ARCHAEOLOGICAL SERVICES IN RELATION TO THE PROTECTION OF WRECKS ACT (1973)

BONHOMME RICHARD, FILEY BAY, NORTH YORKSHIRE

DESIGNATED SITE ASSESSMENT: FULL REPORT

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Summary

Wessex Archaeology was commissioned by English Heritage to undertake a Designated Site Assessment of the *Bonhomme Richard*: a designated wreck site located within Filey Bay, North Yorkshire. The work was work undertaken as part of the contract for Archaeological Services in Relation to the Protection of Wrecks Act (1973).

The *Bonhomme Richard* was a converted merchant vessel commanded by John Paul Jones (the man regarded as the founder of the American Navy), that sank in 1779 following a battle with the British frigate *Serapis*. The timbers that are believed to represent the remains of the *Bonhomme Richard* were originally found in 1974, and in July 2002 the site was designated.

Diving operations took place between 23rd and 28th July alongside operations carried out by Pritchard Diving Services who were acting for the National Geographic Society and the National Parks Service of the Department of the Interior (USA). A written brief and corresponding Written Scheme of Investigation required Wessex Archaeology to undertake survey to Levels 3a and 3b and to assist the work of Pritchard Diving Services.

Position-fixes were obtained for Area A of the wreck and the Pritchard Diving Services survey. Away from this area, searches identified several further elements of the wreck but, due to raised sand levels, Areas B and C could not be firmly identified.

The difference in sand levels between 2002 and 2003 suggests that the known wreckage lies within a highly mobile environment. The licensee has indicated that this is typical of the Filey Bay area as a whole, and that sections of the wreck are thought to have been moved by fishing trawls. This situation presents a threat to the integrity of the site.

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Acknowledgements

This investigation was commissioned by English Heritage as part of the contract for Archaeological Services in Relation to the Protection of Wrecks Act (1973). The assistance provided by Ian Oxley and Annabel Lawrence of the English Heritage Maritime Team is gratefully acknowledged.

Wessex Archaeology would also like to thank the following people:

Licensee John Adams, nominated archaeologist John Buglass and all the members of the Filey Underwater Research Unit. The co-operation of Pritchard Diving Services during the assessment is also gratefully acknowledged.

The fieldwork was carried out of DSV *Xplorer* by Graham Scott, Simon Adey-Davies, Jenny Black and Frank Mallon and boat skipper Dave Burdon. The report was compiled by Frank Mallon and Steve Webster, and Kitty Brandon prepared the illustrations. The project was managed for Wessex Archaeology by Steve Webster.

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- Digital use of Chart 129

A copy of the report will be sent to UKHO.

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1. INTRODUCTION

1.1.1. This document is the Full Report for a Designated Site Assessment undertaken as part of the contract for Archaeological Services in Relation to the Protection of Wrecks Act (1973). The document has been prepared by Wessex Archaeology (WA) for English Heritage (EH). It constitutes an assessment of the *Bonhomme Richard*, a designated wreck site located within Filey Bay, North Yorkshire (**Figure 1**).

1.1.2. The work was conducted in accordance with a Written Scheme of Investigation (WSI) prepared by WA, which was in turn produced as a response to a brief provided by EH. Diving commenced on the 23rd July and finished on the 28th July 2003. All diving took place off the *Xplorer*. The field team personnel were WA archaeologists Graham Scott, Simon Adey-Davies, Jenny Black, Frank Mallon and vessel skipper Dave Burden.

2. OBJECTIVES

2.1.1. The overall objective for the site as defined in the WSI was for recording to level 3a and 3b.

2.1.2. This was further defined, specifying the following tasks:

- Monitor and assist Pritchard Diving Services (PDS) with the undertaking of the work as detailed in the Filey Underwater Research Unit Project Design (Buglass 2003);
- Plot and provide co-ordinates for all visible elements of the site, including outlying elements close to the main body of the site;
- Assist with the process of producing detailed records of selected elements of the site (with a view to ultimately expanding this work into a full level 3b survey);
- Establish monitoring points within the site in order to monitor sand movement over time;
- Assess, and if possible plot any features associated with the ballast mound and possible debris trail.

3. EXISTING SITE DATA

3.1.1. The centre of the designated area as given in the brief was as follows:

Lat.	**54º 11.488' N**
Long.	**00º 13.3774' E**
OSGB 36	

3.1.2. The statutory instrument number is 2002 no.1858 and from the centre point (given above) the designated area consists of a circle with a radius of 300 meters. The current licensee is Mr. John Adams and the nominated archaeologist is Mr. John Buglass.

