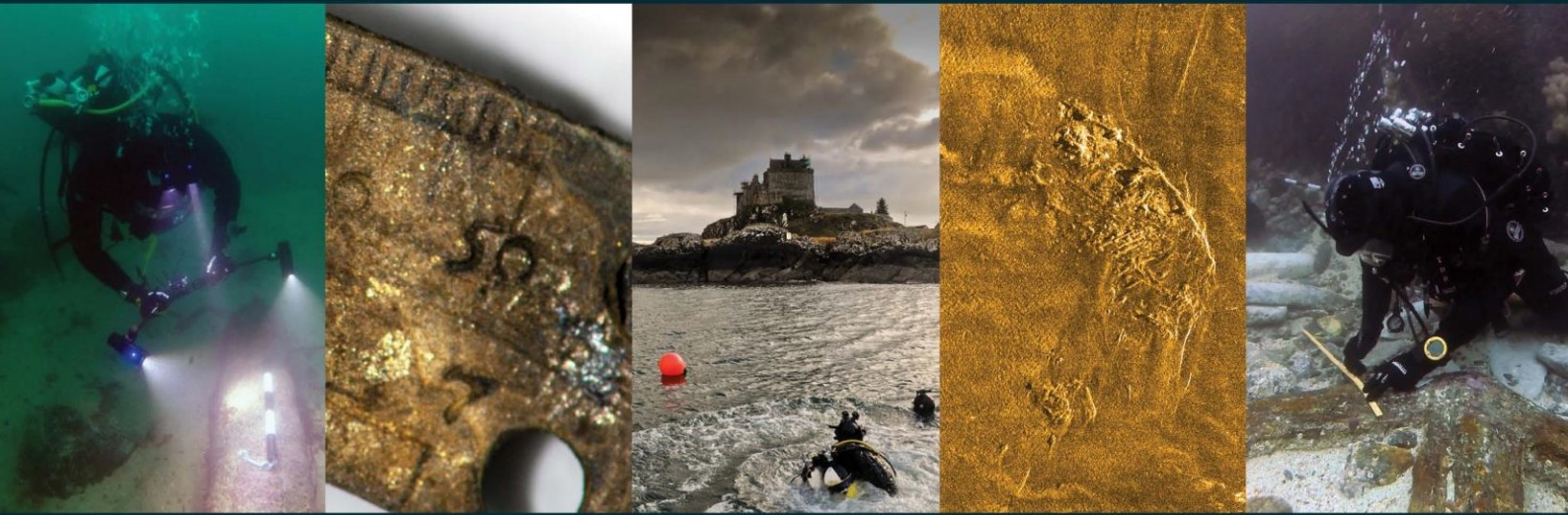


# South Edinburgh Channel protected wreck

*Review of archaeological investigations to date*



*for*

Historic England

HE Project: 7375

CA Project: 770340

CA Report: 17260

May 2017



## South Edinburgh Channel protected wreck

### Review of archaeological investigations to date

Historic England project number: 7375

CA project: 770340

CA report: 17260

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date	May 2017
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## **SUMMARY**

### **Project name: South Edinburgh Channel protected wreck: Review of archaeological investigations to date**

Cotswold Archaeology was commissioned by Historic England in February 2016 to undertake a marine assessment for possible de-designation (HE project no. 7375) of three wreck sites. As little evidence arose that warranted further investigation by divers on two of the sites Cotswold Archaeology was subsequently commissioned to undertake a baseline assessment of archaeological investigations to date on the South Edinburgh Channel designated wreck site. This assessment includes the review of the initial reports based on diving operations carried out by the Port of London Authority and National Maritime Museum prior to designation, and subsequent survey reports by archaeological diving contractors in support of the Protection of Wrecks Act 1973, following designation in 1977. These documents were made available by Historic England at their offices in Swindon.

