

# St Anthony

Designated Historic Wreck Site



Desk-Based Assessment

Kevin Camidge

Title	<i>St Anthony</i> Desk-Based Assessment
Reference	EH 6691
Authors	Kevin Camidge
Derivation	<i>St Anthony</i> , Rill Cove & <i>Schiedam</i> DBA Project Design
Origination date	12.III.2013
Revisers	KC
Date of last revision	23.X.2013
Version	1.2
Status	Final
Summary of Changes	Address EH comments
Circulation	Alison James, Terence Newman
Submitted	23.X.2013
Required action	
File Name Location	D:/SARCS/DBAs/St_Anthony
Approval	

Cover photograph: SA277 Copper alloy candlestick base recovered from the site, now on display at Pengersick Castle.

## Acknowledgements

I would like to thank the licensees of this site for all their help and for supplying information and documents relating to the *St Anthony* Site. They are Richard Larn, Anthony Randall and David Roberts.

This project was commissioned by English Heritage. I would like to thank the English Heritage project officer Alison James for her assistance throughout the project. I would also like to thank Sarah Checksfield, the English Heritage registry supervisor, for all her help in accessing the historic licensees' reports at the English Heritage registry at Swindon.

# Contents

Acknowledgements.....	3
Contents.....	4
Summary .....	6
Project Background.....	7
Introduction .....	7
Site Location.....	7
Licensing History .....	8
Aims and Objectives.....	9
Methodology.....	10
Introduction .....	10
Sources.....	10
Discussion.....	10
Results.....	11
Summary History of the <i>St Anthony</i> .....	11
Documentary Sources.....	12
Archaeological History of the Site.....	15
The Site Plans .....	27
The Photographs.....	28
The Finds List.....	30
Archaeological Evidence .....	45
Assessment of Importance .....	50
Period.....	50
Rarity.....	50
Documentation .....	50
Survival/Condition .....	50
Vulnerability.....	50
Diversity .....	50
Potential.....	50
Assessment of Impacts .....	51
Previous Disturbance .....	51
Site Environment.....	51

Future Threats.....	51
Discussion.....	52
Recommendations .....	52
Contents of the DVD .....	53
Bibliography .....	55

## Summary

The site lies some 30 to 180m offshore from the sand and shingle beach at Gunwalloe Fishing Cove on the west coast of the Lizard Peninsula. The identification of the site as the wreck of the *St Anthony* is based on the historic record and the nature and date of the finds recovered from the site; no remains of the fabric of the ship have ever been located. The wreck of the *St Anthony* in 1527 at Gunwalloe is well attested by documentary sources. These sources, which are the result of litigation, detail the events of her loss and include a list of the cargo of the *St Anthony*. Many of the artefacts recovered from the site can be linked to items detailed on this cargo list.

The archaeological history was constructed from the licensees' reports submitted to the Advisory Committee on Historic Wreck Sites (ACHWS) and the site inspection reports made by the Archaeological Diving Unit (ADU) and Wessex Archaeology, as well as from communication with the site licensees, Richard Larn, Anthony Randall and David Roberts. The majority of archaeological work on this site was undertaken between 1977 and 1995 by the first two licensees of the site, Richard Larn and Anthony Randall. Both Mr Larn and Mr Randall hold archive material and records pertaining to this work. The site plans were found with the various licensee reports; a total of nine separate site plans were found, ranging in date from 1981 to 2004. 285 artefacts are recorded as recovered from the site, many of which are on display at Pengersick castle, Cornwall. Objects from this site are also on display at the Charlestown Shipwreck Museum and at the British Museum.

Finally, a number of recommendations have been made concerning what could be done in the future regarding this project. All the documents, licensee reports, contractors' reports, site plans and photographs referenced in this report appear on the DVD which accompanies this report. A contents list for the DVD is included at the end of this report.

# Project Background

## Introduction

This desk based assessment is intended to combine the information contained in the various licensees' reports, as well as information supplied by the licensees, into a single document. This has been supplemented by documentary research into the history of the vessel itself.

## Site Location

The site is situated close to the shore at Gunwalloe Fishing Cove on the west coast of the Lizard peninsula in west Cornwall. The seabed around the wreck consists of shallow rock gullies and shingle with some pockets of coarse sand. It lies in shallow water, generally about seven metres deep. The area protected by the original designation (1982) was 75m around the position 50° 03.4'N, 05° 17.1'W . Bearing in mind that this position was derived in the days before GPS, it should be viewed as approximate. In September 2006 the site was re-designated – the new area is a circle of 150m radius centred on 50° 03.335826N, 05° 16.911581W (WGS84).



