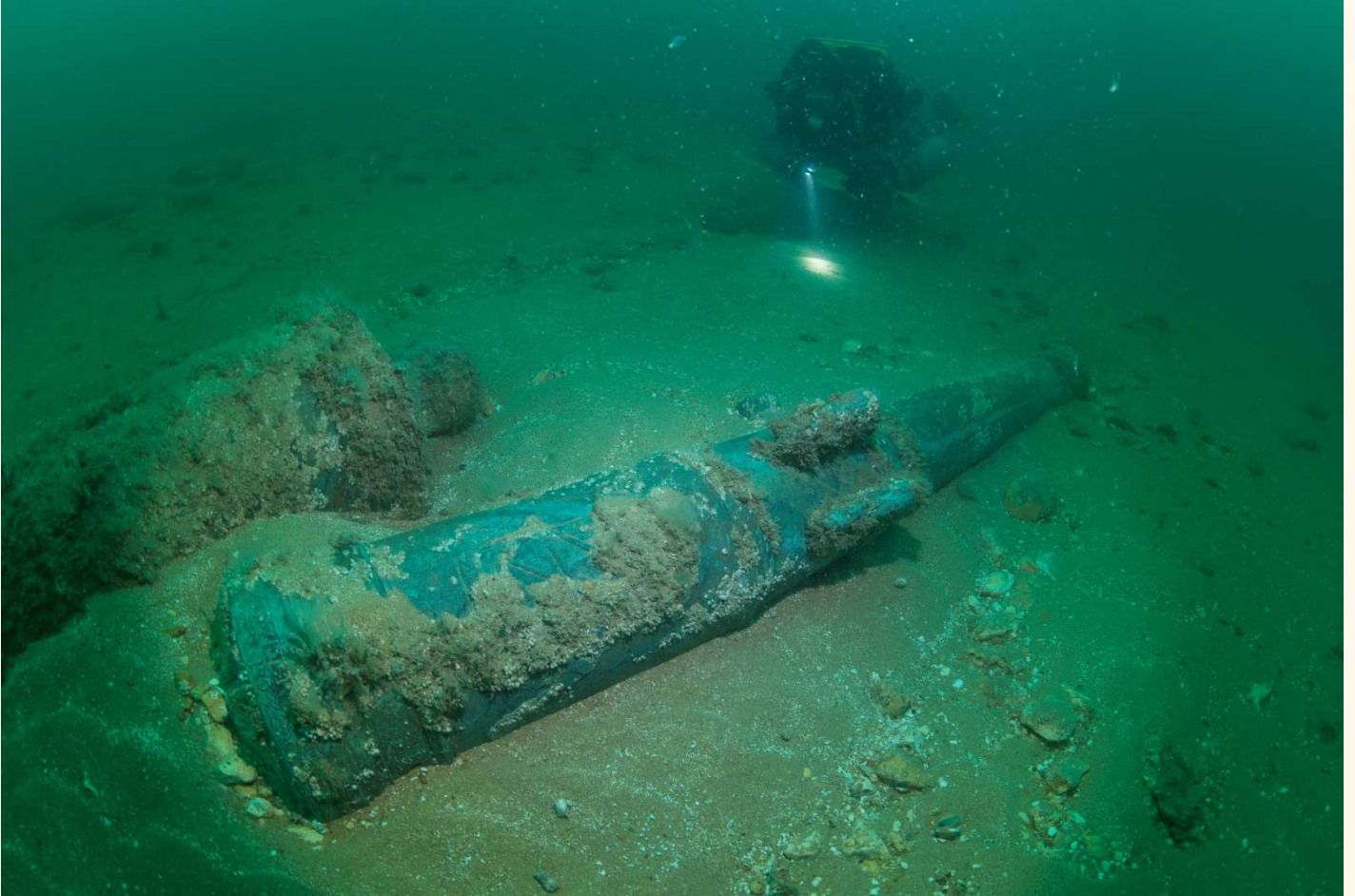


# Understanding the Klein Hollandia Shipwreck



## 2023 Investigation Report

Prepared for the  
**The British Sub-Aqua Jubilee Trust**

April 2024



Nautical Archaeology Society

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Cover image: Cannons 1 & 2 on the Klein Hollandia © NAS / Cathy de Lara.

## 1.0 Summary

- 1.0.1 The Unknown Wreck off Eastbourne, off the Sussex coast, was designated under the Protection of Wrecks Act (1973) in 2019. At the time of designation, it was believed that the wreck was most likely a Dutch warship dating to the 17th century.
- 1.0.2 It was initially speculated that the wreck may be one of the Dutch ships lost during the Battle of Beachy Head which took place off the Sussex coast of England in 1690. However, subsequent research undertaken in both England and the Netherlands identified the wreck as the remains of the Dutch warship, the *Klein Hollandia*, lost in 1672 during the Battle of the Smyrna Convoy. The identification of the wreck as the *Klein Hollandia* was announced on the BBC *Digging for Britain* television show that aired in January 2023.
- 1.0.3 Since 2019 the wreck has been visited and investigated by the Nautical Archaeology Society (NAS) and the Nautical Archaeology Sub-Aqua Club (NASAC), BSAC Branch 2574. Representatives of the Cultural Heritage Agency of the Netherlands visited the site in 2022 and 2023. These visits have helped to illuminate the nature and extent of the assemblage on the seabed as well as helping to protect the wreck by having a regular presence on site.
- 1.0.4 This report has been drafted for the British Sub-Aqua Jubilee Trust (BSAJT) who in April 2023 kindly awarded a grant of £1,000 towards the investigation of the *Klein Hollandia* shipwreck undertaken in August 2023 by NASAC, supported by the NAS.

## 2.0 Aims and Objectives

- 2.0.1 The principle aim of the August 2023 investigation on the *Klein Hollandia* wreck was the detailed examination and documentation of the visible timber ship structure to aid the understanding of which part of the 17th century ship actually survives on the seabed.
- 2.0.1 These dives would help inform future work, including the recovery of samples of timbers for dendrochronological dating and provenance identification of the wood used to build the ship.
- 2.0.2 The six objectives of the BSAJT supported expedition undertaken in August 2023 were:
- To produce measured drawings of sections of the timbers to understand ship construction and fastening techniques;
  - To undertake a photogrammetry survey of the sections of the timbers;
  - To digitally draw up the photogrammetry survey to add to the site plan;
  - To interpret and to report on the structural elements recorded to identify which part of the ship is on the seabed;
  - To make timber selection recommendations for dendrochronological sampling in September 2023;

- To undertake a marine biological *SeaSearch* survey of the wreck.

## 2.1 Report Authorship and Ownership

- 2.1.1 This report has been authored by Mark Beattie-Edwards, MA, MCIfA, Chief Executive Officer of the NAS and Diving officer of NASAC.
- 2.1.2 Mark has held a license to visit and investigate the *Klein Hollandia* site since the wreck was legally protected in 2019.
- 2.1.3 This report has relied on information provided by Historic England, Wessex Archaeology, Cultural Heritage Agency of the Netherlands (RCE), and other licence holders under the Protection of Wrecks Act (1973). Information and data provided by them will remain their copyright.
- 2.1.4 The NAS and NASAC hold the copyright to this report. Individual images remain the copyright of the originators. Permission to use images from within the report is still required from the image originator.
- 2.1.5 A digital copy of the report has been submitted to the BSAJT as a pdf file which can be read in *Adobe Reader*. The digital archive of information related to the project will be held by the NAS in perpetuity.
- 2.1.6 It is expected that the BSAJT will publish the report online via their website.

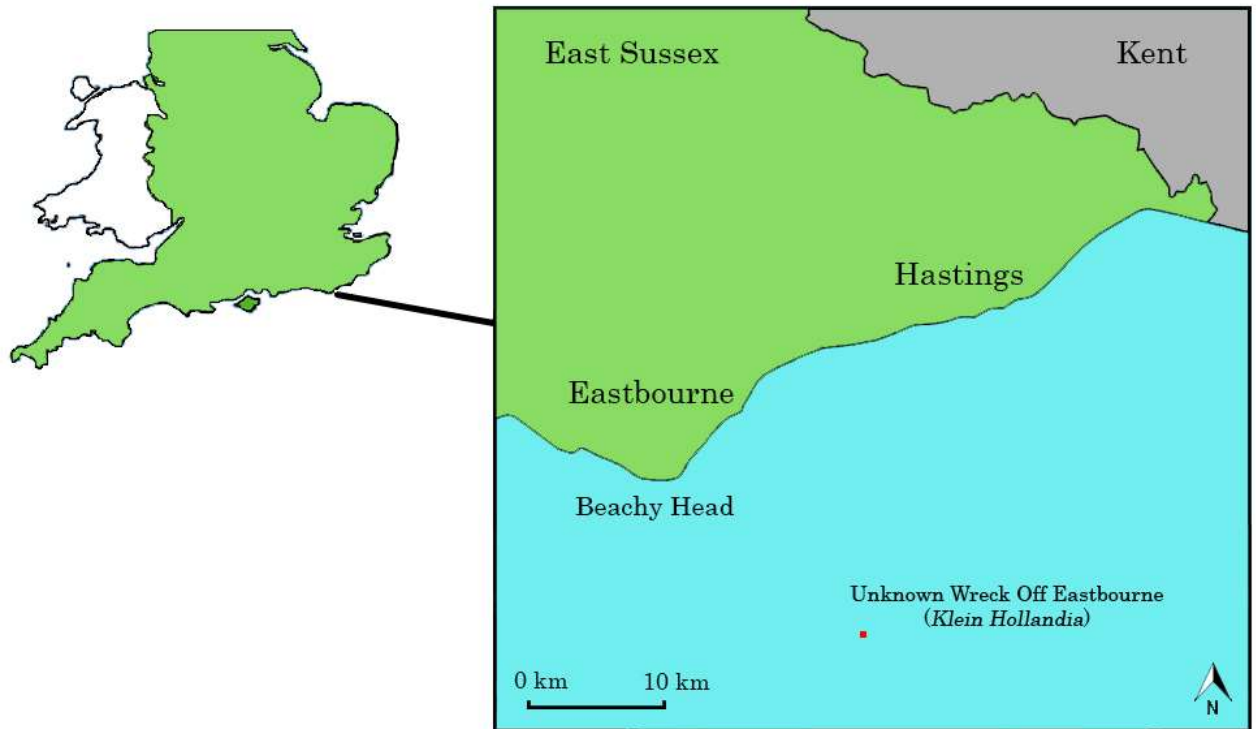
## 3.0 Protection of the *Klein Hollandia*

### 3.1 Protection of Wrecks Act (1973) Designation

- 3.1.1 The Unknown Wreck off Eastbourne is an archaeological site designated under Section 1 of the Protection of Wrecks Act (1973), lying off the Sussex coast (Fig.1). The designation order (Statutory Instrument No.1068) under the Protection of Wrecks Act (1973) for the Unknown Wreck off Eastbourne, dated 1<sup>st</sup> July 2019, was laid before Parliament on the 4th July 2019 and came into effect on the 5th July 2019.
- 3.1.2 In the designation orders explanatory notes, it states that an area within a distance of 100 metres of Latitude 50.65043000, Longitude 00.39670000 designated as a restricted area.
- 3.1.3 The National Heritage List for England provides the following locational information for the wreck.

Marine Location Name	EASTBOURNE EAST SUSSEX
Latitude	50.65043000
Longitude	0.39670000
National Grid Reference	TV6952886157





**Figure 1. Location of the Unknown Wreck off Eastbourne designated wreck, now identified as the Klein Hollandia.**

- 3.1.4 The wreck is designated as the Unknown Wreck off Eastbourne. It was initially speculated that the wreck maybe one of the Dutch ships lost during the Battle of Beachy Head which took place off the Sussex coast of England in 1690. Subsequent research undertaken since the designation indicates that the wreck is likely to be the remains of the *Klein Hollandia*, a Dutch warship that sank off the Sussex coast in 1672. Hereafter in the document the wreck will be referred to as the *Klein Hollandia*.
- 3.1.5 The entry number for the wreck on the National Heritage List for England (NHLE) is 1464317 - see <https://historicengland.org.uk/listing/the-list/list-entry/1464317>
- 3.1.6 The stated principal reasons for designation listed on the NHLE are:
- Historical importance: the discovery of an assemblage of cannon, and the association of other material provides an initial interpretation that this wreck comprises the remains of a 17th Century Dutch vessel.
  - Archaeological importance: The recent discovery of this wreck is suggestive of a long period of burial which indicates the possible presence of a small finds and organic material.
- 3.1.7 Access to the protected wreck is licenced by the Department of Digital Culture Media and Sport (DCMS) and administered by Historic England. Individuals need to apply for a licence to visit or to carry out work on the site. Since 2019 licences have been issued for visits to the wreck by David Ronnan, local charter boat skipper and the wreck finder.

Licences for diver survey, for at-risk artefact recovery and for timber sampling for dendrochronological analysis have been issued to Mark Beattie-Edwards.

- 3.1.8 All licence holders are required to submit names of visiting divers quarterly and to report on their activity to Historic England in annual reports normally submitted in the November each year.

## 3.2 Other Statutory Designations

- 3.2.1 Archaeological interventions that impact the seabed around the *Klein Hollandia* wreck may require a licence issued by the Marine Management Organisation under the Marine and Coastal Access Act 2009 and a licence from The Crown Estate. The investigation undertaken in August 2023, and reported here for the BSAJT, did not require additional licences from the Crown Estate or the Marine Management Organisation.
- 3.2.2 The *Klein Hollandia* site lies just to the south of the Beachy Head East Marine Conservation Zone (MCZ). This area is characterised by Sovereign Shoals, an extensive wildlife-rich sandstone reef with outcrops of chalk. Peat and clay exposures are also present. Marine life here includes a variety of sponges, anemones, native oysters and seahorses. Soft corals colonise the underside of slab surfaces together with tube worms. Animal 'reefs', known as biogenic reefs, occur here and this site provides one of the best regional examples of mussel beds. Biogenic reef structures made by mussels and ross worms provide homes for a diversity of marine life which would otherwise not be present on the seafloor. Fish found here include short-snouted seahorses, colourful cuckoo wrasse. This MCZ is also one of the most important nearshore nursery areas for plaice and Dover sole (Wildlife Trusts website).