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## 1. INTRODUCTION

### **Outline**

- 1.1. Cotswold Archaeology (CA) was appointed by Historic England (HE) to carry out an assessment of the South Edinburgh Channel protected wreck (NHLE entry 1000079) with the aim of reviewing the archaeological investigations carried out on the site to date. This assessment comprises desk-based research and review of multibeam echo-sounder data provided by the Port of London Authority (PLA).

### **Co-ordinate systems and GIS**

- 1.2. The current project ArcGIS workspace was set up in WGS1984, using the UTM Zone 31N projection. Existing site plans were georeferenced to modern charts in this projection where possible.

### **Location**

- 1.3. The South Edinburgh Channel protected wreck site is designated as an area of 100m radius centred on the point 51° 31' 44" N 001° 14' 53" W (WGS84) (Figure 1) located off Margate, Kent, in the outer Thames estuary.

### **Scope and aims**

- 1.4. The assessment focuses on the archive and published information relating to the designated wreck in the South Edinburgh Channel. This assessment provides a summary of the archaeological investigations carried out on the site to date with the aim of determining the potential survival of the wreck and options for future investigations.
- 1.5. The original aims of the project (no. 7375) (Historic England, 2015) were:
  - to allow Historic England to update/enhance the quality of the National Heritage List Entry (NHLE);
  - to undertake site risk assessments to inform Heritage at Risk;
  - to allow better understanding of the sites and how they had been identified for designation previously, thereby helping to improve HE's future assessment approach to candidate sites;
  - to identify the probability of the presence / absence of archaeological remains; and

- to potentially save resources in terms of HE officer time and money and allow this to be redirected to other designated and significant sites.
- 1.6. Unlike the three sites originally investigated under the terms of this contract the investigation of the South Edinburgh Channel site was purely a desk-based exercise to assess the work that has been undertaken on the site to date.

## 2. METHODOLOGY

- 2.1. This assessment focuses on the South Edinburgh Channel designated area (Figure 1) but also, where informative, contextual and comparative information from other sites.

### ***Desk-based assessment***




- 2.2. Research was first carried out to establish what work had been undertaken on the South Edinburgh Channel wreck, what remains might be expected to survive on the wreck site and where they might be located. There is currently no licensee for the South Edinburgh Channel wreck. Access to the licensee archive was provided by HE at their offices in Swindon, which included information relating to the original designation of the wreck site. These included the PLA diving operation reports, initial assessments of the wreck by the National Maritime Museum, and specialist assessments of the finds recovered. Additional reports and publications regarding the South Edinburgh Channel wreck were also consulted. Finds recovered from the wreck are held by the National Maritime Museum, examples of which can be viewed online (Royal Museums Greenwich, 2017), although a full reassessment of these was considered beyond the scope of this report.
- 2.3. This included the initial descriptions of the wreck prior to designation based on diving operations carried out by the PLA in conjunction with the National Maritime Museum (Section 4). These operations included the original site investigation and subsequent clearance work required to make the channel safe for navigation.
- 2.4. Information on the wreck site following designation includes monitoring reports carried out by archaeological diving contractors in support of the Protection of Wrecks Act 1973. These contractors have included the Archaeological Diving Unit (ADU) and Wessex Archaeology.

378200

378300

378400

378500

 South Edinburgh Channel designated area  
 PLA 2014 - 2015 multibeam echo-sounder coverage  
 6.13m below LAT  
 2.84m below LAT