*Fig 1.  
The location of the St Anthony,  
Schiedam and Rill Cove sites on  
the west coast of the Lizard  
peninsula.*

## Licensing History

Licensee	Year	Type of licence
R. Larn	1982	Survey
R. Larn	1983	Survey
R. Larn	1984	Survey
R. Larn	1985	Excavation
R. Larn	1986	Excavation
A. Randall	1987	Excavation
A. Randall	1988	Excavation
A. Randall	1989	Excavation
A. Randall	1990	Excavation
	1991	?
	1992	?
A. Randall	1993	Excavation
A. Randall	1994	Excavation
A. Randall	1995	Survey
A. Randall	1996	Excavation
A. Randall	1997	Survey
A. Randall	1998	Excavation
A. Randall	1999	Excavation
A. Randall	2000	Excavation
A. Randall	2001	Surface recovery
	2002-3	No licence
J. Rosevear	2004	Visit
	2005-6	No licence
D. Roberts	2007	Visit
D. Roberts	2008	Visit
D. Roberts	2009	Visit
D. Roberts	2010	Visit
D. Roberts	2011	Visit
D. Roberts	2012	Visit

## **Aims and Objectives**

- To determine the current whereabouts of the artefacts recovered from the site. Also to secure, if possible, any records and photographs of the objects.
- To determine the whereabouts and extent of the records made of these wrecks by the licensees. These are likely to include site plans, dive logs, photographs and records of documentary sources pertaining to the wrecks.
- To ascertain what documentary sources exist for this wreck and produce a summary of the existing documentary data. Sources are likely to include documents at the National Archive as well as RoW records and secondary sources.
- To identify and determine the extent of any existing reports. These are likely to include licensee reports, designated site assessments, IJNA articles and notes and press reports.
- Finally, to produce a narrative of the work carried out on this project along with an account of what has been done and written about each project. To create a detailed list of where all the artefacts and records are currently housed and identify what remains to be done on each project.

# Methodology

## Introduction

A draft of this desk based assessment was submitted to the site licensees Richard Larn, Anthony Randall and David Roberts for their comments.

## Sources

The following sources were consulted in compiling this desk based assessment:

Anthony Randall – Team member and licensee

Richard Larn – original site licensee

David Roberts – Site licensee

Public Record Office, Kew

Charlestown Shipwreck Museum Recording Project Report 2006 (EH4823)

Original licensees' reports (EH registry, Swindon)

Archaeological Diving Unit site visit reports (EH registry, Swindon & EH Fort Cumberland)

Contractors' Designated Site Assessments (EH, Fort Cumberland)

The National Record of the Historic Environment

Cornwall and Scilly HER

Receiver of Wreck

Journal articles (IJNA)

Press articles

Published works

## Discussion

Wherever possible all source material was photographed; copies of this source material are reproduced in full on the DVD which accompanies this report. An index to the material contained on the DVD appears at the end of this report.

## Results

### Summary History of the *St Anthony*

The *St Anthony* was the flagship of a fleet travelling from Flanders to Portugal with a valuable cargo of silver, copper, jewels and cloth. She was described as a fine ship and was probably a carrack of about 350 tons. At about 8am on 19<sup>th</sup> January 1527 the *St Anthony* was wrecked on the shore at Gunwalloe Fishing Cove, on the west coast of the Lizard peninsula, Cornwall. She was commanded by Antonio Pacheco and was owned by King John III of Portugal.

Of the 86 crew on board the *St Anthony*, only 45 survived the wrecking. Valuables were salvaged from the vessel at the time of the wreck but the survivors were relieved of these by local people. The survivors accused 'some prominent local gentry of robbery with violence'. Subsequent litigation has left us with a detailed account of the wrecking and a comprehensive cargo list. The cargo and vessel were valued at £18,880, a fortune at that time.

This detailed cargo list is of interest. The finds recovered from the excavations include a great many candlestick parts, listed in the manifest as 3200 latten (brass or similar copper alloy) candlesticks. The most numerous items from the list are the 8000 cakes (ingots) of copper. The copper ingots recovered from the site vary in weight from 2.9 to 14.7 kg, the mean of their weights is 6.8kg; this would indicate that the total weight of the 8000 copper ingots carried by the *St Anthony* would have been over 54 tonnes. It is also interesting from the cargo list that the 18 silver ingots (£2250) were worth almost as much as the ship and all her fittings (£2470).