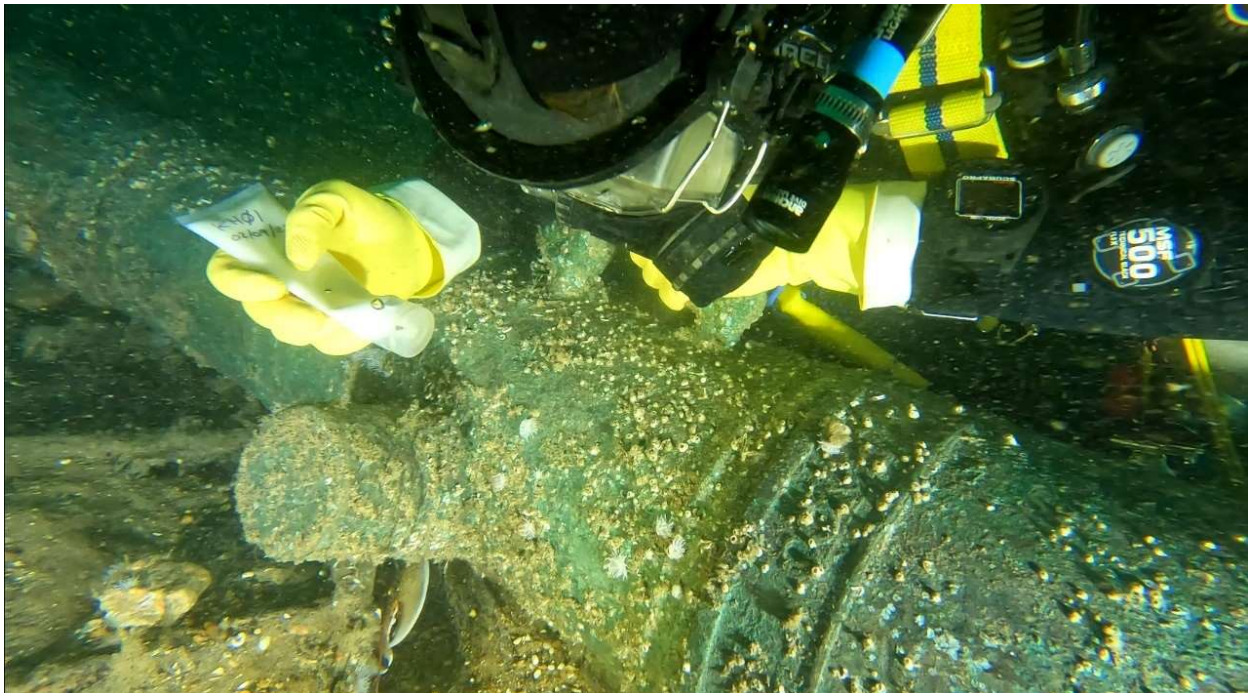
## 3.3 Wreck Ownership

- 3.3.1 As a Dutch sovereign vessel, the remains of the *Klein Hollandia* belong to the nation and government of the Netherlands. Historic England and the Cultural Heritage Agency of the Netherlands (RCE) have agreed to collaborate on activities directed at the site.
- 3.3.2 The seabed on which the wreck site lies is owned by the Crown Estate.

## 3.4 Protective markings

- 3.4.1 In September 2023 the *Klein Hollandia* was part of the Historic England and RCE funded Protective Marking for Protected Wreck Sites project (HE Project Number 7591). This work undertaken by MSDS Marine involved divers and archaeologists from MSDS Marine, the NAS and the RCE.
- 3.4.2 The protective marker was applied to several objects on the wreck including all the bronze cannons (Fig.2). This was the first time in the UK, that this new technology had been

used to forensically mark artefacts including cannons on one of England's most historic and archaeologically important protected wreck sites.



*Figure 2: A diver applying a protective marking solution to a bronze cannon on the Klein Hollandia. © MSDS Marine / Martin Davies.*

## 4.0 Accessing the *Klein Hollandia*

- 4.0.1 In 2019 the NAS began to visit the site with NAS members and recreational divers, including BSAC divers from NASAC. To date over 50 visits to the site have been made. All NAS and NASAC visits have been undertaken using the finder's charter boat, *Our W*, based within Sovereign Harbour, Eastbourne.
- 4.0.1 Surveys of the wreck have been undertaken by archaeologists from the NAS with funding from the RCE in 2020 and with funding from Historic England in 2021. In 2022 and 2023 archaeologists from the RCE dived the wreck with the NAS.
- 4.0.2 Since 2019 visits to the wreck by David Ronnan have been arranged privately and not advertised to the general public. Some visits by Mark Beattie-Edwards have been arranged as private visits, while many have been organised under the auspices of the NASAC (BSAC Branch No.2574).
- 4.0.3 In September 2023 the NAS began to host visits to the *Klein Hollandia* as part of their Protected Wreck Days programme. These visits invite divers and NAS members to visit and learn about (by diving on) two protected wrecks in one day – the *Klein Hollandia* and the Normans Bay Wreck. Both wrecks are accessible from Sovereign Harbour in Eastbourne and both wrecks are believed to be 17<sup>th</sup> century Dutch warships.



- 4.0.4 In 2023 there were three main dive charter boats operating out of Sovereign Harbour, Eastbourne. These boats are *Our W* (skipper David Ronnan), *Sussex Shipwrecks* (skipper Michael Keane) and *Channel Diver* (skipper Steve Johnson) which whilst moored in Brighton regularly uses Eastbourne as a base for diving. So far only *Our W* has taken divers to visit the wreck.
- 4.0.5 Two recreational diving clubs use Sovereign Harbour as their main area of operation in 2023. Sovereign Divers (BSAC Branch No.513) operates out of the Sovereign Harbour Yacht Club. Several members of Sovereign Divers have dived the wreck during visits organised by the licensees. Serenity Divers (BSAC Branch No.2622) have their own hard-boat (called *Serenity*) which is moored in, and operates out of Sovereign Harbour. Members of Serenity Divers have expressed interest in diving the wreck in 2024.
- 4.0.6 As physical access to the site is restricted to licensed divers, the legal recovery of artefacts material can be managed and controlled. Recovered artefacts are transported to the Historic England conservation facility in Fort Cumberland, Portsmouth. An agreement is in place between the Cultural Heritage Agency of the Netherlands, Historic England, and Bexhill Museum (Bexhill-on-Sea, Sussex) for the curation and storage of material. In 2023 a small collection of objects recovered from the *Klein Hollandia* wreck site were on display in the museum (Fig.3).



Figure 3: The *Klein Hollandia* exhibition at Bexhill Museum in August 2023 © NAS.

## 5.0 Understanding the *Klein Hollandia*

### 5.1 Discovery

- 5.1.1 In 2015 as part of a routine survey by the UK Hydrographic Office (UKHO) an anomaly was identified and numbered 83501. The anomaly was recorded as being at a least depth (or Lowest Astronomical Tide) of 27.86m, and in a general depth of 28.3m. It was recorded with a length of 37m, with a width of 15m, and a height of 1.5m. It was recorded as being a strong magnetic anomaly.
- 5.1.2 In 2016, David Ronnan and Sylvia Pryer, the owners and operators of *Our W* dive boat in Eastbourne noticed that a new position (No.83501) had been added to their digital navigation charts, and decided to add the position to their list of new sites to investigate.
- 5.1.3 The wreck was discovered on the 21<sup>st</sup> April 2019 when David Ronnan took two customers, Tom Stockman and Graham Owen, to dive anomaly 83501. Appreciating that the UKHO anomaly was magnetic the divers expected to find a modern metal wreck, but instead came across large, worked stone blocks, numerous iron cannons and several bronze cannons.
- 5.1.4 On the first dive Tom recovered two small pieces of white ceramics. One of these pieces was stamped *Limoge FRANCE* and was considered to be modern intrusion. The other piece (UID 001) was identified by a specialist as most likely being of Italian origin and dating to the 17<sup>th</sup> century (Fig.4). These recoveries were reported to the UK Receiver of Wreck.



**Figure 4: UID 001 recovered on the first dive in April 2019 (Scale 8cm) © NAS.**

- 5.1.5 After the dive David Ronnan contacted Mark Beattie-Edwards to inform him of their discovery. With other divers, including members of NASAC, Mark was able to subsequently dive, inspect and record the wreck on the 29<sup>th</sup> - 30<sup>th</sup> April 2019.
- 5.1.6 With the finders support, Mark informed Historic England of the discovery on the 2<sup>nd</sup> May 2019. On the 14<sup>th</sup> May 2019, Mark met with representatives of Historic England to share

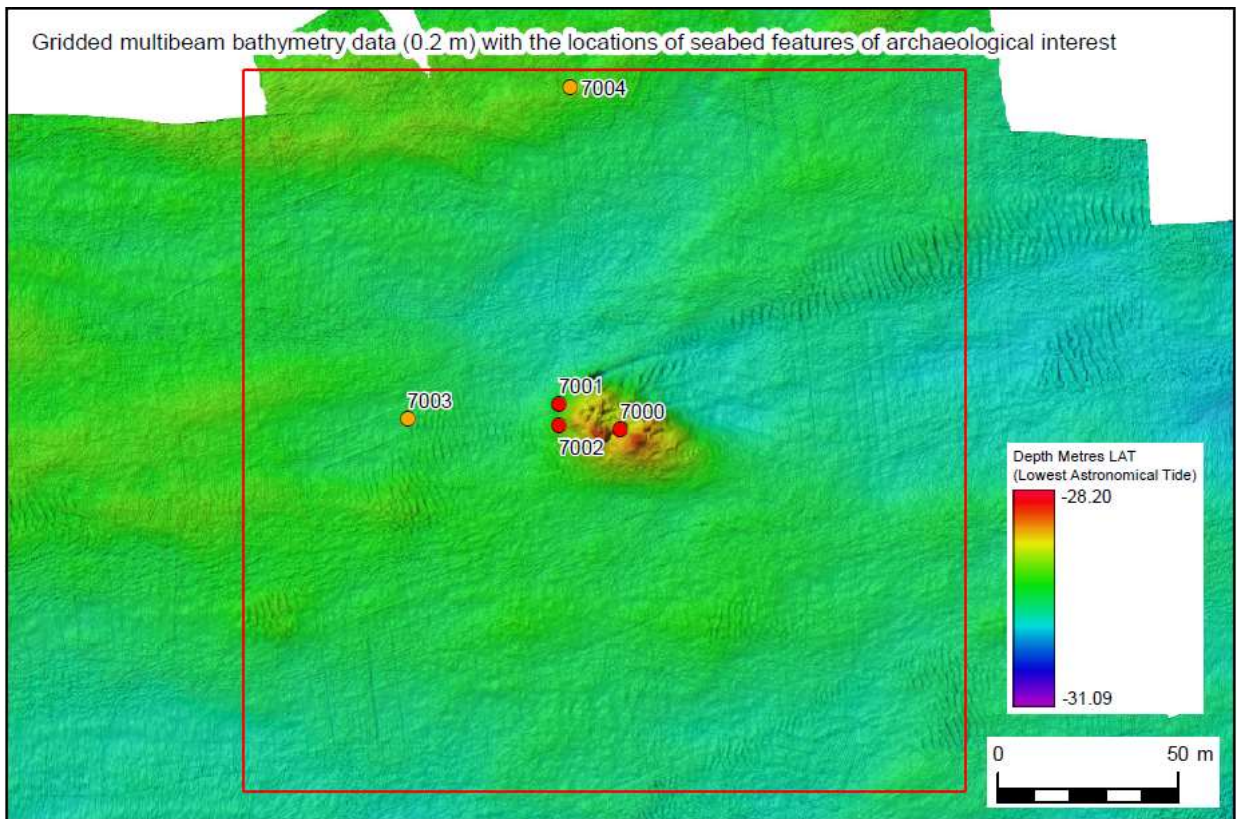


the photographs and videos taken on the April dives and agreed that the NAS would continue to visit and investigate the site.

- 5.1.7 Historic England recommended emergency designation of the site under the Protection of Wrecks Act 1973. All parties (including the finders) agreed that the details of the assemblage on the seabed, and the location of the wreck would not be announced due to the perceived vulnerable nature of some of the assemblage.

## 5.2 Geophysical Surveys

- 5.2.1 In 2019 Wessex Archaeology was commissioned by Historic England to undertake a geophysical survey over the site of a possible wreck off the coast of Eastbourne, where bronze cannons had been discovered by divers. The survey would be followed by an archaeological assessment of the acquired data to interpret the results, and to help establish extent, stability and character of the site to help inform designation assessment.
- 5.2.2 Wessex Archaeology mobilised onboard vessel *Our W* on the 16th July 2019 and the survey was undertaken on 17th July 2019. Wessex Archaeology acquired marine magnetometer data over the site and commissioned GEOSIGHT Ltd to acquire multibeam echosounder data and to provide positioning for the towed array, consisting of the magnetometer.
- 5.2.3 Originally, Wessex Archaeology were also commissioned to acquire sidescan sonar data. However, it was decided by the skipper of *Our W* that the sidescan sonar would not be deployed based on concerns over the deployment from the back of the vessel. As such, the 2019 survey consisted of multibeam echosounder and magnetometer only.
- 5.2.4 Data were planned to be acquired at a line spacing of approximately 30m, with the mainlines orientated north to south and the crosslines orientated east to west. However, due to conditions on the site, additional lines were added to ensure maximum coverage, which resulted in the line spacing being reduced to 15m in some areas. Two additional days of survey were planned, however these were not undertaken due to poor weather conditions.
- 5.2.5 In the 2019 multibeam survey a total of five features of interest were identified (Fig.5). One feature (7000) was characterised as a large mound with a corresponding magnetic anomaly, thought to represent the main wreck site. This was assigned an A1 archaeological discrimination, which is anthropogenic origin of archaeological interest. The remaining four features (7001 – 4) were mounds which are thought to possibly represent associated items of debris. Two of these (7001 and 7002) were located close to the wreck and, as such, were classified as items of debris and assigned an A1 discrimination. The remaining two features (7003 and 7004) were located further away from the main wreckage and therefore, as their origin was less certain, they were assigned an A2 rating, which is a feature of uncertain origin of possible archaeological interest (Wessex Archaeology 2019).