5710400

5710400

5710300

5710300

5710200

5710200

5710100

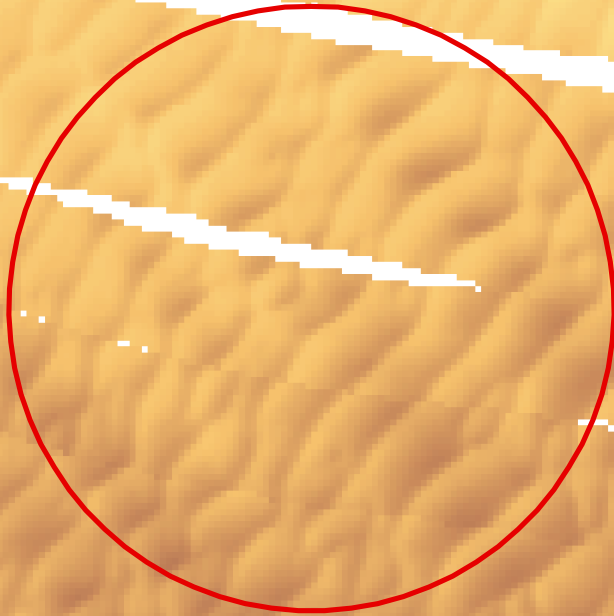
5710100

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**PROJECT TITLE**  
**South Edinburgh Channel protected wreck**  
**Review of archaeological**  
**investigations to date**

**FIGURE TITLE**  
 Designated area location showing sand coverage  
 identified in 2014 - 2015 PLA  
 multibeam echo-sounder data



Coordinate system: WGS 1984 UTM Z31N

DRAWN BY PZD PROJECT NO. 770340  
 CHECKED BY DB DATE 19/05/2017  
 APPROVED BY MTW SCALE @ A4 1:2,500

FIGURE NO. **1**



### ***Existing geophysical data***

- 2.5. Bathymetric surveys were conducted by the PLA in 1997, with a subsequent survey at the end 2014 completed in 2015. The 1997 dataset appears to have been collected using a single-beam echo sounder following survey lines running north-west by south-east across the site. The survey lines were spaced c. 135m apart, the data were provided by the PLA in .xyz format gridded at 20m, and depths were expressed below Lowest Astronomical Tide (LAT). The 1997 bathymetry data has insufficient resolution to enable identification of seabed features which may be associated with a buried or partially buried wreck.
- 2.6. The 2014 - 2015 data were provided by the PLA as .xyz format data gridded at 2m with depths expressed below LAT. The data were displayed in ArcGIS, which shows that there is close to one hundred percent coverage within the designated area. Although the data resolution is not sufficient to identify smaller items on the seabed, it does show sand waves covering the designated area, which suggests that the wreck was buried at the time of the survey (Figure 1).

## **3. PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS**

### ***Pre-designation: 1972 - 1977***

- 3.1. During a survey undertaken on the South Edinburgh Channel in response to its observed westward retreat (van der Merwe, 1975a) the PLA located an obstruction measuring 40m long and standing c. 2.5m above the seabed. The obstruction was considered a possible hazard if the channel continued its westward regression so diver investigation was undertaken to determine how best to deal with it. The PLA recognised that the area had been a drying shoal historically which may have been a navigation hazard in the past and had the forethought to invite the National Maritime Museum to observe the investigations in case the remains were of historic interest (van der Merwe, 1975a).
- 3.2. The initial dive investigations carried out by the PLA and National Maritime Museum took place in May 1975 (Bradley, 1975). The shot line, placed on the first day of diving, landed on a cannon still attached to a gun carriage; the gun measured c. 1.8 – 2m in length with an internal muzzle diameter of c. 10cm (Figure 2). The wreck was reported to be of wooden construction, with a square post noted rising vertically from the seabed (Figure 2) thought to be a stanchion (Bradley, 1975). Various 'sundry objects' were noted in the vicinity of the cannon (Bradley, 1975). By the end of the



diving operations it had been established that the wreck was resting on a plateau of hard sand, listing to the west, with at least one deck exposed above the seabed on the east side of the sandbank. Further observations were difficult owing to deteriorating diving conditions so it was not possible to determine the orientation of the vessel (Bradley, 1975; van der Merwe, 1975a). Construction features such as hanging knees reinforced with iron angle were observed. It has been suggested that elements of other decks may survive although visibility was so poor that this was difficult to determine. This was suggested as it was noted that in some parts of the wreck divers' bubbles were trapped overhead by possible overhanging structure (van der Merwe, 1975a).