## Documentary Sources

The Shipwreck Index of the British Isles has the following entry for the *St Anthony*:

Recorded as wrecked: 19/01/1526

‘Vessel came ashore due to bad weather, with a loss of nearly half her crew. The survivors subsequently accused some prominent local gentry of robbery with violence, and as a result two commissions enquired into the wreck, and the case went to the court of Star Chamber. The incident is extremely well documented, and the wreck site was located in 1981, and subsequently designated under the Protection of Wrecks Act. The cargo included 8000 cakes of copper; 18 cakes of silver (one of which is now in the British Museum); silver vessels and specie; precious stones; tapestry; cloth and linen; 2100 barber’s basins; 3200 brass candlesticks; padlocks and weights; pack thread; needles and compasses; musical instruments; 4 complete sets of horse harness for the king; pitch and tar; brass and iron guns and other goods’ (Larn & Larn, B, 1995).

Similar accounts also appear in *Cornish Shipwrecks – the South Coast* (Carter & Larn, 1969, pp.139-40) and in *Cornwall’s Shipwrecks – the South Coast* (Larn & Larn, 2009, pp.6-9).

The Victoria County History for Cornwall records a Portuguese ship wrecked at Gunwalloe in 1526, which was almost certainly the *St Anthony*.

‘In 1526 a Portuguese ship was wrecked at Gunwalloe, and much cargo was saved. It was seized by the servants of John Milinton, captain of Mount St Michael, Thomas St. Aubyn, and William Godolphin, and when the owner appealed to the justices he was told that it was ‘the custom of the country’ and that no redress was possible. A commission of inquiry issued, followed by Star Chamber proceedings; and then the defence, for which any number of witnesses could always be obtained, was the usual one that the owner had sold the property on the seashore’ (Page, 1906, p.486).

An article entitled *The Wreck of the St Anthony* appeared in the Journal of the Royal Institution of Cornwall (JRIC) in 1968. This gives a good account of the loss of the *St Anthony* as well as the subsequent salvage, based mainly on the surviving documents pertaining to the post-wrecking litigation. The principal of these is the Star Chamber Proceedings record (STAC 2/19/293) which was viewed at the PRO. This document is in very poor condition with large parts now being illegible; however the cargo list (reproduced in the appendix of the Chynoweth article below) is still largely readable. Photographs of STAC 2/19/293 are reproduced on the DVD which accompanies this report.

‘In 1527 the *St Anthony*, belonging to King John III of Portugal was returning to Portugal from Flanders laden with a valuable cargo of silver, copper, jewels and cloth, when she was wrecked at Gunwalloe with the loss of nearly half of her crew. The survivors subsequently accused some prominent local gentry of robbery with violence, two commissions enquired, and the case went to the Star Chamber’.

'The *St Anthony* was the flagship of a fleet under the command of Antonio Pacheco, who was sailing in her with a crew of eighty-six. She was described as a fine ship and was probably a sizeable carrack'.

On board the <i>St Anthony</i> :	Antonio Pacheco	Commander
	Diogo Vaz	Master
	Diogo Alvares	Supercargo
	Jeremy de Corfe	Gentleman of the King's chamber
	86 crew	

'The *St Anthony* crew numbered only eighty-six and contemporary manning ratios suggest a vessel of not more than 350 tons burden and probably less'. Of those on board 45 survived. The wreck occurred at 8am on 19<sup>th</sup> January 1527. 'The Hydrographic Department of the Admiralty has calculated that it was high tide at the time the survivors landed'.

'The Winnianton Court Rolls provide some interesting information about the recovery of the cargo. Shortly after the wreck John Nicholas of Gunwalloe made certain grapnels for the saving and drawing up of brass pieces of ordnance one fathom deep at low water. Sir John Arundell sold two of these guns in 1541 to John Killigrew captain of the castle then being built at Pendennis and the guns were still there in 1582'.