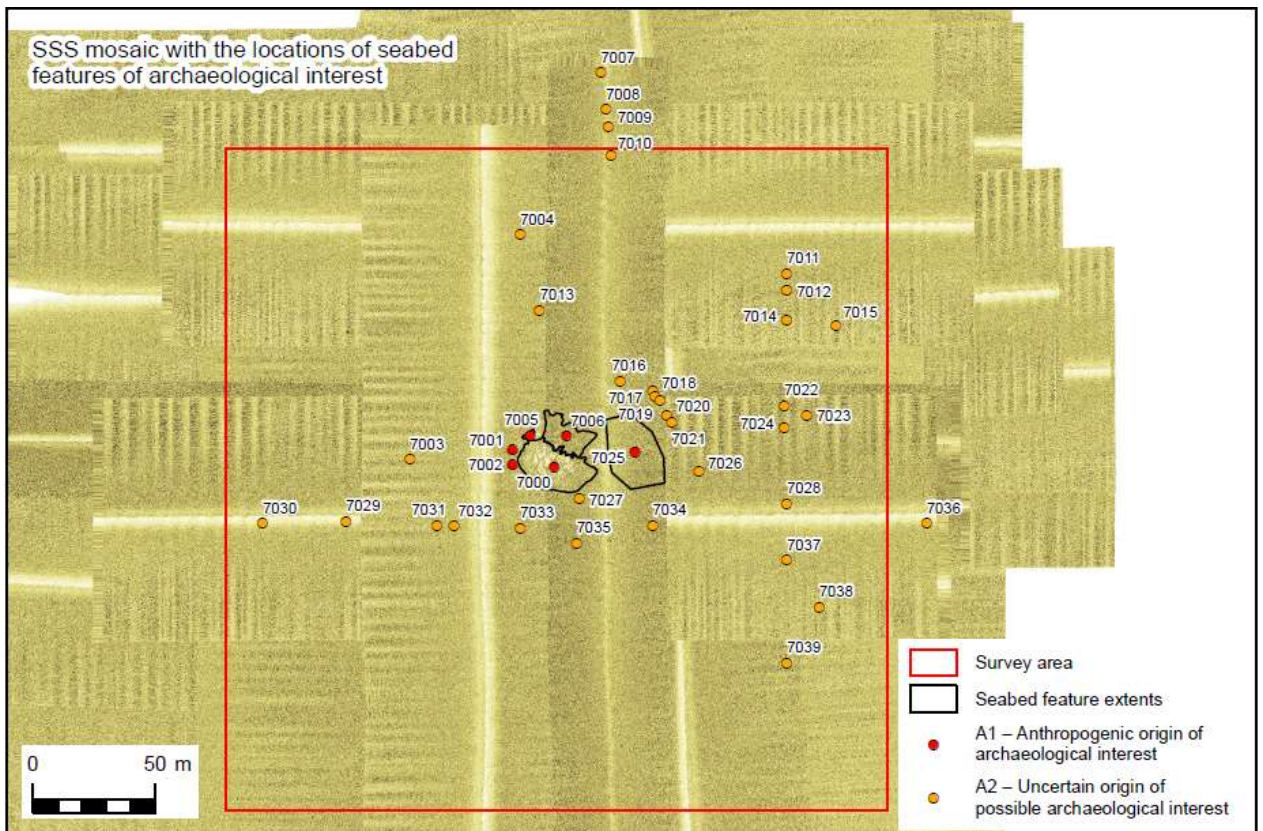


**Figure 5: Multibeam bathymetry with the five main seabed features of archaeological interest (7000 – 7004). Wessex Archaeology for Historic England © Wessex Archaeology.**

- 5.2.6 In 2021 Wessex Archaeology was commissioned by Historic England to undertake a second geophysical survey over the wreck site. The aim of this second survey was to utilise additional survey equipment, primarily sidescan sonar, as during the previous survey (undertaken in 2019) sidescan sonar data could not be acquired. The survey data were then archaeologically assessed to help establish the extent, stability and character of the site to help inform designation assessment.
- 5.2.7 Wessex Archaeology mobilised onboard the vessel *Algier Rose* on the 13th-14th September 2021 and the survey was undertaken over the 15th-16th September 2021. Wessex Archaeology acquired both sidescan sonar and marine magnetometer data over the site.
- 5.2.8 Data were planned to be acquired at a line spacing of approximately 30m, with the mainlines orientated north to south and the crosslines orientated east to west. The site was located, and equipment tested on the 15th September, with the full survey taking place on the 16 September 2021 (Wessex Archaeology 2021).
- 5.2.9 The multibeam echosounder data acquired during the 2019 survey were reassessed in 2021 in relation to the newly acquired data and formed part of the results. A total of 37 anomalies of archaeological interest were identified from within the three datasets (Fig.6). Six anomalies had been attributed an A1 discrimination which highlights material interpreted to be of anthropogenic origin and of archaeological interest.



5.2.10 Anomaly 7000 was a large spread of broken-up debris with a corresponding magnetic anomaly that corresponded to the main wreck site. Five surrounding features were attributed as ancillary anomalies directly related to this wreck site; 7001 and 7002 were small mounds thought to represent debris, whilst 7005 and 7006 were interpreted as debris fields, with some possible indication of partially buried debris. An area with a very large, complex magnetic response, represented by anomaly 7025, was also considered to represent buried ferrous material close to the wreck.



**Figure 6: Side scan sonar mosaic with locations of seabed features of archaeological interest. Wessex Archaeology for Historic England © Wessex Archaeology.**

5.2.11 A further 34 anomalies were identified and assigned a rating of A2; features of uncertain origin of possible archaeological interest. These primarily consist of magnetic anomalies that denote ferrous material either buried or with no surface expression.

5.2.12 Wessex Archaeology's 2021 reported that there was evidence from divers that the site may have been disturbed by trawling and other fishing activity that had taken place within the survey area. The report suggested that regular monitoring could be undertaken (by geophysical survey, diver or ROV investigation) to assess the long-term stability and condition of the site.

### 5.3 Description of surviving features

- 5.3.1 The range of material found on the seabed on the wreck includes extensive remains of the wooden hull structure, at least twenty-four iron cannons and eight bronze cannons, large dressed stone blocks, marble tiles, bricks, pieces of northern European and Italian pottery and numerous other artefacts linked to the crew and the operation of the vessel.
- 5.3.2 **Cannons:** It was the presence of ferrous material on the site led to the assumption that the anomaly on the seabed found by the UK Hydrographic office in 2015 was a wreck. Upon diver inspection it became apparent that numerous iron cannon scattered over the site would have created the magnetic signature.
- 5.3.3 Since diver inspections began in 2019 a total of 23 iron cannon and 8 bronze cannon have been found on the site. The majority of the cannons lie flat on the seabed, except one which was moved by a trawling event in late 2020 or early 2021 that resulted in it resting on a stone block and pointing upwards at an angle of c.40 degrees.
- 5.3.4 The 23 iron cannons are all heavily concreted and are yet to reveal anything useful. The 8 bronze cannons are less concreted although do exhibit barnacle growth. Divers have witnessed an increase in the presence of barnacles on the bronze cannons since 2019, suggesting that they had been buried under sand until very recently.
- 5.3.5 Markings have been recorded on three of the bronze cannons. Makers names on cannon No.1 and No.8 show that they were both made by Cornelis Ouderogge (1599-1672) (Fig.7). The Ouderogge's were a family of bronze founders that cast cannons, clock, bells and sculptures in Amsterdam and Rotterdam. Cornellis made cannons for the Rotterdam Council as well as the Admiralty of Rotterdam (also known as the Admiralty of the Maze) based in Rotterdam.



*Figure 7: Cannon No.1 made by Cornelis Ouderogge © James Clarke.*



5.3.6 Cannon No.1 has a date stamp of 1670 (Fig.8).

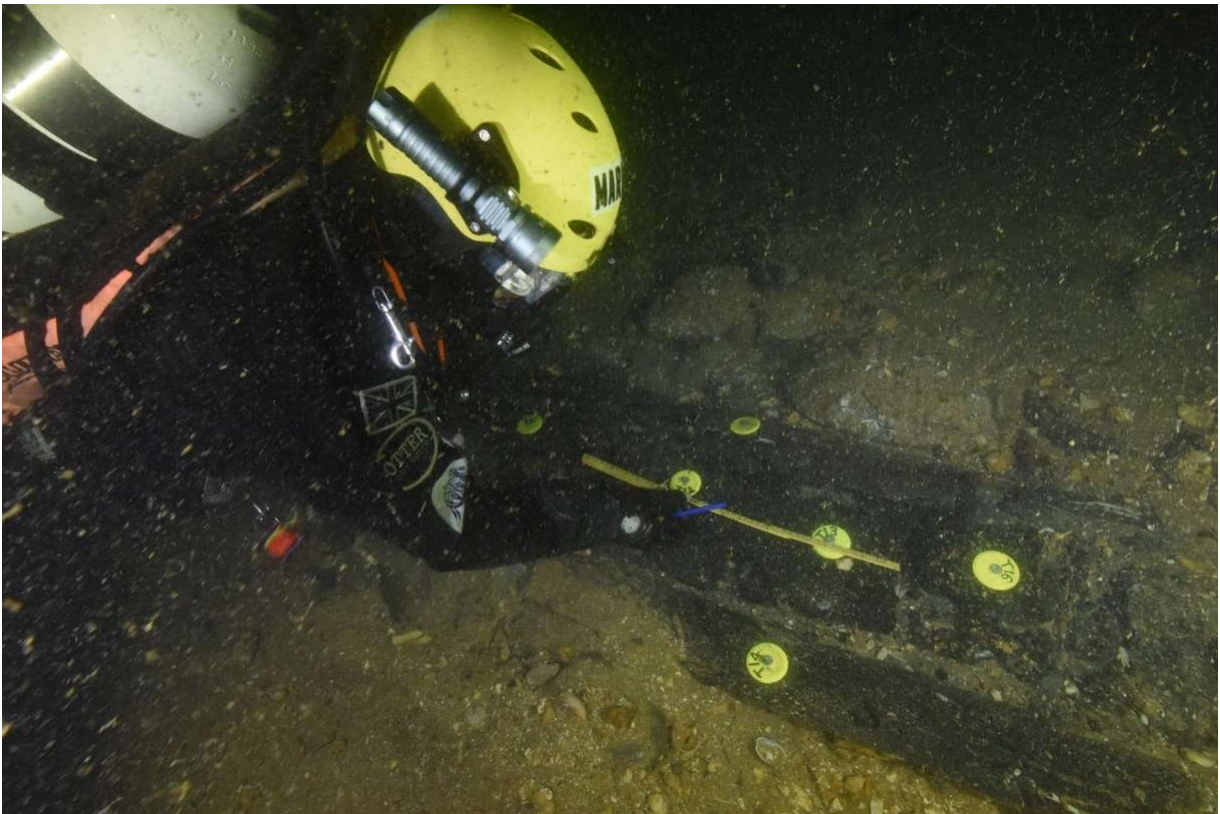


*Figure 8: The 1670 date visible on cannon No.1 © Martin Davies.*

- 5.3.7 Markings on cannon No.6 suggest it was also made for the Admiralty of Rotterdam. The marks include two crossed anchors and the initials P P P - for *Pro Patria Pugno*, which translates as "*I Fight for the Fatherland*" - the heraldic motto of the Admiralty of Rotterdam.
- 5.3.8 The remaining bronze cannons have not yet yielded any identifying marks.
- 5.3.9 Iron cannons make up the majority of the armament of the ship. So far 24 iron cannons have been recorded on the wreck, scattered all over the site. As would be expected all the iron cannons exhibit substantial layers of concretion meaning that it is not possible to see any identifying marks. Without concretion removal it would not be expected that the iron cannon would be able to reveal much more information about their type, age, or origin.
- 5.3.10 **Ship's Hull and Wood Samples:** Exposed sections of wood can be found scattered all over the wreck site. Investigations of the timbers carried out since 2020 have documented sections of the hull remains through photogrammetry survey and measured archaeological drawings.
- 5.3.11 The most coherent area of hull remains are to the south of the main assemblage, where a run of timber frame tops and associated planking stretches for over 20m in an east-west alignment (Fig.9).
- 5.3.12 The documentation of this area of timber and the presence of ballast stones suggests that this is very low down in the inner hull, and may represent the bottom frames of the ship, very close to the keelson. It is believed from the location of other features on the site, such as the galley hearth, that this is the starboard side of the ship.



- 5.3.13 In 2023 as part of the BSAJT supported expedition an area of coherent timbers were recorded to the south-west of the main assemblage. This section has been interpreted as the collapsed starboard upper parts of the hull consisting of outer planking, frames and inner planking. Although samples have not yet been taken from this area it appears that all timber elements are oak.
- 5.3.14 In 2022 a small number of wood samples were recovered from the site for dendrochronological analysis. To date only two conifer hull internal ceiling planks (T1 and T5) and a single oak ceiling plank (T8) have been sampled (Fig.10). The analysis of the only structural oak timber (undertaken by DendroArch and funded by Historic England) indicates that at least some of the timbers employed in the ship's construction was sourced from modern Germany, an area where the Dutch sourced their wood in the 17th century. The report highlights the dating potential of the oak structural timbers which await future sampling stating that *“only sampling and analysis of timbers which retain partial or complete sapwood will improve dating precision”* (Nayling & Tyers 2023).



**Figure 9: Recording the timber frames in the southern area of the site.**  
© Martin Davies.

- 5.3.15 **Stone Blocks:** The most prominent features on the wreck are at least eight large stone blocks. Six of the blocks are rectangular in shape, the largest of which is c.3.8m long. Two of the blocks are square in shape measuring c.1.5m. The geology and origin of the large blocks is unknown, but it can be postulated that the blocks were most likely bound for the Netherlands to be used for the construction of high-status homes or municipal buildings.