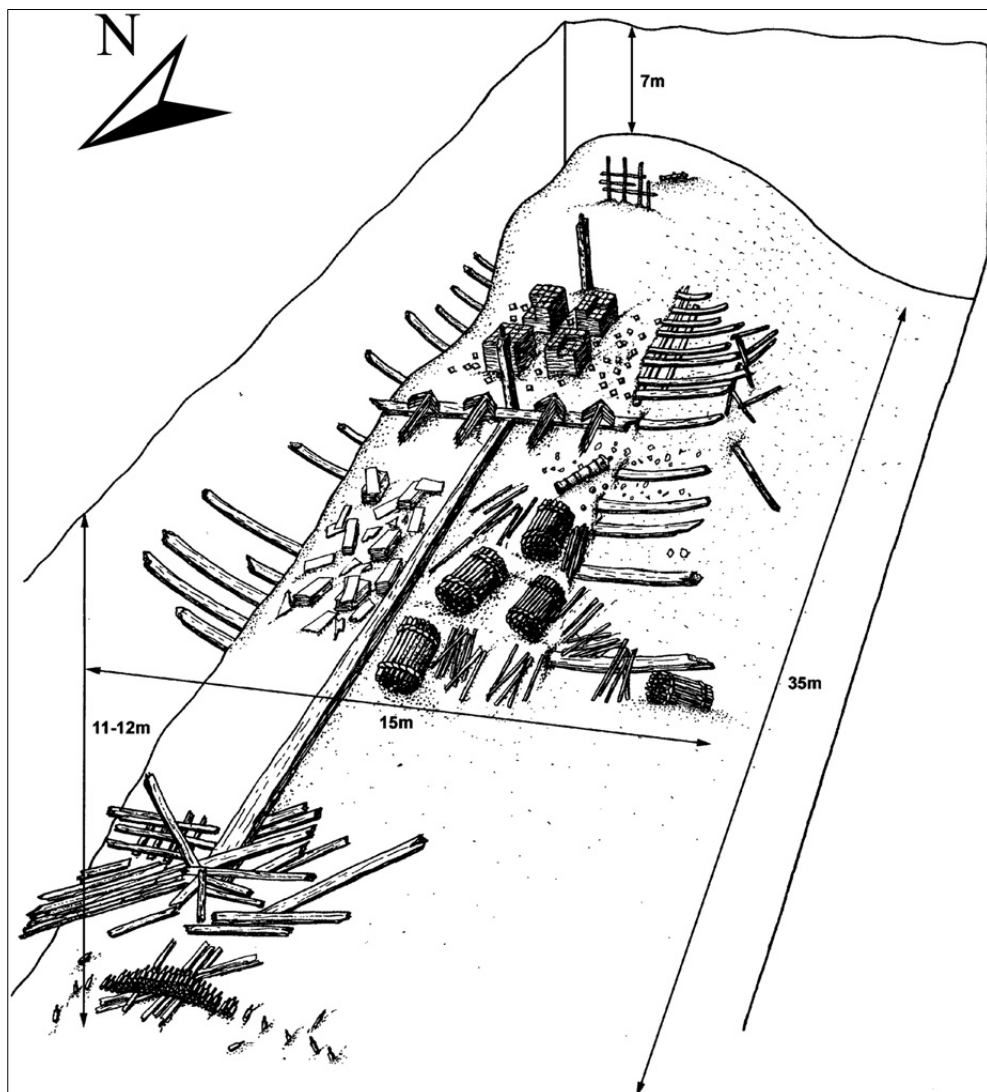


Figure 2 Site plan (Rebecca Caser, from archive)