A number of instances of salvage from the wreck are recorded. In 1531 a copper vessel was recovered; in 1534 copper pieces, an iron crossbow and 12 loaves of copper; and as late as 1575 the finding of a silver pipe and chain are recorded. There is also a record of iron guns being recovered from the wreck: 'Some years after the wreck seven cast iron guns worth £30 were recovered from a depth of one fathom at Porth Lingey, and these were claimed by John Arundell of Tolverne... the guns weighed 2020lbs, 1170lb, 900lbs (two) 800lbs (two) and 400lbs' (Chynoweth, 1968).

Note the different year quoted for the wreck by the various sources (1526 by Larn and Page, 1527 by Chynoweth). The date was in fact 1527 as explained by Chynoweth 'Confusion over the date of the wreck has been caused by a mistake in S.P.1/40 where the date is given as Saturday 20<sup>th</sup> January 1526. The 20<sup>th</sup> January 1526/7 was a Sunday, and this led the editor of L.P. Henry VIII to assume that 1525/6 was intended, when 20<sup>th</sup> January was a Saturday. The date is however, correctly given in SP. Ch. 2/19/293'.

Because of the unusual litigation which followed this wreck we have an itemised list of cargo which the *St Anthony* is said to have carried, along with its value. A fair number of the artefacts recovered in the excavations on the site can be identified from this list. The list reproduced below is based on that published by Chynoweth in the appendix to his article:

The cargo list of the *St Anthony* (Star Chamber Proceedings 2/19/293) based on the manifest published in the appendix of (Chynoweth, 1968).

‘Goods and merchandises being in the King of Portugal’s ship which she perished nighest Cornwall’

Item	Value (£)
8000 cakes of copper	3234
18 cakes of silver	2250
3 sets of silver vessels and a chest with ready money	3576
Precious stones, pearls, chains, brooches and jewels of gold	2664
Arras tapestry	766
Holland cloth and linen	610
Satins, velvets and silk	400
Camlets, says and satin of Bruges	250
Frizados and Flemish cloth	520
Fine English cloth	916
English cottons	255
2100 barbers’ basins	164
3200 latten candlesticks	418
6 barrels of stopper nails	40
A pipe of padlocks and weights	20
2 pipes of needles, pack thread and compasses	50
Chest of shawms and other instruments	30
4 sets of armour for the King of Portugal and harnesses for his horses	210
Pitch, tar, tallow and wainscot	37
Brass guns, iron pieces and other artillery with the ship and all other things belonging to her	2470
TOTAL	£18,880

## Archaeological History of the Site

There are conflicting accounts of the site's discovery. The following account (written in 2006) is by Richard Larn, the original licensee of the site:

'Around 1974 Mike Hall rang me and asked if I would go down to Gunwalloe Fishing Cove and dive with him. A holiday family staying with Tony Randall had found a strange copper object buried in the shingle near Loe Bar. One look at the ingot and I knew it was old – the *St Anthony* came to mind. I dived with Mike Hall about 200-300m offshore and started a metal detector search – we found some 48 copper ingots which we left on the seabed. Shortly afterwards I took my boat down to the site and raised about 50 copper ingots, lead fragments, candlestick parts and bits of glass. Tony Randall later dived the site alone and found masses of candlestick pieces and a silver ingot weighing some 17lb. I had two replicas cast of this ingot. One was given to Tony Randall (now in Pengersick Castle) the other is in Charlestown Museum. The original ingot was sold by Tony Randall to the British Museum for £3500.

The site was threatened by the activities of up country divers and we applied to have the site designated. I was the licensee for about 3 years during which Tony Randall and I surveyed the site and drew up a site plan. In 1986 I moved to Scilly and Tony Randall became the licensee. Other finds included hollow lead shot (but no guns or chambers), pewter plates, utensils etc. Only my finds went into the Charlestown Museum – Most of Tony Randall's finds from this site are on display at Pengersick Castle' (Camidge, 2006, p.21).

A slightly different account of the site's discovery is that a copper ingot was recovered by a shellfish diver from St Keverne, who used the ingot as a door-stop. Mike Hall saw this and recognised its antiquity. Mike Hall and Richard Larn then carried out the initial site assessment. Anthony Randall found the silver ingot using his homemade underwater metal detector; it was completely buried in a small hole on top of the reef. Anthony Randall describes his early work on the site: 'diving from the beach I recovered many items, usually following winter storm disturbance. Artefact location mapping was impossible, unnecessary anyway, as items were usually found in locations empty of finds the year before or earlier' (Anthony Randall, personal correspondence July 2013).