*Figure 10: Timber samples T1 (upper) and T8 (lower). Scale 8cm © NAS*

- 5.3.16 **Marble Tiles:** In the western area of the main assemblage there is a significant number of cut stone tiles that form a distinct mound. The exact number of tiles is yet to be determined, but in 2023 divers counted at least 109 tiles. Most appear square in shape and measure around 37cm x 37cm, but they do appear to be of two different thicknesses, either 2cm or 4cm thick.
- 5.3.17 In 2020 the RCE funded a survey by the NAS, that included the recovery of two cut stone tiles for analysis by Historic England material scientists (Fig.11). Petrographic examination including mineral composition and isotope analysis identified the stone as being marble from the Apuan Alps quarries close to Carrara, Italy, home to some of the finest marble in the world (Gherardi 2021).



*Figure 11: Marble tile UID 8 recovered for analysis (Scale 20cm) © Historic England.*

5.3.18 **Hearth Bricks:** Since the first pre-designation dives undertaken on the wreck in April 2019, it has been noticed that a large number of yellow bricks were scattered all over the site. During the 2020 investigation a coherent area of bricks to the south-east of the main assemblage was recorded (Fig.12).



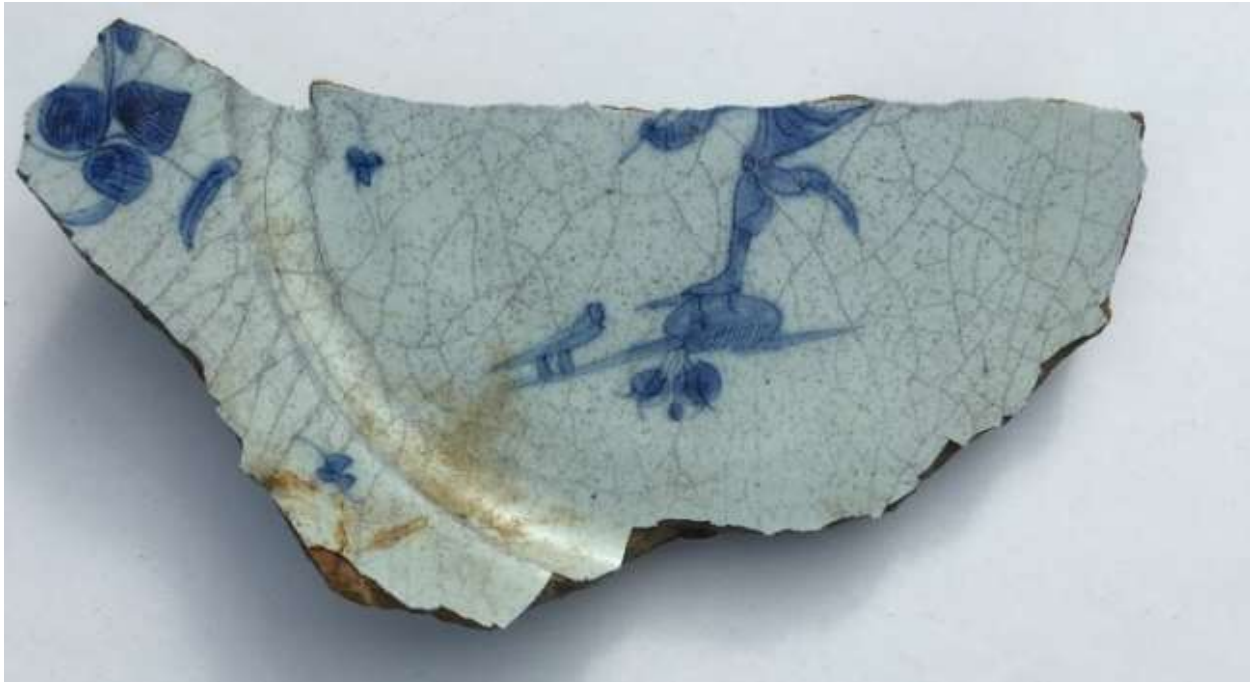
*Figure 12: Photogrammetry survey of galley hearth © NAS / Martin Davies.*

5.3.19 The bricks appear to form a floor, presumed to be the hearth in the galley area of the ship. Whilst other single bricks are scattered over the site, the bricks in the hearth area are bonded together with cement. Subsequent investigation has shown the floor of bricks to be at least twelve courses thick, but without excavation it is not possible to determine conclusively just how the hearth was constructed. In the 17<sup>th</sup> century ships galleys were normally located on the forward area of the ship, forward of the main mast.

5.3.20 **Ceramics:** Since 2019 the wreck has revealed numerous pieces of ceramic, including Northern European domestic wares. In 2019 a complete Bellarmine jug that still had the cork in place was discovered and recovered for conservation. A smaller jug was found and recovered in 2023. Numerous fragments of Italian majolica pottery have been recovered to aid the identification of the ship. All the majolica pieces observed and recovered are decorated with a white tin-glaze and painted with a blue nature themed design (including plants and animals) and are suggestive of a 17th century date, originating from the area around Savona, to the west of Genoa in Italy (Fig.13).

5.3.21 In September 2021 divers observed numerous intact plates and jugs, decorated with the same Italian design as those previously recorded and recovered. These pieces appeared to be neatly stacked and packed as if originally in boxes or crates. They were photographed and covered with sandbags for their protection. The sandbags remained in place during investigations in 2023.

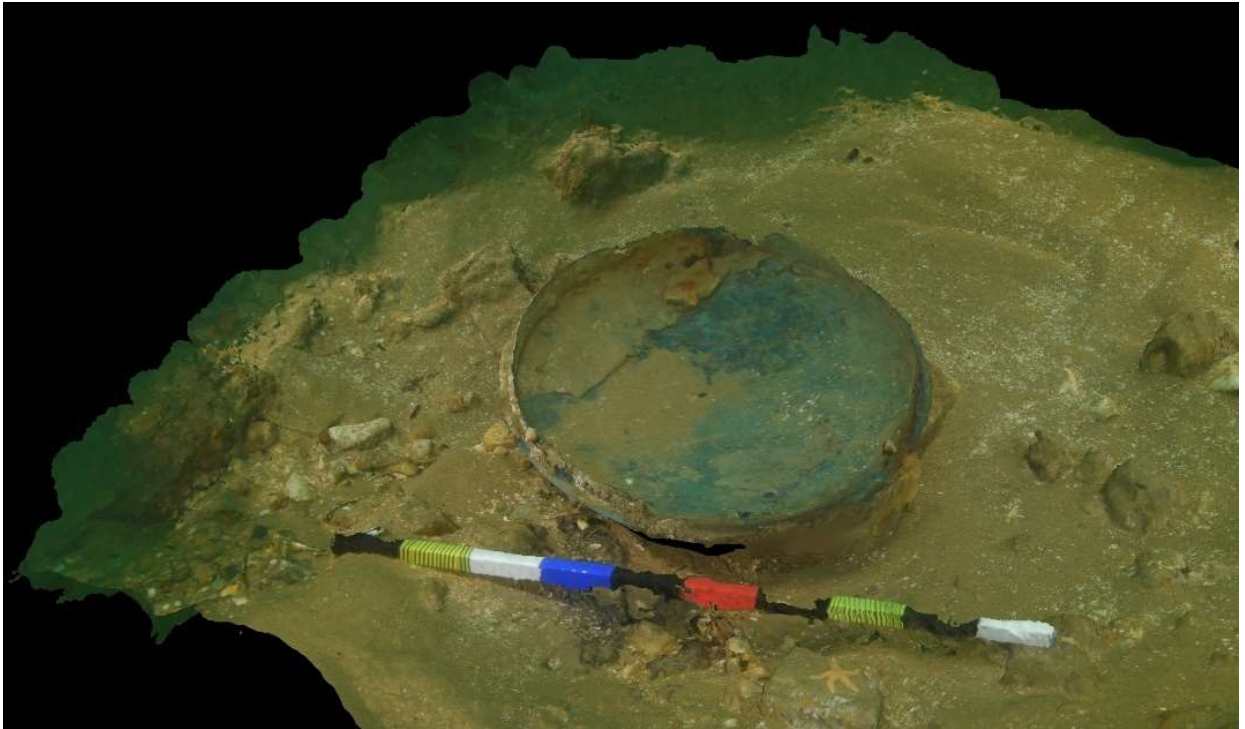




*Figure 13: Plate fragment (UID 010) with glaze and decoration recovered in 2021 © NAS.*

5.3.22 **Human remains:** Two elements of human remains have been found on the wreck since its discovery. One was a complete ulna and one a section of cranium. Both were recovered and then transferred to the Historic England Conservation facility at Fort Cumberland, Portsmouth before being transferred to Bexhill Museum for curation. In both cases the Sussex coroner and the UK Ministry of Defence were contacted, and permission for recovery was obtained from Historic England.

5.3.23 **Other finds:** Other objects recovered from the site include a copper cauldron lid, several pewter plates and bowls and a bronze pulley sheave that was probably used as part of the ship's rigging. Since 2019 what is thought to be the base of a copper cauldron has been seen on the wreck (Fig.14). The burial state of the cauldron base changes periodically, sometimes being more buried than on subsequent visits. It is noticeable from the surveys undertaken in 2021 and 2022 that the cauldron base is not stable and clearly moves around the site.

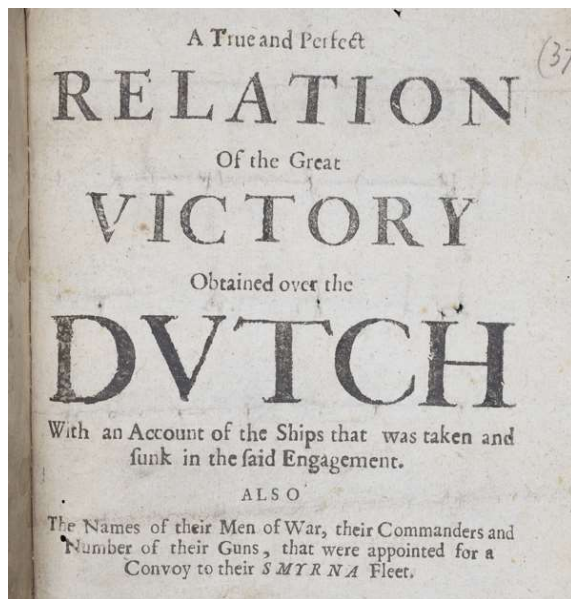


*Figure 14: Photogrammetry of copper cauldron base (Scale 1m) © Martin Davies.*

## 5.4 Historical Research and Gaps in Existing Knowledge

- 5.4.1 In 2019 when the 83501 anomaly was first dived it was speculated that the wreck maybe one of the Dutch ships lost during the Battle of Beachy Head which took place off the Sussex coast of England in 1690. The Normans Bay Wreck, a wreck designated under the PWA, lying in Pevensey Bay, East Sussex (Nautical Archaeology Society 2017) is believed to be the *Wapen van Utrecht* (Beattie-Edwards 2018). The 64-gun *Wapen van Utrecht* (or *Stad Utrecht*) commanded by Captain Pieter Claassen Decker was reported by Gillis Schey, the Dutch rear admiral on the *Prinses Maria* as sinking 'along the English coast' (Europische Mercurius, July 1690: 47).
- 5.4.2 The subsequent archaeological investigation and historical research undertaken in both England and the Netherlands identified the Unknown Wreck off Eastbourne as the remains of the Dutch warship, the *Klein Hollandia*, lost in 1672 during the Battle of the Smyrna Convoy. This battle led to the declaration of the Third Anglo-Dutch war (1672-1674). Historical research has begun to shed light on this little-known naval battle, the importance of Dutch merchant convoys to the Mediterranean in the late 17<sup>th</sup> century, and the aftermath of the engagement that included the declaration of the Third Anglo-Dutch war (1672-1674).
- 5.4.3 Whilst several contemporary accounts of the Battle of the Smyrna Convoy, by the English and the Dutch have been found (Fig.15), the research into the convoy's destinations, route and voyages, their cargo as well as the named ships and crew is still in its infancy.





Divers of our Smyrna Fleet are arrived in Zealand and in the Maes, together with the Men of War, under whose Convoy they were, though extremely torn and very much disabled; five of our Merchant men were taken by the English, two of which were the richest in the Fleet, laden with Silks and other rich Commodities, and were called the *Landman of Amsterdam*, and the *Vrede of Rotterdam*, besides our Rear-Admirall (being formerly an English Ship) was sunk also one of our Men of War, mounted with 44 Guns and 50 men called the *Little Holland*: Captain *de Haes* Admiral of this Fleet was killed in this Engagement, with many of our Men, and many more wounded, who have been since brought a shore at *Rotterdam* and other places. The men of War which served for Convoys to the said Fleet were the *Flushing*, Captain *Adrian de Haes*, carrying fifty Guns, and two hundred and fifty Men. The *Dort*, Captain *Thomas de Bois*, carrying forty six Guns and one hundred and seventy Men. The *Entrecht*, Captain *Cornelius Everfon*, carrying forty eight Guns and two hundred and twenty Men. The *Hollandia*, Captain *Thomas Nes*, carrying forty four Guns and one hundred and fifty Men. The *Delf*, Captain *Pourt*, carrying

Figure 15: Extract from a True and Perfect Relation of the Great Victory Obtained over the Dutch © Bodleian Library

- 5.4.4 Depictions of the *Klein Hollandia*, of the Battle of the Smyrna Convoy and a painting of some of the protagonists involved in the battle have been found in the UK. These are held by the Victoria and Albert Museum (Fig.16), London, by the Caird Library in Greenwich and the Royal Museums Group. Researchers are yet to identify any depictions of the ship or the events surrounding the loss of the *Klein Hollandia* that are held in the Netherlands.