3.1.3. Documents that were available prior to and during the visit were as follows:

- The UK Hydrographic Office records for the site;
- The National Monuments Record entry for the site;
- ADU reports (1996 and 2002);
- FURU project design (Buglass 2003);
- U.S. National Parks Service report on the 2002 work (Lenihan et al. 2003);
- Site plan produced by Dom Shomette.

4. METHODOLOGY

4.1.1. Survey methods used were diver survey (video), diver survey (object positioning) and diver survey (area search). Survey data was recorded in real time using the WA Diver Recording System. This methodology was discussed with the licensee prior to the commencement of diving operations to assess practicality and possible amendments and suggestions.

4.1.2. Specific survey targets were determined following discussion with PDS. These included the need to plot the survey points being used by PDS for their survey.

4.1.3. Details of the methodologies used by WA during the 2003 PWA survey are detailed in a separate document (WA 2003b).

5. RESULTS

5.1. DIVING CONDITIONS

5.1.1. Visibility on the site was generally very poor, and was never more than three to four metres. During some dives this was reduced to zero metres, making it impossible to conduct any digital stills recording and only limited video survey.

5.1.2. The Filey Bay area is subject to strong tidal currents. As a result of this bottom time was restricted by the availability of slack or near slack water conditions during daylight hours.

5.1.3. In the event a total of 11 dives were conducted in water depths of around 25 metres, with a total of 361 minutes bottom time. Further details are given in **Appendix I**.

5.2. TASKS UNDERTAKEN

5.2.1. Diver tracks during the 2003 investigation are shown in **Figure 2A**. Observation points – together with error margins – are shown in **Figure 2B** and are listed in **Appendix II**.

5.2.2. An initial swim-over was conducted within the area of the site under investigation by PDS (Area A) in order to familiarise the team with the site. The bulk of the recording work within this area concerned the plotting of the PDS datum points (notably PDS baseline A – B) in order to tie their work into the rest of the site. Subsequent visits were made to this area in order to monitor the work of PDS, to gather further data for the key datums and to record profiles across the site, however the main body of the work after the swim-over was concentrated within the areas away from the PDS excavations.

5.2.3. Following the work within Area A, a series of searches was conducted to the north and east. This was done in order to determine the full extent of Area A and to locate two outlying areas (Areas B and C) that were approximately positioned on Dom Shomette's plan of the site. The area covered by these searches is shown in **Figure 2A** and the recorded features are shown in **Figures 2B** and **3**.

5.3. SITE POSITION

Lat.	**54º 11.505' N**
Long.	**00º 13.467' W**
WGS 84	

5.3.1. The above position is for Datum A on the northern end of the baseline within Area A. It was obtained by means of tracked diver survey using the ROV-trak LBL acoustic system.

Lat.	**54º 11.492' N**
Long	**00º 13.478' W**
WGS 84	

5.3.2. The above position is for Datum B (**Plate 1**) on the southern end of the baseline in Area A. It was obtained by tracked diver survey using the ROV-trak system.

5.3.3. The position of Datum A was checked on 11 separate dives and the position of Datum B was checked on three dives. The above position-fixes represent an average reading for the two points. The hand measured distance between the two datums was 25.6 metres.

5.4. GEOLOGY, TOPOGRAPHY AND FLORA

5.4.1. The seabed was mostly flat within the survey area. The surface was made up of a fine, approximately 0.1 metre thick, layer of loose silt that overlay a mixture of fine sands and gravels. Both of these layers were highly mobile. Occasional small rocks or rock outcrops were encountered during the course of the survey.

5.5. ARCHAEOLOGICAL FEATURES

5.5.1. After positioning the PDS baseline within Area A of the wreck site, a search was conducted for the outlying areas B and C. A full description of archaeological observations made during these searches can be found in **Appendix II**, however the main features encountered were as follows:

5.5.2. Within Area A one longitudinal timber and four areas of framing (marked 'curved timbers' on the PDS plan reproduced in **Figure 3**) were all that was visible of the wreck on the surface (**Plate 1**). However, these lay within a sub-rectangular area of seabed measuring c. 28 metres NE – SW and three to five metres wide that apparently represented the area of the wreck exposed in 2002.

5.5.3. The north - south timbers appeared to be either end of a clamp or stringer running longitudinally along the inside of the vessels hull. It was fixed to the inner edge of the frames by copper alloy clinch (or through) bolts. The underlying frames were joined with indeterminate iron fastenings and the outer hull planking was fixed to the frames with copper alloy spikes. No other features were seen in this area apart from some fragmentary patches of ceiling planking.