### 1977

A document supplied by Anthony Randall shows an analysis of a copper ingot undertaken by RF Tylecote. This document is dated 26<sup>th</sup> October 1977. The analysis of the copper ingot is identical to that published in an IJNA article by Tylecote 'Copper Ingots and Marine Copper', which discusses the metallurgical composition of the 'Loe Bar' ingot (Tylecote, 1980).

Finds recovered from a site described as 'Possibly *St Anthony*' at Fishing Cove were declared to the Receiver of Wreck at Penzance on 11<sup>th</sup> October 1977. The finds declared are:

- |    |  |
|----|--|
| 26 | Copper Ingots (2x8lb, 4x11lb, 2x13lb, 6x14lb, 3x15lb, 7x18lb, 1x22lb & 1x24lb) |
| 2  | Sounding leads (1x14lb, 1x21lb)  |
| 13 | Lead fireballs (4 large, 9 small)  |

NB the 'Lead fireballs' recorded above are more likely to be composite dice shot – a fair number of which have been subsequently recorded from this site.

## 1980

An article was published in IJNA concerning the copper ingot recovered from the site by Tylecote - 'Copper Ingots and Marine Copper' - which discusses the metallurgical composition of the 'Loe Bar' ingot (Tylecote, 1980).

## 1981 (License application)

An application to have the site designated was made on 17 November by Richard Larn. In the application the site is reported to lie in 7m of water 30 to 180m offshore from Loe Bar near Gunwalloe Fishing Cove. An identification of the wreck is made: 'there is good reason to suppose the wreck site to be that of a Portuguese carrack, the *St Anthony* lost in 1527'. The date of the wreck is given as 19.1.1527. There is an excellent account of the loss of the *St Anthony* published in JRIC which includes a detailed list of the cargo (Chynoweth, 1968). The finds recovered from the site match those known to have been on board the *St Anthony*. Only artefacts were seen - 'no visible remains of the wreck are obvious'. The following finds are listed as recovered from the site:

- 42 Hemispherical copper ingots, 10 – 14 kg
- 1 Silver ingot, 7.25 kg
- Candlesticks
- Lead shot
- Assorted artefacts
- 2 Sounding leads, one marked 'XXXXX'

Two plans accompany the 1981 application; they are both based on photocopies of OS maps. The first (1981\_1) shows the location of the site, the second (1981\_2) is at a larger scale and shows a rectangle marked 'Area covered by wreck site' offshore from Gunwalloe Fishing Cove. The rectangle is marked 200x500 feet (61x152m).

The project team is listed as:

- Richard Larn (Licensee)
- Ian Spooner (Archaeological advisor)
- Mike Hall
- Ken Simpson
- Anthony Randall
- Peter McBride

Objects were also declared to the Receiver of Wreck in Penzance on 21<sup>st</sup> November 1981, these were:

- 17 Copper ingots (8-12kg)
- 1 Half hemispherical ingot – possibly zinc (*probably the silver ingot*)
- 16 Cast brass animal figures (3/4 to 1" high)
- 9 Brass candlestick sockets
- 6 Candlestick bases (badly worn)
- 9 Lead spheres (2-3" diameter)
- 1 Brass artefact, 6" long, possible pestle
- 6 Brass spikes, approx. 4" long
- 1 Sounding lead 29" long, 43lb, marked 'XXXXX'

In 1983 W.H.Lane & Son carried out a valuation of these items, which were listed and valued at £2221. The silver ingot is described as weighing 17lb 8oz and being worth £2060.

The site finds list records 12 artefacts as recovered in '1981?', 45 objects recovered August 1981 and 59 objects recovered September 1981.

The *Telegraph* (16.12.1981) has a notice of proposal to designate the site.

The following account of how the site position was obtained for the designation application is worth reproducing:

'Richard and myself undertook the site position survey one day, using three marks onshore. We buoyed what we considered to be the four extremities of the site and took sextant bearings. I then produced a formula using trigonometry, which started very cumbersome but I reduced it bit by bit until I was able to write a computer programme in Basic language, popular at the time. This programme calculated all the distances to the buoyed marks which I was able to transfer onto the 6" OS map of the area. Richard sent this off to the Hydrographic office, who sent us the Lat/Longs. Quite a procedure but a worthwhile exercise. This gave us the position relative to the land - not a satellite in the sky!' (Anthony Randall, personal correspondence July 2013).