- 3.3. A range of artefacts were recovered from the site and retained by the National Maritime Museum to provide diagnostic information (van der Merwe, 1975b). These included:
- A corked bottle full of liquid;
  - An iron 'blade' measuring c. 60cm long;
  - The stem and base of a cut wine glass;
  - A clear glass tumbler; and
  - Seven 'flat ingots' later identified as copper plate money stamped with the date 1748.
- 3.4. By the end of this phase of the diving operations news of the wreck had spread locally, including a broadcast by Medway Radio (van der Merwe, 1975b). It was believed that the radio station had received the information from the radar stations 'down river' which monitored sea traffic. The crew was reminded of the need for confidentiality as the wreck was considered sensitive (van der Merwe, 1975b).
- 3.5. Following these investigations a meeting was held between the PLA and the National Maritime Museum to discuss how to proceed with work on the site (McGrail, 1975). It was agreed between the PLA and National Maritime Museum not to pursue designation as, although the cargo of the ship was of archaeological interest, much was already known about ships of this period and there was insufficient information to judge its importance as defined under the terms of the Protection of Wrecks Act 1973. It seems that English Heritage were not party to these discussions.
- 3.6. Although it was decided not to apply for designation, the National Maritime Museum and the PLA continued archaeological investigations to assess the importance of the wreck and if possible to identify the ship (McGrail, 1975). The PLA also agreed to continue monitoring the site and to use their 'powers to dissuade interference' (McGrail, 1975).
- 3.7. By June 1975, it had been established that the cargo of the ship mainly comprised copper plates and baled iron rods, with stacked bottles of wine and glass sheets also observed (van der Merwe, 1975c). The wreck was also noted to be more disintegrated than originally thought, although the upright posts were confirmed as

stanchions, and a possible keel timber was observed running along the centre of the wreck (van der Merwe, 1975c) (Figure 2).

- 3.8. In conjunction with the start of clearance operations to make the channel safe for navigation, further diver investigations were undertaken in October 1975 by the PLA and the National Maritime Museum. The clearance involved reducing the height of the wreck above the seabed, with diver observations for archaeological purposes and to record the material removed. Diver operations were curtailed however owing to rough weather (van der Merwe, 1975d). Plans to photograph the wreck were abandoned owing to poor visibility on the site (van der Merwe, 1975d). Despite this a diver was able to identify a large projection:

*“...which was stropped with a steel wire and hauled onto the deck of the salvage vessel. It proved to be parts of two ship’s ribs attached to an inboard strake by square iron nails.” (van der Merwe, 1975d)*

- 3.9. The timbers were photographed on deck and a section was cut from one end including a ‘well preserved rebate’, before the disposal of the remains (van der Merwe, 1975d).
- 3.10. On a subsequent clearance dive, one of the upstanding posts was identified between the copper cargo and an anchor pile (Figure 2). In order to reduce the height of the wreck, an attempt was made to recover the post by ‘drawing it out like a tooth’ but it could not be moved (van der Merwe, 1975d). The post was then broken off level with the seabed, and upon recovery to the surface it was observed that there was what appeared to be a tenon joint on the exposed end (van der Merwe, 1975d).
- 3.11. One specimen of the copper plate money, dated 1749, was also recovered as a ‘souvenir’ during this phase of diving (van der Merwe, 1975d). This highlighted the conflicting interests between the divers employed to carry out the clearance operations and National Maritime Museum:

*“We have reiterated the point that both for scientific and more particularly security reasons material from the site must not get into unrestricted circulation at this time. This incident emphasises the problem of maintaining the co-operation and goodwill of all the divers and crews who are helping us; there is a tradition that anything in the river is fair game and unless some firm assurance is given that there will be souvenirs when the work is done, there will be resentment and pilfering which it will be impossible to prevent. We have told the divers that consideration has been given to this question and that if possible there will be provision made for ‘souvenirs for*

*those immediately concerned' when the nature of the cargo is fully established." (van der Merwe, 1975d)*