5.5.4. Away from Area A there was a rough line of timbers and other objects that ran for c. 60 metres to the north of Datum A (**Figure 3**). These included three upright timbers (at **Obs. 177, 201** and **215**) that may indicate the presence of further buried elements of the vessel. The rest of the features were timbers, timber fragments, and iron and lead objects. The most identifiable feature was an iron hawse pipe that was found in association with a structural timber c. 10 metres to the north of Datum A (**Plates 2** and **3**).

5.5.5. An apparent concentration of features was found around an iron object at **Obs. 208** (**Figure 3**). To the north east of this (at **Obs. 209**) there were two horizontal parallel timbers with metal fastenings, and at **Obs. 211** there was a frame rising at an angle from a raised sandbank (**Plate 4**). Though not confirmed as such this may represent either one of the outlying areas (Areas B and C) recorded on Dom Shomette's plan of the site. John Adams, who viewed the WA video, was of the opinion that this area corresponded with Area B.

5.5.6. A three separate locations to the north east of Area A, a further four timber fragments (**Obs. 159, 161, 162** and **164)** and two brick fragments (**Obs. 160** and **163**) were identified (**Figure 3**). None of these areas contained the articulated timbers that were predicted by previous work.

5.5.7. A general observation arising out of the survey and search work on the site is that all elements of the wreck appeared to be covered to a far greater degree than was apparently the case in previous years. Discussions with John Adams, who has dived the site over a period of 29 years, suggest that fluctuations in the level of sand cover over the site are a product of the natural movement of sediment within Filey Bay. He has also indicated that 0.3 metres of sediment (i.e. the level of cover over the Area A timbers in 2003) may be deposited or removed by a single tide.

6. CONCLUSIONS

6.1.1. The 2003 WA survey and the work by PDS have contributed to the generation of a Level 3a survey of Area A of the *Bonhomme Richard* site. However, the raised seabed level experienced during the 2003 season has meant that a full *in situ* (i.e. Level 3b) plan of the Area A timbers has not yet been completed.

6.1.2. The recording of the outlying areas (Areas B and C) is still at a very rudimentary stage. Dom Shomette's plan forms a partial Level 2a record of these areas, with the lack of an accurate location being the main deficiency. Following consultations with the licensee and an assessment of the records generated by the US National Parks work on the site in 2002, it appears likely that Areas B and C were largely buried at the time of the 2003 assessment.

6.1.3. The small isolated features located by WA may be tentatively identified as the most upstanding Areas of B and C. If this is subsequently found to be the case then this would complete the Level 2a record and form the starting point for a Level 3a record of these areas.

6.1.4. The existence of these outlying areas could be a key factor in firmly identifying the site as the *Bonhomme Richard*. The date of the wreck, as recorded within Area A appears to correspond with a late 18th century vessel, however the absence of any cannons or other artefacts that may be linked with the *Bonhomme Richard* is hindering identification. Thus the possibility that Area A represents a detached section of hull, rather than the main wreck site could be important.

6.1.5. The fact that Areas B and C were largely uncovered during site visits by the licensee in 2002 indicates a substantial and relatively rapid change in the seabed topography. The licensee reports this as being representative of Filey Bay as a whole. Further information is required on this point, however such regular covering and uncovering may account for the absence of artefacts within Area A.

6.1.6. The extent and effect of such uncovering is indicated by the fact that it has been reported that a section of wreck has been moved by fishing trawl. Further to this the PDS divers were reluctant to excavate the five metre square area that was proposed due to the discovery that sections of Area A were insecure. This evidence for rapid changes in sediment levels and the apparent positional instability of the wreckage suggests that the wreck may be spread over a much wider area than the c. 100 by 100 metre area searched by WA in 2003.

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8. APPENDIX I: DIVE DETAILS

Dive No.	Date	Diver	Depth	Duration (mins)	Current	Visibility
16	23/07/03	Frank Mallon	25	26	slack	3 meters
17	24/07/03	Simon Adey - Davies			slack	2-3 meters dark
18	24/07/03	Frank Mallon	24	28	slack	1.5 metres
19	24/07/03	Graham Scott	24	40	slight current running to the north	1-2 meters
20	25/07/03	Graham Scott	24	39	mostly slack	less than 1 meter
21	25/07/03	Jenny Black	23	30	slack	1m+
22	26/07/03	Frank Mallon	23.5	31	slight	3-4 meters
23	27/07/03	Graham Scott	23	38	slight	1-2 meters
24	27/07/03	Frank Mallon	24	36		
25	28/07/03	Frank Mallon	26	28	slight	1 foot
26	28/07/03	Graham Scott	26	29	picking up	zero

