licensee had been issued with a Surface Recovery Licence. Whilst Wessex Archaeology concentrated on installing a network of survey control points, Steve, his wife Carol and local fisherman Steve Meddle were therefore able to carry out and record a number of finds recoveries. More remarkable discoveries have followed, including a complete leather shoe and more human remains. Once conserved, all of these finds will be accessioned by Southend Museum.

A particular feature of the protocol is a complete suite of recording forms modelled on the type of forms used to record terrestrial archaeological sites. These have been adapted to ensure their suitability for the *London*. Although initially daunting, the team has since found that they are easy to use and are developing a growing appreciation of the value of systematic recording and archiving. Another feature of the protocol is its adaptability. The Licensee and his team are not experienced archaeologists and the site environment is very difficult. The system for underwater survey that they wanted and which is therefore written into the Protocol is based upon simple trilateration and offset techniques, using a network of control points that are being installed on the sites. At the same time additional data is being collected that will ease any transition to more sophisticated three dimensional recording as the team becomes more experienced and more confident.

In these days of severe cuts in local authority museum budgets, the Licensee is fortunate to have enlisted the help and support of the forward thinking staff of Southend Borough Council's museum service. They are keen to develop the role of their museum in preserving and presenting the maritime history and archaeology of the Estuary. The recording protocol therefore sets out what needs to be done to ensure that the museum remains a willing partner. By designing the museum's requirements into the recording system and decisions on finds recovery, the Licensee will hopefully avoid the problems that can beset both volunteer and professional alike when they are seeking to deposit their archives at the completion of an otherwise successful project.

A particular feature of the protocol is the provision of flow charts for deciding what finds should be recovered and what left *in situ*. Apart from a small number of research-related recoveries, it is anticipated that most finds will be left *in situ* unless they are at risk of damage or destruction and adequate conservation and curation can be provided. Not only do the flow charts ensure that these decisions are dealt with consistently but they also enable the Licensee to take decisions quickly and without having to refer back to anyone.



An almost complete mid-17th century 'shaft and globe' glass bottle found on the site.

The protocol provides advice on how to deal with recovered finds, including temporary storage and recording them both on the seabed and on the surface. At the present time the Licensee transfers the finds to the Museum for temporary storage, from where they go to English Heritage for conservation assessment. The arrangement is working well, although as yet the number of finds is by agreement fairly small.

Recording data in an organised and consistent way is a challenge for those new to archaeology and therefore the Protocol includes a series of recording forms. Based upon adaptations of forms tried and tested on other archaeological sites, this aspect of the project seeks to ensure that data recording both during and after a dive is consistently of a high quality.

Another feature of this site is that the work of the Licensee is being supported by an informal panel of experts set up by the Nominated Archaeologist, including finds specialists and maritime historians. In addition to helping devise a forthcoming research framework, these specialists provide the Licensee with advice on his discoveries. This synergy has for example allowed stacked iron cannon found on site to be identified with records of the reballasting of the *London* and has led to the realisation that the site may contain important examples of early 17th century or even earlier Tudor iron artillery.

Although work on the Protocol for English Heritage will finish at the end of 2012, continuity will not be lost because English Heritage will continue to support Steve Ellis' work. In addition, specialists from the Wessex Archaeology team will continue to help the Licensee as volunteers as part of his advisory team.

English Heritage and Wessex Archaeology hope that their initiative in developing the project will also produce benefits that are not limited to one site. They see the Protocol as potentially offering an adaptable model for helping volunteer-led study of other important but archaeologically challenging sites and for building the type of local partnerships that will be needed for them. Whilst it will not be for everyone and established projects and teams may not need it, it could prove ideal for new projects on newly discovered or designated wrecks. Only time will tell as to just how successful this initiative has been. However, the early signs are certainly promising.

Graham Scott Wessex Archaeology

with contributions by Alison James, EH, and Steve Ellis, Licensee.



Location of the London designated wreck site



Site 1 WA CP locations (background bathymetry courtesy of the PLA)



Site 2 WA CP locations (background bathymetry courtesy of the PLA)





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