The position supplied by the Hydrographic Department (HD) for the *St Anthony* is 50° 03' 18"N, 5° 16' 51" W. They recommend a radius of 110m around this point to cover the whole site, but this is not the position stated in the 1982 designation, and was not supplied until March 1982 - over a month after the site was designated. The position designated in 1982 and the position supplied by the HD are over 350m apart. Interestingly, the HD position (when transformed from OSGB36 to WGS84) is less than 5m from the 2006 re-designation position. Why the position supplied by the HD was never used to amend the 1982 designated position is not clear.

### **1982 (Licensee report)**

The site was designated on 15<sup>th</sup> February 1982. The position given in the statutory Instrument is 50° 03.4'N, 05° 17.1'W. The designated area covers a radius of 75m around this point, but specifically excludes any 'area which lies above high-water mark of ordinary springs'.

The licensee (Richard Larn) had a survey licence in 1982. Poor weather conditions restricted access to the site. Sand levels are said to have been fairly low on the site, and the test pits dug (see below) seem to have reached the layer bearing finds within 0.75m of the seabed surface. However the report goes on to state, 'no artefacts were showing and the single iron cannon known to be on site,

and seen perhaps twice over the last few years remains buried, which suggests that overall, the depth of sand is still considerable’.

Two small test pits were dug on site to allow Ian Spooner to investigate the stratigraphy. ‘At the specific request of the archaeological director, Ian Spooner, two small trial excavation holes were dug at opposite ends of the site, east and west, in order that he could appreciate the layering of the seabed material’.

The stratigraphic sequence exposed in these two test pits was as follows:

St Anthony Stratigraphy 1982	
Sand overlay	Total depth 0.75m
Loose rocks	
Larger broken rocks	
Finds	

Finds mentioned in the licensee report as recovered from these test pits were: five pieces of copper alloy candlestick, ten cast brass figures (feet for candlesticks) and one candle-holder spike.

Objects were also declared to the Receiver of Wreck in Penzance for November-December 1982, these being:

- 12     ‘Animal’ supporters for candlesticks, brass
- 4     Candlestick spikes
- 1     Small piece of lead glazing bar
- 1     Copper ring segment (1.5” diameter)
- 1     Small lead seal

A total of ten hours underwater were spent on site by the team in 1982.

A proton magnetometer survey was undertaken in July of the ‘entire area’. This survey revealed ‘no major ferrous holding areas’. This surprised the team, and because of possible interference from the boat outboard engine the survey was conducted again with the run lines at 90° to the previous survey run lines. The second magnetometer survey did not detect anything either.

An attempt was also made to investigate a perceived problem with the site position ‘sextant angles have been used to resolve the apparent anomaly in the exact position of the site, comparing Ordnance Survey maps and admiralty charts’. They determined to set up their own onshore datum points over the winter to resolve this issue.

A number of articles relating to the site appeared in *Diver Magazine* in 1982. The February issue includes notification of the proposal to designate the site. The May issue contains an account of Richard Larn’s talk about the site to the 11<sup>th</sup> underwater symposium at Plymouth. A two page spread on the site by Richard Larn appears later in 1982. This has some interesting detail including the date of the wreck (19<sup>th</sup> January 1527). The *St Anthony* is reported as having 87 crew and having been commanded by Antonio Pacheco. Details of the salvage of the cargo by the crew and locals are also given, along with the ‘forced’ sale of the cargo to St Aubin and Godolphin for 110 ducats. Salvage continued for a number of years including John Nicholas of Gunwalloe who used ‘certain grapnels

for the saving of brass pieces of ordnance, one fathom deep at low water'. Other items salvaged included a gilt cross in 1530, copper ingots in 1534 and a silver pipe and chain in 1575.

### **1983**

No licensee report was found. Some survey notes from 1983 have been supplied by Anthony Randall. They are dated 27.7.1983 and show the fixing of the site position using horizontal sextant angles from four buoys (stations 1 to 4) positioned at the corners of a rectangle defining the limits of the site. Pages 3 and 4 illustrate how the site topographic plan was drawn from baselines based on the stations 1 to 4. The surveys are signed by Peter McBride / Roy Davies and Anthony Randall / Richard Larn. Page 5 shows a useful sketch plan of the site (titled 'TR's sketch map of the Site'). This shows the approximate location of a number of artefacts including 'broken anchor, cannon, silver melon ingot, 45lb sounding lead and candlestick pieces'. This is the only record I know of for the position of these objects. These survey notes are reproduced on the DVD which accompanies this report.