- 3.12. No further reports of collecting 'souvenirs' were identified in the site archive, and it appears that a successful working relationship developed with the divers.
- 3.13. Following the diving operations on the site, external specialists were consulted for further assessment of the artefacts recovered. Assessment of the glass tumbler suggested that it was probably not English in origin, although the bottle neck was 'almost certainly from a British bottle' (Charleston, 1975). It was also suggested by the Wedgwood Museum that a fragment of ceramic with blue print may have a year of manufacture after 1805 and more likely 1815 or 1820, although this would be dependent on it being of an underglaze variety (Daniels, 1975). No further correspondence was identified in the archive clarifying the date of the ceramic fragment.
- 3.14. Although the International Distillers and Vintners Limited (LDV) were able to confirm that a corked bottle had contained wine, owing to contamination they were unable to determine its variety or origin (Clutton, 1975).
- 3.15. A shell recovered was identified as *Cyprae moneta*, also known as a 'money cowry', which had been widely used as currency in the Persian Gulf, the Indian Ocean, and the western Pacific (Way, 1975).
- 3.16. In 1975, following the site investigations, rapid shoaling took place at the north end of the South Edinburgh Channel which resulted in its closure to shipping and the removal of associated navigational buoys. The wreck site was therefore considered to no longer pose a hazard to navigation. The PLA and the National Maritime Museum agreed however that a survey should be carried out specifically for archaeological purposes. This was undertaken in Spring 1976 on the museum's behalf by Colin Martin, the then director of the Institute of Maritime Archaeology, St. Andrew's University (van der Merwe, 1976).
- 3.17. These investigations established that the glass bottles were packed in wooden crates measuring 1.8 – 2.4m long, stacked in at least three rows, two or more deep (van der Merwe, 1976). The bottles recovered from these crates were made of dark green glass with punted ends identified as being Continental in origin, possibly dating to

1800 or later (van der Merwe, 1976). Rope and leather shoes were also reported, although no samples were recovered (van der Merwe, 1976).

- 3.18. In March 1976, following the clearance operations, the National Maritime Museum and Institute of Maritime Archaeology (St. Andrews, Scotland) launched a two week joint project. The team consisted of Pieter van der Merwe and David Lyon from the National Maritime Museum, and Colin Martin, Keith Muckelroy, Paula Williams and Tony Long from St Andrews, with additional logistical support provided by the Royal Navy. Despite a total of 13 dives, work was severely hampered by bad weather and poor visibility. By the end of the season a few more artefacts had been recovered but the season is reported to have been largely ineffective (Parham, et al., 2013). Following these investigations the PLA and the National Maritime Museum agreed to jointly apply for the wreck to be protected under the Protection of Wrecks Act 1973.
- 3.19. The reasons cited for designation were that the wreck should be protected from unauthorised interference due to the historic importance of the eighteenth century Swedish copper plate money. Assessment by the Royal Coin Cabinet, State Museum of Coins and Medals (Kungl Myntkabinettet, Statens Museum for mynt medalj och Penninghistoria), Stockholm of the recovered copper plates stated that they were of great value to Swedish economic historians and numismatists. The rarity of the cargo was also noted by Bartel Tingström, an expert on Swedish coins, who stated that no other Swedish copper cargoes were known from this period (Redacted, 1976). More recently a second vessel containing Swedish plate money, the *Nicobar*, has been discovered off the South African coast.
- 3.20. It was further noted that the site would benefit from further archaeological investigation and could be a focus for developing new archaeological techniques when working in low to zero visibility (Redacted, 1976). It was observed that the commercial value of the copper plate money, estimated at £200 upwards per plate, may attract salvagers to the wreck but that the site location and challenging conditions offered relatively easy protection.

***Post-designation: 1977 - 2017***

- 3.21. The site was designated under the Protection of Wrecks Act 1973 in April 1977 (Vincent, 1977). It was noted, however, that there had been some 'considerable discussion' as to whether to grant the application as it had not been accompanied by an application to carry out further work on the site (Vincent, 1977). The hoped for

archaeological investigations by the PLA and National Maritime Museum following designation were never realised, however, owing to the eastward movement of the North Shingles Sandbank which re-covered the site in 1977 (Parham, et al., 2013).