Figure 16: Examining the drawing of the *Klein Hollandia* by Van de Velde © NAS

5.4.5 There remain many unanswered questions relating to the assemblage on the seabed. These include but are not limited to:

- How much of the site remains buried under the seabed?
- How are the remains of the ship aligned on the seabed?
- What material are the large stone blocks made from and where did they originate?
- Did cannons have to be removed to allow for the weight of the cargo and did that make it vulnerable and contribute to its capture?
- How much marble tile cargo was the ship carrying?
- What type of ceramic cargo was the ship carrying and where did it originate?
- Was the ship carrying any other cargo?
- Did any of the crew carry their own cargo for personal gain?
- Who made the other bronze cannons for the Admiralty of Rotterdam?
- How do the remains of ship structure illuminate naval shipbuilding techniques and traditions in the Netherlands during the 17<sup>th</sup> century?
- Do the remains of the ship structure show evidence of constructional repairs because of the other engagements it was involved in?
- Do the remains of the ship show evidence of the battle damage incurred during the Battle of the Smyrna Convoy that led to its sinking?
- What can the site and the historical accounts tell us about the Dutch naval and merchant seafaring practices in the 17<sup>th</sup> century?
- How has the site been impacted in the past by intrusive events like trawling?
- Where are the ship's anchors and ammunition? To date none have been found.

## 6.0 The 2023 Expedition Week

### 6.1 The Dates

6.1.1 The 2023 project supported by the BSAJT was undertaken between Sunday 20<sup>th</sup> August and Sunday 27<sup>th</sup> August. Members of the project team that were staying in the shared accommodation in Eastbourne met on the evening of Sunday 20<sup>th</sup>, with seven days of diving being undertaken from the Monday 21<sup>st</sup> August 2023.

### 6.2 The Team

During the course of the *Klein Hollandia* expedition week a total of 23 divers joined the project. These divers were made up from eleven NASAC members; two NAS members; four Southsea Sub-Aqua Club (SSAC) members; the two original wreck finders, and four interested divers that helped to fill the boat. The full list of divers can be seen in the table below.

No.	Name	No.	Name
1	Mark Beattie-Edwards (NASAC)	13	Andy Colderwood (Guest)
2	Sara Hasan (NASAC)	14	Duncan Ross (NASAC)
3	Martin Davies (SSAC)	15	Martin Woodward (Guest)
4	Alison Mayor (SSAC)	16	Rob Hunt (Guest)
5	Jon Parlour (NASAC)	17	Allen Murray (NAS)
6	Tom Stockman (Finder)	18	Rosco Dimitrov (NASAC)
7	Lee Street (NAS)	19	Michael Gatter (Guest)
8	Steve Harvey (NASAC)	20	Shaun Samways (NASAC)
9	Chris Birkhead (NASAC)	21	Hilary Ryan (NASAC)
10	Alex Denny (NASAC)	22	Huw Roberts (NASAC)
11	Graham Owen (Finder)	23	Pippa Hardisty (SSAC)
12	Robert Dawson (SSAC)		

6.2.1 Six of the divers joined for the whole week, while the remaining attended what days they could. If divers joined for more than one day they were asked if they would like to participate in the documentation of the shipwreck.

### 6.3 Dive Management

6.3.1 During the course of the expedition week in Eastbourne we were blessed with good weather and were able to dive every single day, undertaking a total of 82 individual dives. The number of dives on the *Klein Hollandia* wreck undertaken by each diver can be seen in the table below.

No. of dives	Name	No. of dives	Name
7	Mark Beattie-Edwards (NASAC)	1	Andy Colderwood (Guest)
7	Sara Hasan (NASAC)	3	Duncan Ross (NASAC)
7	Martin Davies (SSAC)	4	Martin Woodward (Guest)
7	Alison Mayor (SSAC)	4	Rob Hunt (Guest)
6	Jon Parlour (NASAC)	1	Allen Murray (NAS)
7	Tom Stockman (Finder)	2	Rosco Dimitrov (NASAC)
6	Lee Street (NAS)	2	Michael Gatter (Guest)
2	Steve Harvey (NASAC)	1	Shaun Samways (NASAC)
1	Chris Birkhead (NASAC)	1	Hilary Ryan (NASAC)
2	Alex Denny (NASAC)	3	Huw Roberts (NASAC)
7	Graham Owen (Finder)	1	Pippa Hardisty (SSAC)
1	Robert Dawson (SSAC)	<b>82</b>	<b>Total</b>



6.3.2 Diving was undertaken from the dive vessel “*Our W*” owned and skipper by David Ronnan, the wreck’s original finder. It is wonderful to be able to support Dave’s business by chartering his boat to dive the *Klein Hollandia* protected wreck.



*Figure 17: Diving from "Our W" with skipper David Ronnan © NASAC*

6.3.3 Dive management was carried out in accordance with the approved Project Plan and Risk Assessment that was compiled for the week. A blank copy of the Project Plan and Risk Assessment has been included as an Appendix to this report.

6.3.4 A briefing was given on the boat every morning by the nominated dive manager, Jon Parlour. The daily briefing confirmed fitness of divers, expected weather conditions, tidal predictions including dive timings, as well as any specific tasks to be undertaken by each diving buddy pair.



**Figure 18: Jon Parlour giving the morning briefing on board "OurW " © Alison Mayor**

- 6.3.5 Diving records were kept and entered onto a spreadsheet so that the amount of time that each diver spent on site could be recorded and added to the total minutes spent underwater during the year.
- 6.3.6 After every dive each diver (or in a buddy pair) was required to write an archaeological log. This log does not just detail the dive statistics (time in/out, depth, etc) but chronicles their findings or observations during their dive. They are required to provide any measurements taken, drawings made, and detail any photographs and/or video taken during their visit to the wreck. Team member and diver, Sara Hasan acted as the project Archives Manager ensuring that these daily archaeological dive logs were completed, and that the images and videos taken were submitted to the project archives.
- 6.3.7 Some examples of completed logs have been appended to this report.



## 6.4 Results

6.4.1 As stated in Section 2 of this report the principle aim of the August 2023 investigation on the *Klein Hollandia* wreck, supported by the BSAJT, was the detailed examination and documentation of the visible timber ship structure to aid the understanding of which part of the 17th century ship actually survives on the seabed. This work would help inform future work including the recovery of samples of timbers for dendrochronological dating and provenance identification of the wood used to build the ship.

6.4.2 The six objectives of the BSAJT supported expedition were:

- To produce measured drawings of sections of the timbers to understand ship construction and fastening techniques;
- To undertake a photogrammetry survey of the sections of the timbers;
- To digitally draw up the photogrammetry survey to add to the site plan;
- To interpret and to report on the structural elements recorded to identify which part of the ship is on the seabed;
- To make timber selection recommendations for dendrochronological sampling in September 2023.
- To undertake a marine biological *SeaSearch* survey of the wreck.

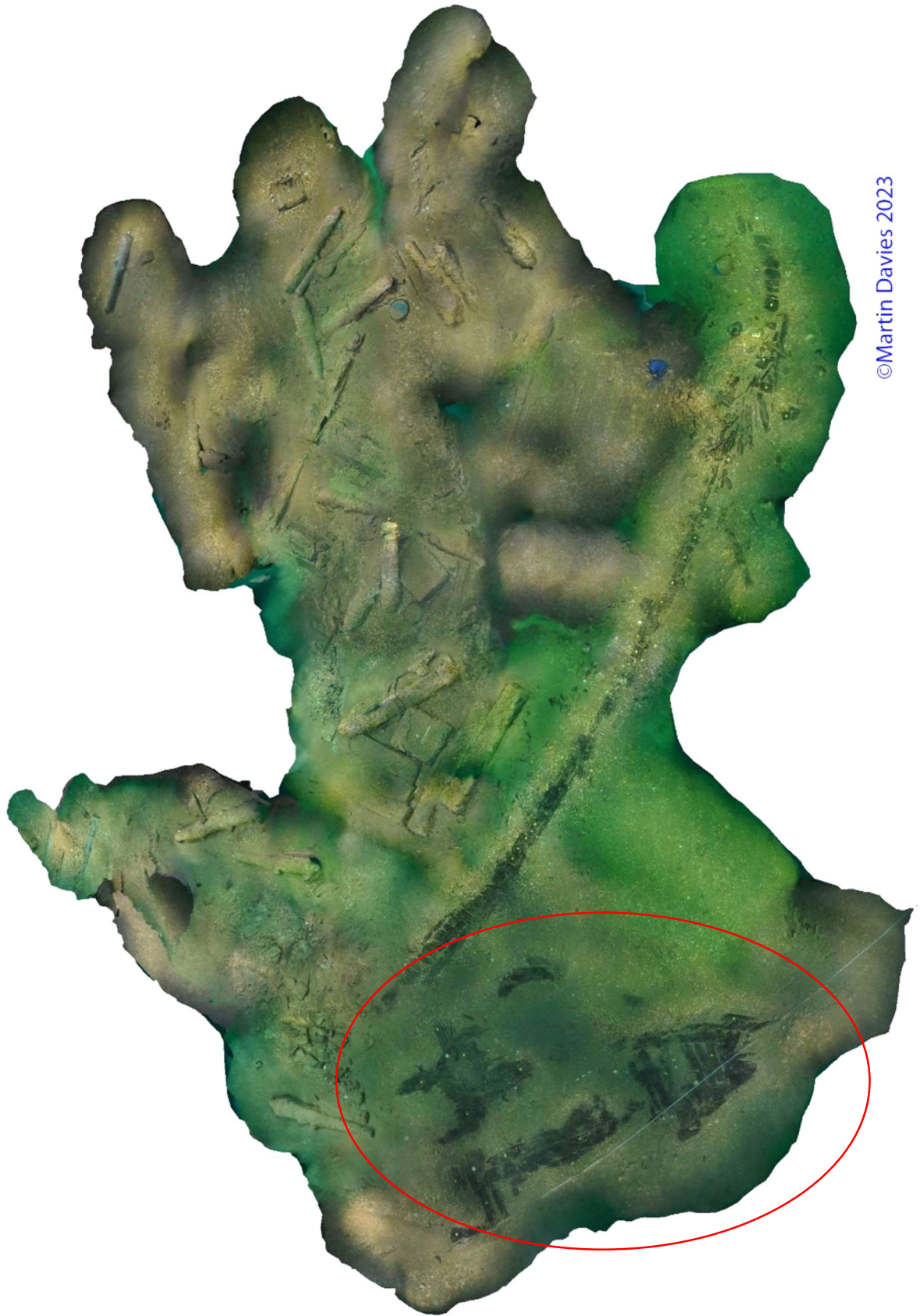
6.4.3 **Measured Drawings** – Over the course of the week a number of areas of the wreck were measured and drawn to aid our understanding of the hull structure on the seabed. Effort was concentrated on the remains of wooden ship's hull to the south of the site.

6.4.4 **Photogrammetry surveys** – Dive team member Martin Davies was able to undertake a number of photogrammetry surveys during the course of the week in August (Fig.19). Effort was concentrated on documenting the newly exposed timber area to the south of the main known assemblage.

6.4.5 **Site plan** – The site plan of the *Klein Hollandia* was updated using the photogrammetry model of most of the site as the basis for the drawing (Fig.20). The site plan could be updated by ensuring that the new photogrammetry survey included objects and features that had been recorded in prior surveys.

6.4.6 **Interpretation** – The area of the wreck timbers documented to the south of the main assemblage (Fig.21 & 22) can be interpreted as most likely consisting of the remains of the starboard side of the hull of the ship. The area consists of three layers of timbers, outer planks, framing timbers and inner or ceiling planks that would have been the internal floor or walls of the ship.

6.4.7 From the evidence documented on the seabed, what appears to have happened is that after the ship landed on the seabed and came to rest, it naturally broke up over time. Over the years parts of the ship's hull that would have been upstanding and exposed to the tidal currents and to wood boring organisms would have fallen on to the seabed below.



©Martin Davies 2023

**Figure 19: Full photogrammetry model of the Klein Hollandia site showing the newly exposed section of hull timbers © Martin Davies**