The site finds list shows that six artefacts were recovered in September 1983.

*Diver Magazine* (June 1983) contains a notice that the site had been designated and news of an upcoming auction at WH Lanes of Penzance, where the silver ingot recovered from the site would be offered for sale. The August issue contains an article by Richard Larn detailing how the silver ingot was withdrawn from the sale after it failed to reach its reserve.

### **1984 (Licensee report)**

The licensee (Richard Larn) held a survey licence in 1984. The report mentions survey work undertaken in 1983, but for some reason this was thought to be unsatisfactory: 'since it was felt that the measurements taken in 1983 might not accurately tie in with work done this season, the site was surveyed starting from scratch'. The survey technique is outlined and consists of taking measured offsets from two baselines. The site plan dated 1984 is the result of this survey; the plan shows no archaeological features at all, only topographic details.

The report contains a note on the painted panels in Gunwalloe Church, which are thought to originate from the wreck of the *St Anthony*: 'The Pilgrim Trust have subsequently paid to have the Rood Screen panels in the church restored and repainted, and their findings support the church records that suggest they come from the actual wreck (of the *St Anthony*) in 1527'.

There is no record of the amount of diving undertaken in 1984, but reports show that work was undertaken in June and July.

### **1985 (Licensee report)**

The licensee (Richard Larn) held an excavation licence in 1985. The report states that work on site did not start until 22<sup>nd</sup> October 1985 due to poor weather earlier in the season. In consequence of this late start the licensee asked for, and was granted, an extension to the licence until 27<sup>th</sup> November 1985.

The 'westernmost' gulley on the site was excavated using a water driven reaction dredge. The sediment encountered in this gulley was sand and gravel and varied in depth between 0.2 and 0.5m. This was said to be 'much less than in other years'. The gulley was excavated down to bedrock, but 'no concretions were found'. Three days diving took place with a reported total of 23.5 hours spent underwater.

The following artefacts were recovered:

<i>St Anthony</i> Finds 1985			
Ref No	No	Material	Description
BBA	1	Brass	Candlestick socket
BBB	1	Brass	Candlestick socket
BBC	1	Brass	Candlestick socket
BBD	1	Brass	Candlestick socket
PA	1	Brass	Candlestick spike
PB	1	Brass	Candlestick spike
PG	1	Brass	Candlestick spike
PD	1	Brass	Candlestick spike
PE, PF, PC	3	Brass	Candlestick fragments
LEB	1	Timber	Fragment 10x1cm with lead strips
LEA	1	Lead	Fireball type shot

The site plan which accompanies the report shows the areas which were excavated and the location of the finds recovered. A photocopy of similar (complete) candlesticks accompanies the report, but the publication from which this copy is taken is not stated.

### 1986 (Licensee report)

The licensee (Richard Larn) held an excavation licence in 1985. However, in the covering letter to the 1986 report Richard Larn stands down as the licensee and recommends team member Anthony Randall as the new licensee. No diving was undertaken on the site in 1986 due to poor weather conditions.

A letter from Duncan Hook of the British Museum to Richard Larn (April 1986) details the analysis of the copper ingots from the *St Anthony*. A total of 20 ingots and one of the copper alloy candlestick sockets were sampled.

'The ingots from the *St Anthony* consist of fairly pure copper, with low amounts of lead, and trace levels of silver, zinc, iron, nickel, arsenic and antimony. The ingots show a good degree of consistency in their composition. The candlestick socket from the *St Anthony* is a leaded copper-zinc-tin alloy, typical of the alloys used to produce Flemish candlesticks of that period. It has higher levels of silver, nickel, antimony and arsenic than the ingots, and is therefore likely to have been made from copper from a different source'.

The full text of the letter is reproduced on the DVD which accompanies this report.

### **1987 (Licensee report)**

The new licensee (Anthony Randall) held an excavation licence in 1987. There was no work on site in 1987: 'no work of any kind was undertaken on the *St Anthony* site. Sand levels were too high in the areas which need investigating'.

An article in IJNA appeared in 1987. Several of the *St Anthony* ingots were purchased by the British Museum, and their analysis is published in this article. A total of 20 *St Anthony* copper ingots were analysed.