- 3.22. The site has subsequently been visited by archaeological diving contractors in support of the Protection of Wrecks Act 1973. This was undertaken by the Archaeological Diving Unit (ADU) in 1988, 1995, 1997 and 1999 and by Wessex Archaeology in 2009 (Parham, et al., 2013). In 1997 the ADU reported that no archaeological remains were seen during diving operations. A magnetometer survey, conducted subsequently, indicated that there was a large amount of ferrous material buried in the recorded position of the wreck (Archaeological Diving Unit, 1997). This was corroborated when the ADU carried out another magnetometer survey in 1999, stating that the site was still buried and was 'not considered to be under any threat' (Archaeological Diving Unit, 1999).
- 3.23. A marine geophysical survey was undertaken by Wessex Archaeology in 2009 which also recorded a high amplitude magnetic anomaly at the recorded position of the site (Parham, et al., 2013). No corresponding debris was identified on the seabed which suggests that the wreck was still entirely buried.
- 3.24. A licence application was granted to visit the site in 1999, but owing to bad weather the licensee was unable to dive the wreck (Redacted, 1999). Licences were also granted to David Parham (Bournemouth University) in 2003, 2004 and 2005 but no fieldwork was carried out as the PLA reported each year that the site was still covered by sand (Parham, 2003; Parham, 2004; Parham, 2005). Licences were also issued to Steve Ellis (licensee of the *London*) in 2014, 2015 and 2016, although he has not yet visited the site (Alison James, pers. comm.).

#### 4. OVERVIEW OF THE VESSEL

- 4.1. Archaeological investigations described a wreck site measuring at least 35m long by 15m wide, suggesting a vessel of more than 100 tons (Parham, et al., 2013). The remains have been provisionally identified, from the cargo of Swedish copper plate money, iron anchors, bars and sheet glass noted by divers, as those of a Swedish, or possibly English, cargo ship dating from the mid-eighteenth to early nineteenth centuries. Owing to the limited information regarding the vessel and its sinking, no ships have yet been identified that are likely to correspond conclusively to records of losses from either the Lloyds List or those of the Swedish East India Company.



- 4.2. Reports from the initial diver investigations indicate the vessel was constructed from frames with cross-sections measuring c. 300mm by 245mm and spaced c. 300mm to 400mm apart. Possible stanchions have been identified rising from the seabed, and it has been suggested that a heavy longitudinal timber may be the keelson. The recorded structure is thought to be the remains of the lower hold with possible elements of the orlop deck surviving at the north and south ends of the site (Parham, et al., 2013).

## 5. ASSESSMENT AGAINST NON-STATUTORY CRITERIA

- 5.1. The following assessment of the South Edinburgh Channel designated area is based on the non-statutory criteria set out by Historic England for choosing which wrecks to designate (English Heritage, 2010).

### ***Period***

- 5.2. Items of the cargo, including plate money and ceramics, indicate that the vessel was constructed, operated and sank in the mid-eighteenth to early nineteenth centuries. No ships have yet been identified that conclusively correspond with the wreck in records of losses from either the Lloyds list or those of the Swedish East India Company.

### ***Rarity***

- 5.3. Little is known about the construction of the vessel, although its rarity is considered high due to its cargo of Swedish plate money. This cargo of plate money was one of the original reasons for designation and this is still thought to be the only wreck identified in Europe with this type of cargo. The wreck of the *Nicobar* was discovered by divers on the west coast of South Africa in 1987, with a reported cargo of 3,000 pieces of Swedish plate money (New York Times, 1989). The *Nicobar* is reported to have been a Danish East Indiaman which sank in July 1783 having started its voyage in Cronberg, Sweden. Unfortunately there seems to have been little archaeological investigation of the wreck and many of the coins have now entered the commercial market, including rare seventeenth century plates (New York Times, 1989).

### ***Documentation***

- 5.4. There is no known documentary evidence relating to the construction or wrecking of the vessel in the South Edinburgh Channel as the vessel has yet to be positively identified.



**Group value**

- 5.5. It has been suggested that the vessel may have been an English or Swedish East Indiaman. If this is the case it could add to the understanding of the vessels used by these companies.