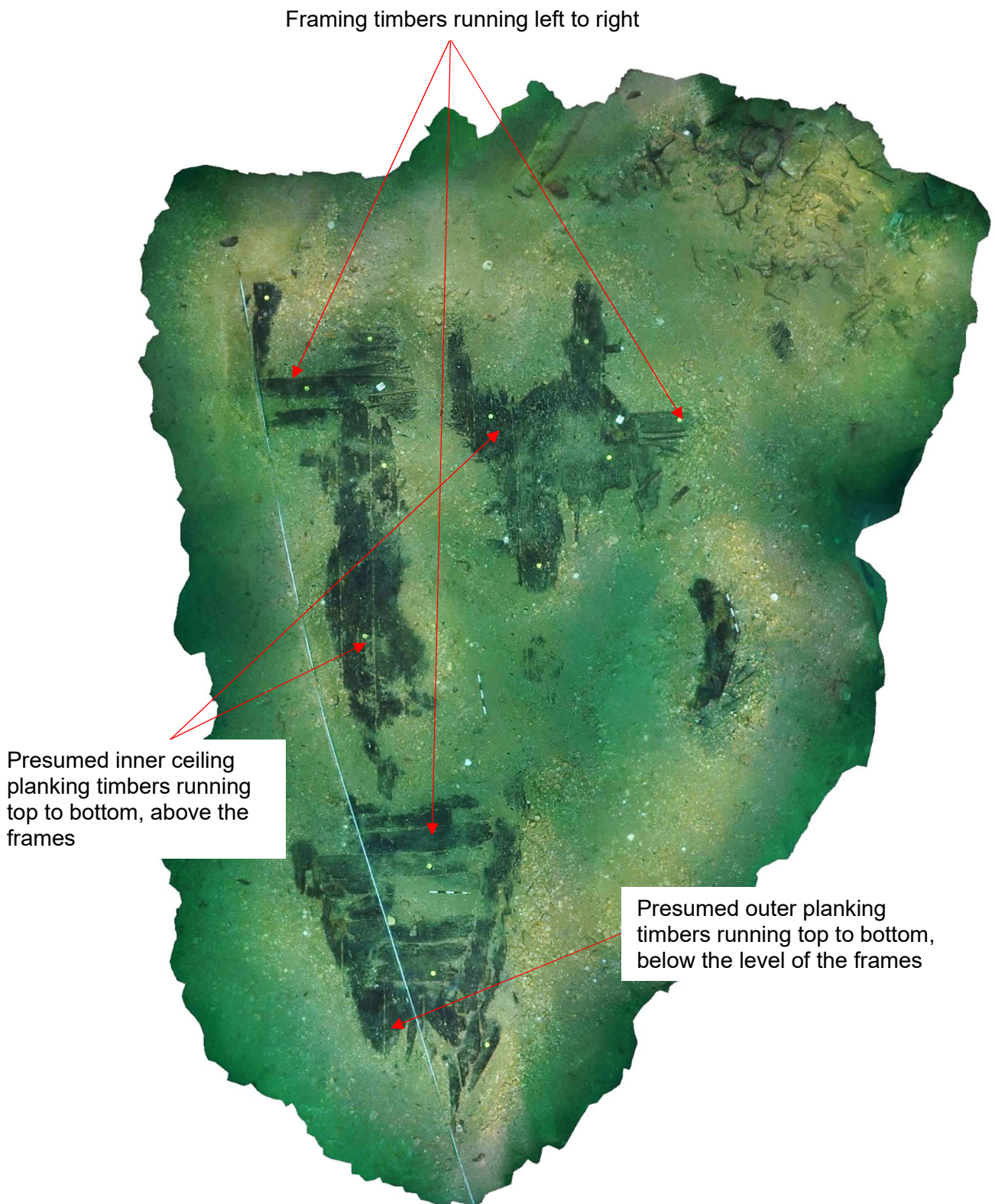
**The Klein Hollandia**

Copyright Nautical Archaeology Society

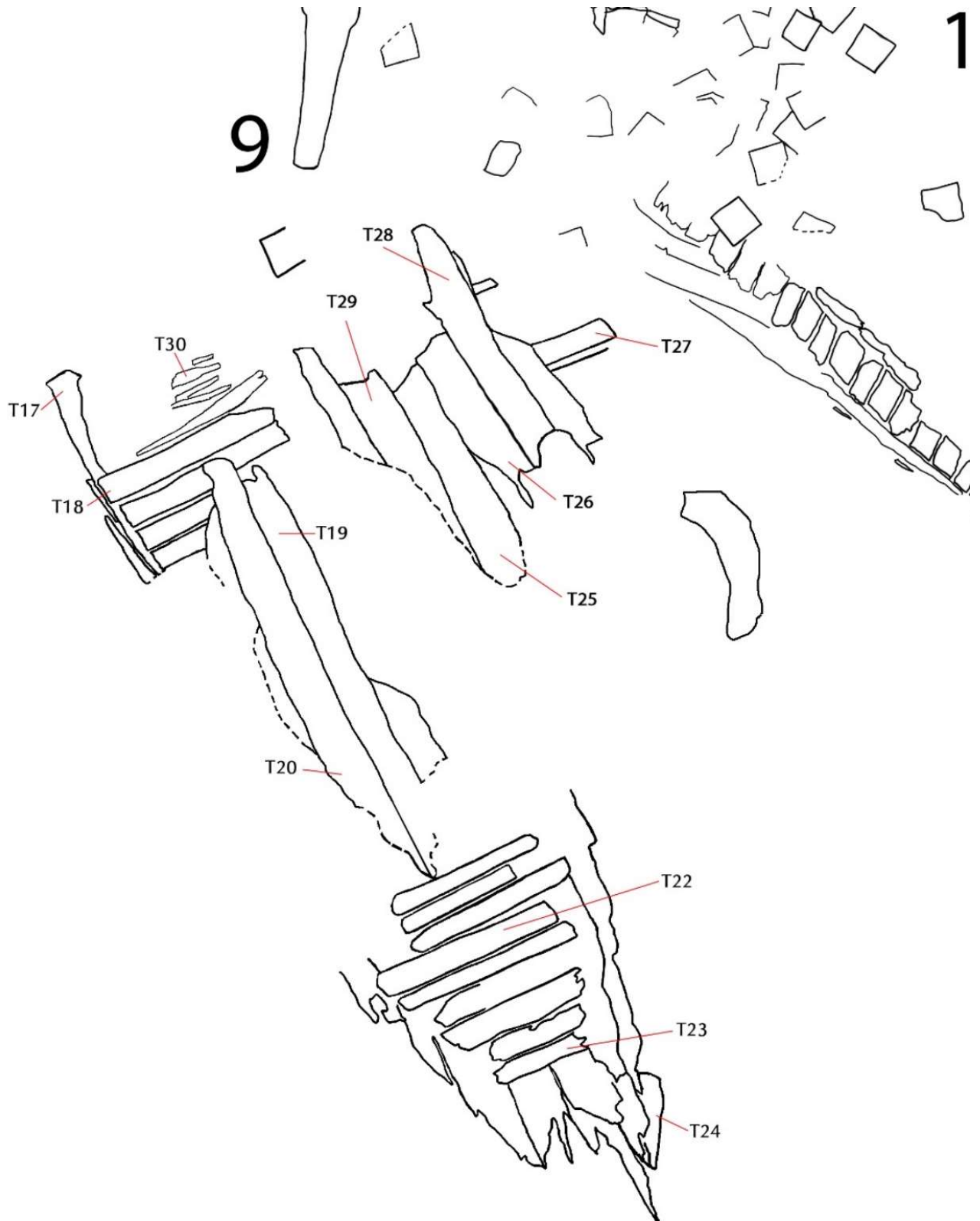
0m 5m 10m

**Figure 20: Klein Hollandia site plan 2023 © NAS**





**Figure 21: Photogrammetry survey of timbers to the south of the site © Martin Davies**



**Figure 22: Site plan of timbers to the south of the site © NAS**





*Figure 23: Video capture of the southernmost area of the hull remains including Tags T23 and T24*  
© NASAC

- 6.4.8 The believed orientation of the ship on the seabed would make these timbers the starboard side hull that became disarticulated and broke and fell to the seabed. It cannot be said with certainty at this stage whether the hull is lying face up (with inner planks being uppermost) or face-down (with outer planks being uppermost), but it seems most likely that the hull simply fell or collapsed down on to the seabed with outer planks resting on the sand with the inner planks uppermost. We are therefore looking down at the inside of the ship.
- 6.4.9 It was hoped, and still is hoped, that something might have been found, such as slots for beams or even a gun port, that would have made it clear which way the timbers are lying. Future investigation of the area should be able to illuminate exactly what is on the seabed.
- 6.4.10 As well as the area to the south of the site, the divers also spent some time trying to clean sand off and to document an area of hull timbers not previously recorded to the eastern edge of the site, believed to be the bow of the *Klein Hollandia*. The area was videoed but there was not enough time to undertake a photogrammetry survey. This will be part of future activities on the site.
- 6.4.11 **Dendrochronological sampling** – At the time of the submission of the grant application to the BSAJT it was planned that more dendrochronological samples of the hull timbers would be undertaken in September 2023. Unfortunately, it was not possible to undertake this work in September 2023 and this might be attempted as part of future investigations. The frame timbers identified in the new southerly area could be easily sampled and could illuminate the construction and repair sequence of the *Klein Hollandia*.



- 6.4.12 **SeaSearch survey** – Dive team member Alison Mayor kindly undertook a *SeaSearch* survey as part of the Marine Conservation Society (MCS) programme to document marine biological ecosystems around the UK coast. This is the first complete survey to be undertaken on the *Klein Hollandia* site and it is expected that this could be undertaken in future years to document any changes to the ecosystem, resulting from either natural or man-made (through excavation and recoveries) changes to the wreck.
- 6.4.13 The *SeaSearch* survey recorded the presence of numerous marine species. The full list of documented species can be found in the appendix of this report.
- 6.4.14 **Other discoveries** – during the course of the BSAJT supported expedition the dive team also made a number of other discoveries and recoveries from the *Klein Hollandia* wreck. All recoveries were made with permission and under licence from Historic England.
- 6.4.15 On the final day of the expedition, diver Martin Woodward and his buddy Robert Hunt recognised and reported the discovery of a wooden gun port lid. As a 56 gun ship there would have been 56 gun ports and gun port lids. The discovery was made in the northeastern area of the site near to bronze and iron cannon. Martin Davies was able to record the gun port lid with photogrammetry during a later visit to the wreck in September 2023 (Figs. 24 & 25).



©Martin Davies 2023

**Figure 24: Photogrammetry survey of gun port lid © Martin Davies**



*Figure 25: Close up of photogrammetry survey of gun port lid. Scales 50cm  
© Martin Davies*

- 6.4.16 **Recovered finds** – three recoveries of small finds were made during the August week. All recoveries were made with permission and under licence from Historic England. To make a recovery the licensee had to contact Historic England to describe and justify why the finds needed to be recovered. Once permission had been obtained the recoveries could be made.
- 6.4.17 The three recovered finds were a complete ceramic jug and two parts of rope that were found to be eroding out of the seabed and were likely to wash away in future tides (Figs 26, 27 & 28). At the time of writing the research into the recovered finds is ongoing.





**Figure 26: Small ceramic jug recovered from the Klein Hollandia © NAS**





**Figure 27: Strands of rope fibre recovered from the Klein Hollandia © NAS**



**Figure 28: Small section of rope recovered from the Klein Hollandia © NAS**



## 6.5 Promotion

### 6.5.1 During the weeklong expedition the project team used social media to post photographs of the week.

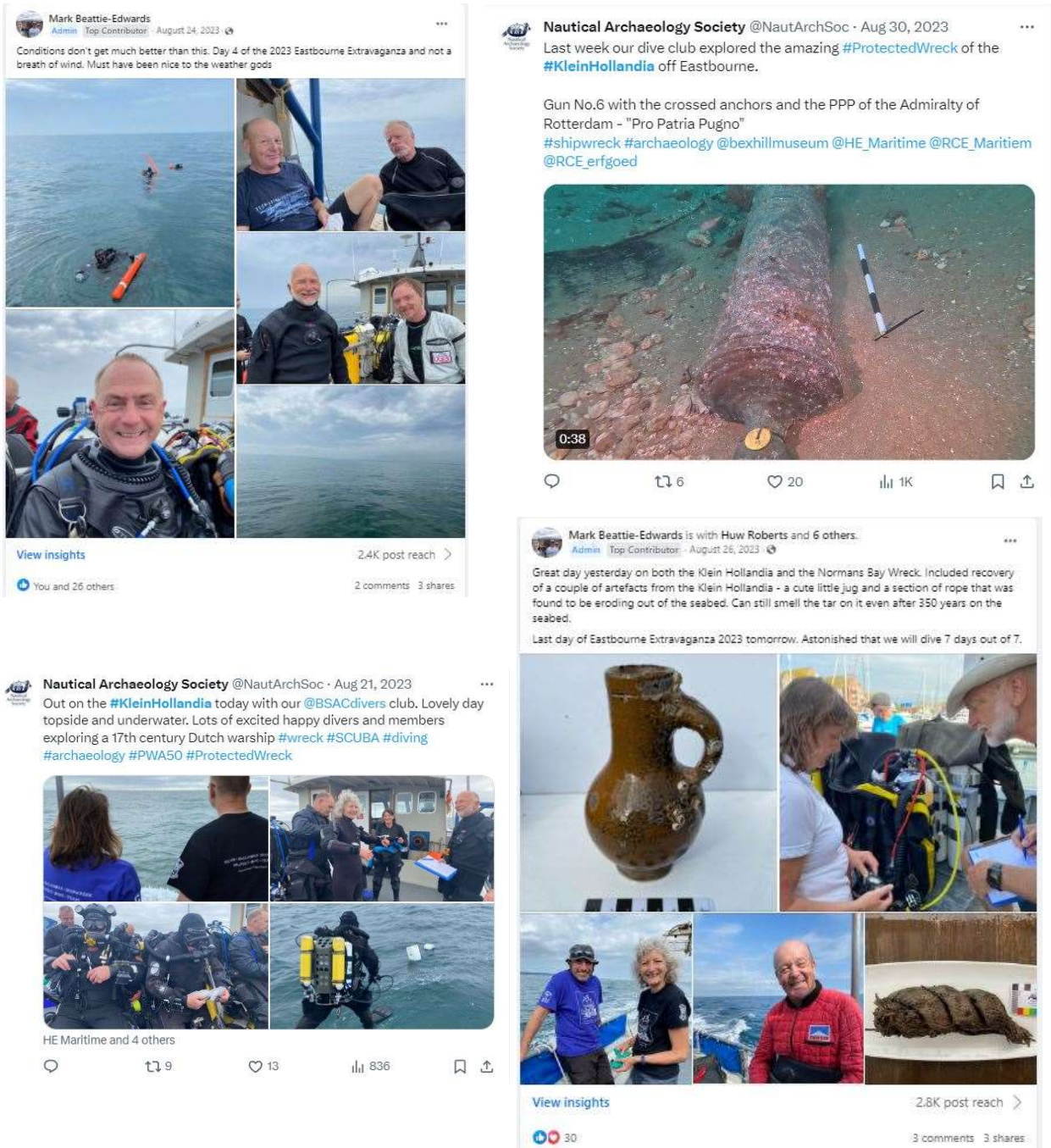
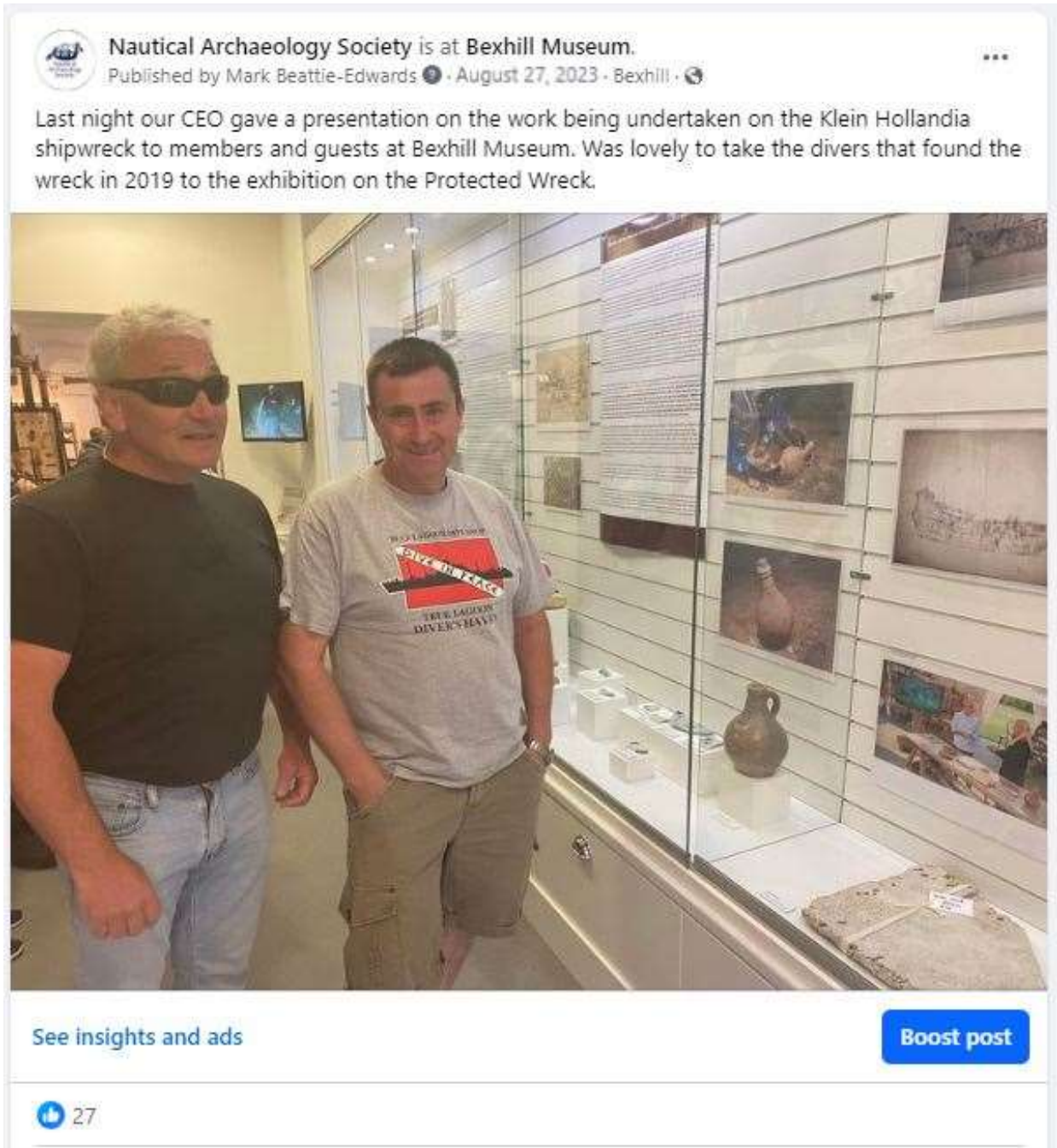