9. APPENDIX II: ARCHAEOLOGICAL OBSERVATION LOG

Obs. No.	Associated Obs. Nos.	East	North	Error - East	Error - North	Obs. Type	Description	Video Log
138	139, 147, 155, 182, 183, 186, 192, 197, 198, 203	515946	478781	1.547	3.465	Datum A	Datum A on the northern end of the baseline that runs through the main body of the site (Area A).	
141	142, 150	515935	478761	0.045	0.465	Datum B	Datum B on the southern end of the baseline that runs through the main body of the site (Area A).	00:07
174	184, 193, 199	515950	478791	1.3945	1.3945	Hawse pipe	Wrought iron flanged hawse sleeve, internal diameter 19/20 cm. External diameter 38/40 cm. Length 75 cm. This feature marks the northern extremity of area A. This is firmly identified as the feature identified initially by the licensee and Dom Shomette as a cannon but subsequently and conclusively identified as a hawse pipe by the ADU in 2002.	16:03:01 16:05:40 16:05:46
140		515948	478785			Timber	End of timber by Datum A	
143		515938	478766			20m on baseline	A 30m soft measuring tape was laid out between Datum A and Datum B with 0m at Datum A, and a check measurement was taken at 20m	
144		515941	478770			15m on baseline	Check measurement on A-B baseline at 15m	
145		515943	478775			10m on baseline	Check measurement on A-B baseline at 10m	
146		515946	478780			5m on baseline	Check measurement on A-B baseline at 5m	
148		515950	478786			Start of profile 1	Depth profile run along Area A.	
149		515934	478759			End of profile 1		
151		515943	478774			Start of profile 2,	Run across the site at 10m on baseline	
152		515943	478774			Profile 2	10m on baseline during profile 2	
153		515948	478773			End of profile 2	Eastern end	
154		515946	478779			5m on baseline		
158		515990	478851			Stone	Natural stone?	

Obs. No.	Associated Obs. Nos.	East	North	Error - East	Error - North	Obs. Type	Description	Video Log
159		515981	478831			Wood fragment	Southern end of a small piece of wood	
160		515980	478828			Brick fragment		
161		515979	478792			Wood fragment	Small wood fragment	
162		515984	478808			Wood fragment	Very small fragment of wood	
163		515987	478809			Brick fragment	Small fragment of small brick	
164		515984	478827			Wood fragment	Triangular	
168		515989	478809			Search point	Centre of circular search. Example of the seabed in the search area showing sand and silt	00:08:47
169		515998	478796			Seabed description	Seabed, area of shingle and stone	
172		515989	478769			Search point	Turn in the search grid	
173		515987	478759			Area of boulders	Area of boulders at a depth of 24m	
175		515928	478816			Search point	Turn in search grid	
176		515950	478824			Timber and lead object	Horizontal timber & lead pipe, possibly same as **204**	
177		515945	478817			Upright timber	Upright timber, possibly same as **178**	
178		515949	478829			Upright timber	Upright timber, possibly same as **177**	
185		515971	478810			Search point	End of 30m tape	
194		515944	478825			Search point	21m on tape towards new site	
200		515947	478824			Area of timbers	Area of new timber, possibly same as **201**	
201		515950	478829			Area of timbers	Area of new timber, possibly same as **200**	

Obs. No.	Associated Obs. Nos.	East	North	Error - East	Error - North	Obs. Type	Description	Video Log
204		515942	478803			Timber and lead object	Lead scupper and timber, possibly same as **176**	
208		515948	478826			Iron object	Rebar?	
209		515956	478831			Timbers	Two large timbers running parallel together. Orientated east west. 1 meltal bolt felt, and also Three small concreted mounds on one timber. They both run for about 4m before they are lost in the silt. One is 0.15m wide, the other is 0.25m wide. The distance between the timbers is 0.04m	
210		515962	478842			Timbers	Other end of timbers recorded in **209**	
211		515963	478835			Timber	One Single beam, or ships frame. It is curved, one end stands 0.05m out of a raised sand bank at a 45 degree angle. It is 0.70 m long by 0.16m wide by 0.16 wide. There is a natural scour of shingle around the base. At the upstanding end there is a small concreted mound. It is running north south at a depth 25.5 m.	00:09:29 00:11:47
213		515928	478832			Seabed description	Made bottom, seabed gravel and sand	
214		515958	478836			Area of timbers	This is possibly Area B or C as described by John Adams	
215		515950	478804			Upright timber	Single upstanding timber	
217		515948	478810			Timber	‘New’ timber sitting on gravel	