**Survival/condition**

- 5.6. The initial diver observations suggest that the remains of the wreck were in good condition, with limited evidence of deterioration although later investigations suggested that state of preservation was worse than initially thought. The PLA clearance operations included the removal of some elements of the wreck structure, with descriptions suggesting this required a good deal of effort. The wreck has been buried under sand since 1977. As such it is likely to be in a similar state of preservation to that observed at the time of its designation. This would mean that one or more decks may be preserved in addition to the keel and elements of the ship's cargo.

**Fragility/vulnerability**

- 5.7. The wreck is thought to be well protected whilst it remains buried in the sandbank, although no sub-bottom data is available, so further work would be required to determine the current depth of sand over the site. Should the course of the channel change, as it did in 1972, the wreck may again become exposed thus increasing its vulnerability.

**Diversity**

- 5.8. The vessel has not yet been positively identified although the structural elements appear to conform to what would be expected for the mid-eighteenth to early nineteenth centuries. The cargo of plate money is thought to be unique, however, and contributed to the site's original designation.

**Potential**

- 5.9. The potential of the wreck is thought primarily to derive from its surviving cargo. This includes the rare evidence of transport of plate money beyond Sweden's borders and the possible survival of wine, some of which may not have been contaminated, so could be analysed to determine origin.

## 6. DISCUSSION

- 6.1. The investigation of the wreck in the South Edinburgh Channel can be considered an important point in the development of methods in marine archaeology in the UK. It not only represents an early example of archaeologists working in conjunction with commercial interests but it also marks a notable change in the approach to historic wreck sites. Initial reports from the National Maritime Museum suggest that until this point the investigation of wrecks had been undertaken in reasonably favourable conditions whereas the conditions, in particular the poor visibility, experienced in the South Edinburgh Channel offered new challenges (van der Merwe, 1975a). Without the ability to take site photographs or to even view the remains as a cohesive whole, the interpretation of the wreck was therefore based on diver descriptions of individual elements of the wreck which were later pieced together. Although these conditions are commonplace today, the work on this site represents the early development of suitable methodologies to deal with them.
- 6.2. With the available information, and the wreck location and cargo, it seems most likely that the vessel was either a Swedish, or possibly English, East Indiaman. The evidence from the site of the Danish vessel *Nicobar* does, however, indicate that vessels from other nations also carried plate money. It is therefore possible that the South Edinburgh Channel wreck may have been sailing under the flag of a nation other than Sweden. As noted by the Royal Coin Cabinet, State Museum of Coins and Medals in Stockholm, Swedish plate money was not widely circulated outside Sweden (Redacted, 1976) and a cargo of this type still appears to be rare.
- 6.3. The remains of the vessel may warrant further investigation, not least because the most recent geophysical surveys did not utilise techniques, such as sub-bottom profiling, that could, if site conditions are compatible, provide information on the depth of burial. A magnetometer survey conducted by Wessex Archaeology in 2009 located a concentration of ferrous material, whilst a multibeam echo-sounder survey conducted by the PLA in 2014-15 confirmed that the site was still covered by sand.
- 6.4. If site conditions are compatible a sub-bottom survey of the site using parametric sonar or 3D Chirp systems could not only determine the depth to which the wreck is currently buried but may also provide far greater detail regarding the nature and extent of the buried remains. This information would be useful for directing the future

management of the site, while further investigation may reveal evidence to enable the identification of the vessel.

- 6.5. Thus if further site investigations are considered desirable they might include:
- A focussed sub-bottom profiling survey, possibly using 3D Chirp if site conditions are compatible, to determine the current depth of burial, as well as the nature and extent of the wreck; and
  - Further archival research to investigate the identity of the vessel.
- 6.6. It is believed that the PLA continues to regularly monitor the South Edinburgh Channel for navigation purposes. If this monitoring revealed any significant variations in seabed mobility, then this information would presumably be shared with Historic England and further archaeological investigations over the site would be commissioned in order to re-assess the level of risk posed to the site by these movements. If any of the site were to become exposed as a result of sediment mobility, then dendritic samples may be obtained that might aid in determining the vessel's date of construction and point of origin.

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