Figure 29: Screen grabs of social media posts during the expedition week

6.5.2 On the 26<sup>th</sup> August the author gave a presentation at Bexhill Museum about the wider project and the August investigation. As well as presenting recent work, the visit allowed the dive team to see the exhibition about the wreck.



**Figure 30: The wreck finders Graham and Tom visiting the exhibition on the Klein Hollandia**

6.5.3 The BSAJT has been thanked and acknowledged for their support on the Klein Hollandia project webpage, hosted by the NAS. See: <https://www.nauticalarchaeologysociety.org/klein-hollandia>



## 6.6 Expedition Budget

6.6.1 The project budget is outlined below. The table demonstrates how the generous £1,000.00 contribution of the BSAJT was spent.

Income		Expenditure	
BSAJT	£1,000.00	Boat Charter	£5,350.00
Divers - deposits	£3,320.00	Gas	£781.83
Divers - balances	£1,995.00	Equipment	£106.00
Accommodation	£1,890.00	Accommodation	£1,964.00
<b>Total income</b>	<b>£8,205.00</b>	<b>Total Expenditure</b>	<b>£8,201.83</b>

6.6.2 The majority of the BSAJT grant (£781.83) was spent on the cost of gas fills used during the week by the dive team. This meant that the funding could be used to subsidise the diving activities for the whole team. The remaining grant amount (£218.17) was used as a contribution to the consumable equipment used during the week (£106.00) and to support a small shortfall (£74.00) in the Eastbourne accommodation income. The consumable equipment included survey disk tags and nails for timber labelling, cable ties, waterproof permatrace paper and the paper and printer ink needed for creating dive logs.

## 7.0 Acknowledgements

7.0.1 The author would like to thank the British Sub-Aqua Jubilee Trust for their support of this investigation. The author would also like to thank Hefin Meara, Terence Newman and Francesca Gherardi from Historic England. The author is indebted to Martijn Manders and Robert de Hoop from the Cultural Heritage Agency of the Netherlands (RCE).

7.0.1 Thanks to boat skipper and finder David Ronnan, and to all the divers that took part in the BSAJT funded expedition in August 2023. These divers were: Mark Beattie-Edwards, Tom Stockman, Graham Owen, Jon Parlour, Sara Hasan, Martin Davies, Alison Mayor, Chris Birkhead, Lee Street, Steve Harvey, Alex Denny, Robert Dawson, Duncan Ross, Martin Woodward, Robert Hunt, Allen Murray, Rosco Dimitrov, Michael Gatter, Shaun Samways, Hillary Ryan, Huw Roberts and Pippa Hardisty.

7.0.2 Special mention must go to photographer Martin Davies for the images and for the processed photogrammetry surveys created during the week and in the weeks afterwards. Special acknowledgement must also go to Alison Mayor for undertaking the *Seasearch* survey on the wreck as well as helping to take top-side photographs to chronicle the expedition.

7.0.3 Thanks to Jon Parlour who supported the project by acting as the Dive Manager, creating daily risk assessments, and undertaking morning briefings as well as ensuring the dive management records were completed every day. Finally, thanks to Sara Hasan for acting as the project Archives Manager ensuring that daily archaeological dive logs were completed by all divers, and that images and videos taken were submitted to the project archives.

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[https://en.wikipedia.org/wiki/Eastbourne\\_wreck\\_site](https://en.wikipedia.org/wiki/Eastbourne_wreck_site)



# Understanding the Klein Hollandia shipwreck

21<sup>st</sup> – 27<sup>th</sup> August 2023

## Project Plan and Risk Assessment

**Created by**

Mark Beattie-Edwards

Diving Officer

Nautical Archaeology Sub-Aqua Club

BSAC Branch 2574

**Registered Address**

Fort Cumberland, Fort Cumberland Road, Eastney, Portsmouth, PO9 9LD

## Diving Procedures

**Site:** Unknown Wreck off Eastbourne / Klein Hollandia

**Dates:** 21<sup>st</sup> – 27<sup>th</sup> August 2023

**Dive Boat:** Our W, with Dive 125. Skipper: David Ronnan, the finder of the wreck

**Depth:** 31-33m

**Expected dive duration:** 25-45 mins bottom time dependent on actual depth, buddy pairs equipment, gas supply, tissue loading, tidal strength.

**Expected underwater conditions:** We have been diving the wreck since April 2019, with 44 trips to the site undertaken to date. Having undertaken this number of dives on the wreck we are confident of the likely conditions to be experienced in August 2023. In August 2022 the underwater visibility was 4-5m. In August 2021 the visibility on one dive was an amazing 8-10m.

**Expected topside conditions:** We have picked a week in August in the hope that weather conditions will be favourable. Go or no-go decisions will be made every morning with the boat skipper.

**Tides:** The closest neap is on the 26<sup>th</sup> August so the tides will be getting smaller and weaker through the week. We will use *TotalTide* to calculate the expected tidal regime for each day. Dives will always be planned around the expected slack water.

**Buddy Pairs:** All divers will be paired with another diver. This pairing will be dependent on their equipment, gas, qualification. Initially divers less familiar with the site will be paired with divers who know their way around the wreck and who can provide navigation support.

**Equipment:** Divers will be diving on their own equipment. Our team consists of a number of experienced rebreather divers, open circuit technical divers and a few who dive on 15 litre single cylinders with 3 litre pony bottles.

**Gases:** Based on the depth of the site each day, the diver's own equipment and the qualifications of the divers involved, gases will range from air (in a limited number of cases) to a 32% Nitrox mix. Gases will be analyzed before every dive and logged on the Risk Assessment and Dive Marshall slate. Enriched deco stage mixes will be used by individual divers based on qualifications.

**Oxygen and First Aid:** A medical O2 kit will be supplied on the boat. The boat also has additional supplies of O2 used for gas blending that can be accessed if needed. A first aid kit will be supplied on the boat and available on land. Appointed O2 administrators and first aiders will be noted on the daily log. One of our divers is a registered nurse and a recompression chamber nurse and an O2 administration instructor. They will be responsible for ensuring that O2 and first aid provision is in place every day.

**Next of Kin:** Details of next of kin will be acquired for all divers participating.

**Supervision:** Diving operations will be supervised by a nominated Dive Marshall who holds a BSAC Advanced Diver qualification or higher.

**Records:** A Risk Assessment will be completed every day for planned diving operations and revisited should conditions be different than expected or change during the course of operations. A daily Dive Marshall slate will be maintained to record all dive details. Detailed dive logs will be written up and submitted at the end of every day.

**Shooting the wreck:** The wreck will be shotted every day by the boat skipper. Dave has shotted the wreck successfully many times since 2019. The first diving pair in will ensure that the shot is securely on the wreck and send up a small float to indicate to the remaining divers that they can enter the water and use the shot line to reach the wreck.

**Descents:** All descents will be made using the shot line.

**In water tasks:** Any diver undertaking their first dive on the site will not be asked to undertake any survey task beyond taking their own video to help them become familiar with the site and with the orientation of features. Divers will be undertaking basic survey tasks, such as cleaning off sand, measuring and drawing features, photography and video. All divers will be deemed to be competent at the task being asked of them, before being allowed to do it. All divers will be briefed to stop their task if at any time they have safety concerns or any complications.

**Ascents:** Ascent will be undertaken using DSMB's. All divers will be required to be competent in their deployment. The boat skipper likes all divers to use a DSMB so that the number of DSMB's can be counted and so that the boat can drift along with the divers. Generally, buddy pairs send one DSMB from the bottom and release the second one when they reach their first stop. This is to reduce the risk of entanglement of lines during their ascent.

**Decompression:** Decompression profiles will be calculated with individual buddy pairs based on equipment, gases used and qualification and experience of the divers. Decompression will be undertaken under DSMB's in buddy pairs. A signal of multiple repeated pulls on a DSMB will be used to indicate the need for additional gas. A drop bottle will be kept on the boat and deployed if needed.

**Diver Recall:** The boat skipper uses a signal of repeated bangs on the lift at the stern of the boat to indicate the need for divers to return to surface. All divers will be briefed that this signal means to leave bottom immediately if safe to do so, while continuing to undertake their own decompression requirements.

**Evacuation:** The evacuation of a casualty will be managed by the boat skipper and supported by the Dive Marshall and other divers where needed. The closest recompression chambers are located in either London or Chichester, but the decision as to which one is used would be determined by the emergency services.



## Understanding the Klein Hollandia Shipwreck – August 2023

## Risk Assessment for Non-Diving Project Activities

Risk No	Where	Hazard	Whose at Risk	Probability	Risk Rating	Control Measures	Reduced Rating	Start
				Severity				End
1	Enroute to boat from home and between venues – accommodation and boat	Transporting charged diving cylinders in vehicles	All	3	6	Compressed gas cylinders displayed. All cylinders secured during transport.	4	20/08/23
				3				Low
2	Enroute to boat from home and between venues – accommodation and boat	Driving on unknown or unfamiliar roads resulting in accidents	All	2	5	Use of Sat-Nav to help navigation. Travel together to reduce journeys.	3	20/08/23
				3				Low
3	Loading boat at Sovereign Harbour	Physical injury, such as back strain or dropping weight on feet - resulting in bruising, sprains, strains, fractures.	All	4	6	Care and attention. Not lifting loads too heavy. Helping each other move heaviest items such as cylinders.	3	21/08/23
				2				Low
4	Local accommodation	Physical injury, slips, trips, falls, resulting in sprains, strains, fractures.	Team members staying at project B&B	2	4	Care and attention in an unfamiliar place. Limited alcohol consumption.	3	20/08/23
				2				Low
5	Everywhere	Unexpected medical emergency	All	2	7	Everyone fit to work/fit to dive.  999 for emergency services. Eastbourne Hospital A&E.	3	20/08/23
				5				Low
6	Everywhere	Covid 19 infection	All	3	5	Provide Covid 19 Lateral Flow Tests. Isolation or asked to leave project	3	20/08/23
				2				Low

Risk Assessment Probability and Severity Matrix				
	1 - NEGLIGIBLE	2 - MARGINAL	3 - CRITICAL	4 - DEADLY
5 - CERTAIN	6 - HIGH	7 - HIGH	8 - EXTREME	9 - EXTREME
4 - LIKELY	5 - MODERATE	6 - HIGH		
3 - POSSIBLE	4 - LOW	5 - MODERATE		
2 - UNLIKELY	3 - LOW	4 - LOW		
1 - RARE	2 - LOW	3 - LOW		

## Daily Diving Operations Log

The Dive Marshall for each day must complete the following log.

Dive Marshall Name			
Signature		Project No.	83501
Vessel / Skipper	Our W / David Ronnan	Dive Site	Klein Hollandia
Date of Dive	/ 08 / 2023		

### Dive Team

No.	Name	Position / Duties	02 / First Aider	NoK Supplied
1			Y / N	Y / N
2			Y / N	Y / N
3			Y / N	Y / N
4			Y / N	Y / N
5			Y / N	Y / N
6			Y / N	Y / N
7			Y / N	Y / N
8			Y / N	Y / N
9			Y / N	Y / N
10			Y / N	Y / N
11			Y / N	Y / N
12			Y / N	Y / N

## Understanding the Klein Hollandia Shipwreck – August 2023

<b>Nature of Diving Operation</b>	Archaeological survey. Non-intrusive documentation including drawing, measurement and photography and video			
<b>Deco Schedules / Tables Used</b>	BSAC Nitrox Tables Dive Computers by Buddy Pairs			
<b>Breathing Apparatus Used</b> (Circle all used)	Closed Circuit Rebreather / Open Circuit Rebreather / Open Circuit SCUBA			
<b>Bottom Gas Mixtures Used</b> (Circle or add all used)	21%	27%	30%	32%
<b>Deco Gas Mixtures Used</b> (Circle or add all used)		70%	80%	100%
<b>Any Equipment Issues or Defects Identified</b> (provide details)				

<b>Expected Daily Environmental Conditions</b>	<b>Detail anything of particular concern that requires close attention and mitigation in the Risk Assessment</b>
<b>Wind</b>	
<b>Air Temperature</b>	
<b>Wave &amp; Swell</b>	
<b>Tide Direction</b>	
<b>Slack Water Window</b>	
<b>Underwater Visibility</b>	
<b>Underwater Light</b>	
<b>Water Temperature</b>	



## Understanding the Klein Hollandia Shipwreck – August 2023

**Pre-Dive Checks - Gas Pressures and Mixes**

<b>Diver 1 Name</b>		<b>Diver 2 Name</b>	
Primary Pressure and Mix		Primary Pressure and Mix	
Secondary Pressure and Mix		Secondary Pressure and Mix	

<b>Diver 3 Name</b>		<b>Diver 4 Name</b>	
Primary Pressure and Mix		Primary Pressure and Mix	
Secondary Pressure and Mix		Secondary Pressure and Mix	

<b>Diver 5 Name</b>		<b>Diver 6 Name</b>	
Primary Pressure and Mix		Primary Pressure and Mix	
Secondary Pressure and Mix		Secondary Pressure and Mix	

<b>Diver 7 Name</b>		<b>Diver 8 Name</b>	
Primary Pressure and Mix		Primary Pressure and Mix	
Secondary Pressure and Mix		Secondary Pressure and Mix	

<b>Diver 9 Name</b>		<b>Diver 10 Name</b>	
Primary Pressure and Mix		Primary Pressure and Mix	
Secondary Pressure and Mix		Secondary Pressure and Mix	

<b>Diver 11 Name</b>		<b>Diver 12 Name</b>	
Primary Pressure and Mix		Primary Pressure and Mix	
Secondary Pressure and Mix		Secondary Pressure and Mix	

Understanding the Klein Hollandia Shipwreck – August 2023

**Pre-Dive Checks - Equipment**

<b>Diver Checks (Tick on Completion)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
Gas Mix Checked												
Stage Mix Checked												
Main Regulator tested												
Second Regulator tested												
Stage Regulator tested												
Torch working												
Timer/Computer												
DSMB and Reel												
Backup DSMB and Reel												
Weight Belt												
Knife / Scissors												
Other (detail)												
Other (detail)												
<b>Other equipment</b>												
Video Camera												
Stills Camera												
Photo Scale Bar												
Tape Measure												
Drawing Board												
Pencil (+spare)												
Folding Ruler												
Callipers												
Other (detail)												

## Daily Diving Risk Assessment

To be completed at the start of each day and if conditions change

Dive Marshall					
Vessel Name		Our W	Project No.	83501	
Vessel Skipper		David Ronnan	Dive Site	Klein Hollandia	
Date		Slack Time(s)			
Identify Hazards	Relevant	Notes	Controls	Notes	Control
Surface Visibility	Y / N		Vessel lights. Divers Lights. Abort if unsafe		Y / N
Air Temperature	Y / N		Appropriate clothing. Hot or cold drinks. Check equipment function		Y / N
Weather / Sea State	Y / N		Terminate diving if unsafe. Do not dive if unwell.		Y / N
Entry	Y / N		No stride entry if water depth unknown		Y / N
Exit	Y / N		Lift or ladder if lift malfunction		Y / N
Water Temperature	Y / N		Suitably dressed and equipped for temperature		Y / N
Underwater Visibility	Y / N		Divers to carry buddy line, torches. Diver to search for buddy and return to surface on DSMB		Y / N
Underwater Current	Y / N		Dive on slack water. Deploy DSMB and return to surface if unworkable		Y / N
Entrapment or Entanglement	Y / N		Divers to access risk. Carry knife/scissors.		Y / N





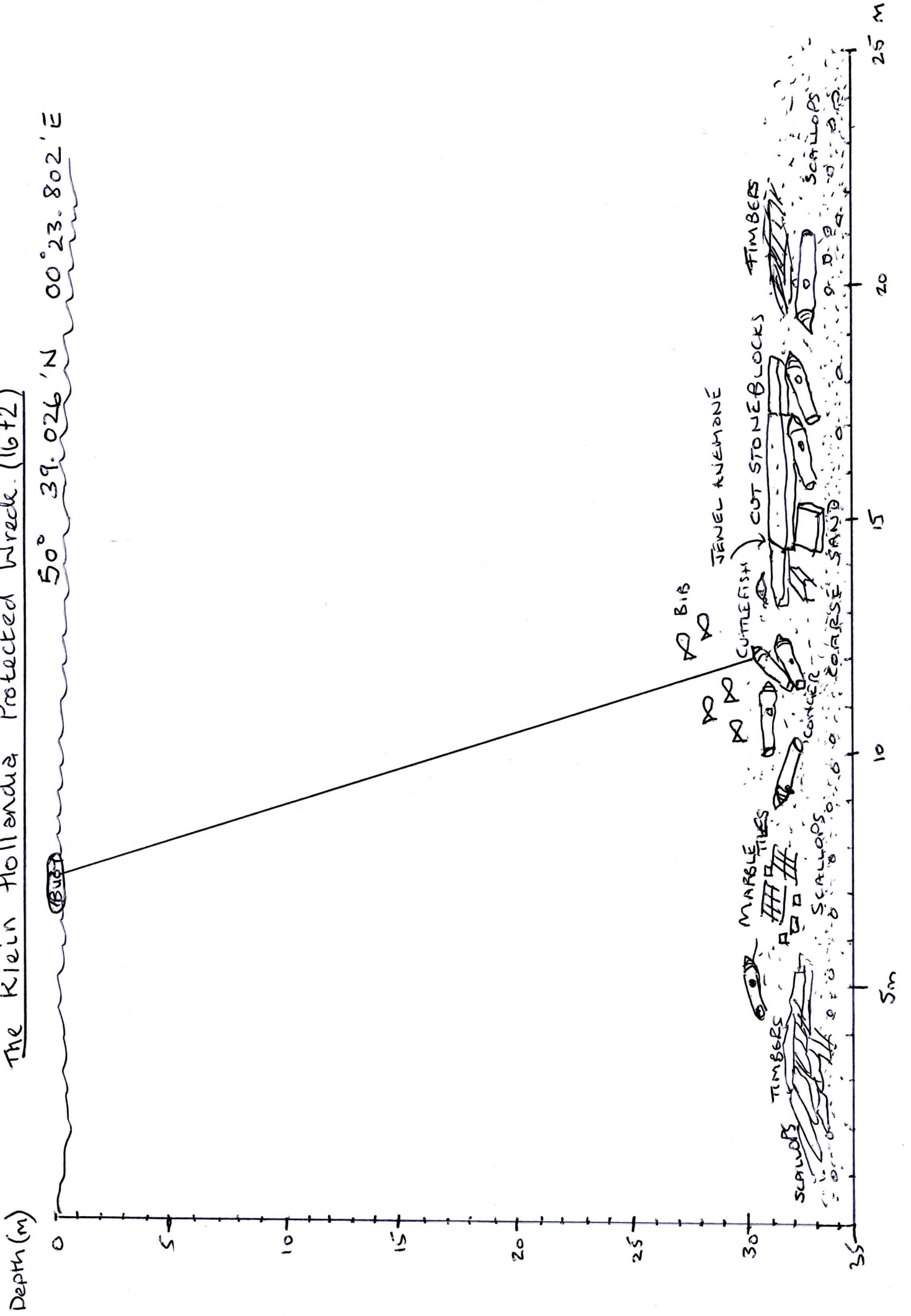
Understanding the Klein Hollandia Shipwreck – August 2023

Working Depth	Y / N		Adequate gas supply and bailout. All dives undertaken with tables as backup o dive computer.		Y / N
Shipping Movements	Y / N		A Flag and lights. VHF monitored and visual lookout		Y / N
Other					
Other					

<b>Dive Marshall</b>	
Name:	.....
Signature:	.....
Date/Time:	.....

# The Klein Hollandia Protected Wreck (1672)

50° 39.026' N 00° 23.802' E







PERSONAL DETAILS		SITE DETAILS	
Name:	Mark Beattie Edwards	Site Name:	UK HO 83501
Date:	22. 8. 23	Sector/Area:	South timbers
		Cross Ref Dive Log:	174 - 2023
		Form No:	176 - 2023
		U1060 U06 REF:	175. 2023

NOTES/SKETCH:



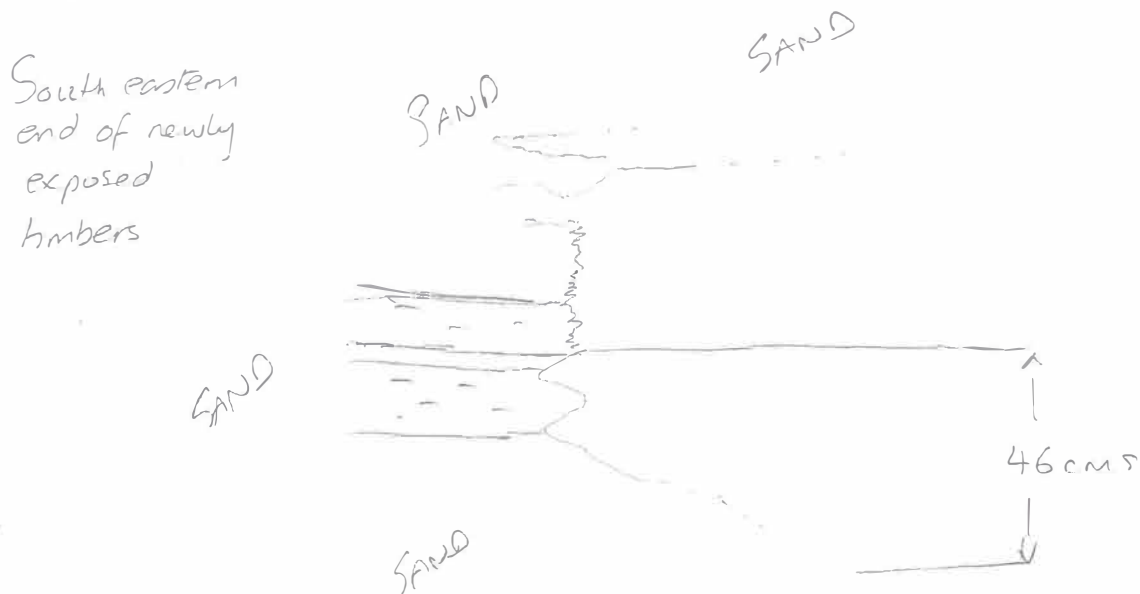
Sketch drawn from analysis  
of videos by N&E and  
Jon Padlow.



PERSONAL DETAILS		SITE DETAILS	
Diver Name: <i>SARA HASAN</i>		Site: 83501 / Klein Hollandia	
Contact details:			
Buddy name: <i>MARK - BEATTIE - EDWARDS</i>		Form No: (completed by MBE) <i>195-2023</i>	
Tel No:	Date <i>25/8/2023</i>	From Cross Ref: (completed by MBE)	

Archaeological Supervisor:	MBE	START 🕒	<i>1208</i>	FINISH 🕒	<i>1316</i>
Dive Supervisor:	Jon Parlour	DIVE TIME 🕒	<i>68 mins</i>		
TASK(s):	<i>1/ Lay north arrow x2 and NAS logo (on weight) on the timber run, as well as 50cm scale. Clean timbers to the south. 2/ Clean and investigate timbers at end of south run</i>				
RESULTS:					
	<i>1/ Done</i>				
	<i>2/ Cleared/wafted sand from far end (approx 11m on base line) of newly exposed timbers. Thick, narrow timbers exposed below wide planks, in same orientation as planks.</i>				

**SKETCH:**



PHOTOS TAKEN		VIDEO TAKEN	
WHOS CAMERA:		WHOS CAMERA:	
FILE NUMBERS:		FILE NUMBERS:	
SUPPLIED:		SUPPLIED:	



PERSONAL DETAILS		SITE DETAILS	
Diver Name: <i>MARTIN WOODWARD</i>		Site: 83501 / Klein Hollandia	
Contact details:			
[REDACTED]		Form No: (completed by MBE) <i>213-2023 Plot 2</i>	
		From Cross Ref: (completed by MBE)	

Archaeological Supervisor:	MBE	START 🕒	<i>14:07</i>	FINISH 🕒	<i>14:43</i>
Dive Supervisor:	<i>Jon Parlow</i>	DIVE TIME 🕒	<i>34 mins.</i>		

TASK(s):

*GENERAL OVERVIEW OF SITE*

RESULTS:

*DISCOVERED GUN PORT COVER, APPEARS INTACT, FACING UPWARD, HORIZONTAL PLANKS, FASTENED BY TWO LARGE IRON HINGES - TIMBER IN GOOD CONDITION.*

*ROBERT DISCOVERED SINGLE STRAIGHT TIMBER LINE APPROX 12 IN IN WIDTH, LENGTH APPROX 35 FT*

SKETCH:

*Iron Strap hinges*

*Horizontal planks*

*Estimated 700mm square*

*2 holes*

PHOTOS TAKEN		VIDEO TAKEN	
WHOS CAMERA:		WHOS CAMERA:	<i>MARTIN WOODWARD</i>
FILE NUMBERS:		FILE NUMBERS:	
SUPPLIED:		SUPPLIED:	