'The cargo of the Portuguese ship the *St Anthony* which foundered off Gunwalloe Cove, St Michael's Bay, Cornwall in 1527 provides a good example. The ship was bound for Lisbon from Antwerp and the mixed cargo included ingots of both silver and copper in the form of segments or hemispheres known colloquially as melons. The story of the events after the wreck, when much of the salvaged cargo was forcibly taken from the Portuguese survivors, and the subsequent appeals by the Portuguese king to recover it are well known and have been published in detail elsewhere (Chynoweth, 1968). Although much of the cargo was recovered immediately after the vessel sank some ingots were not recovered until recently. Of these the British Museum has acquired a silver melon weighing 7-8 kilos and five copper melons varying between 2.9 and 14.7 kilos' (Craddock & Hook, 1987).

### **1988 (Licensee report)**

The licensee (Anthony Randall) held an excavation licence in 1988. No work was undertaken due to high sand levels over the site.

The ADU visited the site in 1988, and undertook one dive of 31 minutes duration. They reported that: 'No archaeological remains were observed because of the build-up of sand over the site' (ADU report 036).

### **1989 (Licensee report)**

The licensee (Anthony Randall) held an excavation licence in 1989. No work was undertaken due to high sand levels over the site.

### **1990 (Licensee report)**

The licensee (Anthony Randall) held an excavation license in 1988. No work was undertaken due to high 'shingle' levels over the site. Interestingly, the *Schiedam* site was exposed at the same time as the *St Anthony* site was obliterated by a layer of shingle.

### **1991**

No licensee report found. No record of any licence found.

### **1992**

No licensee report found. No record of any licence found.

The ADU visited the site in July 1992. They undertook two dives of 42 and 54 minutes duration. They report that: 'There is a discrepancy of almost a kilometre between the designated area and the

position of the site as indicated by the Licensee. Both areas were investigated but no archaeological material was seen, and so it was not possible to confirm this inconsistency' (ADU report 92/11).

### **1993 (Licensee report)**

The licensee (Anthony Randall) held an excavation licence in 1993. The report states that a small trial excavation was undertaken 'One day only was spent on a trial excavation in one of the deep gulleys which intercept the shallow reef which comprises the main area of the site'. The report goes on to say that no evidence was found 'related to the wreck. The sediment excavated is reported as fine sand, gravel and small stones to a depth of about 0.4m lying over smooth bedrock. The sediment was judged to have been in constant motion during winter storms. A total of six hours were spent underwater by a team of three divers. The finds list records 14 objects recovered in July 1993. There is no site plan with the licensee report so the exact position of the trench excavated is not known. 1993 appears to be the last time that excavation was undertaken on this site.

The ADU visited the site in May 1993, and undertook a single dive of 33 minutes' duration; they did not see any archaeological material. The report goes on to reiterate that the designated area is about 1km from the site: 'it should be noted that the designated area is not over the site indicated by the finder/Licensee. The ADU was unable to confirm that the position indicated by the Licensee was correct because of the lack of visible archaeological material. However his explanation of how the position of the designated area was incorrectly charted is convincing' (ADU report 93/04).

### **1994 (Licensee report)**

The licensee (Anthony Randall) held an excavation licence in 1994. No work was undertaken due to high sand levels over the site.

### **1995 (Licensee report)**

The licensee (Anthony Randall) held a survey licence in 1995. No work was undertaken due to high sand levels over the site.

An article in IJNA appeared considering ingots in the British Museum, a short extract from which appears below:

'The earliest ingots we currently possess are of copper and silver from the Portuguese vessel the *St Anthony* which sank off Gunwalloe Cove, St. Michael's Bay, Cornwall in 1527 *en route* from Amsterdam to Lisbon. The copper probably emanated from the Erzgebirge in Bohemia and much of it was intended for Portugal's burgeoning West Africa trade.

These ingots, and others from the same wreck which we did not acquire, were analysed and the information has been of great value in our understanding of the nature of the copper in that trade. These ingots featured in our first publication and have latterly been considered in more detail' (Craddock & Hook, forthcoming). (Craddock & Hook, 1995)

### **1996 (Licensee report)**

The licensee (Anthony Randall) held an excavation license in 1996. No work was undertaken due to high sand levels over the site and problems with the vessel used for the project.

The ADU visited the site in June 1996; they undertook two dives of 69 and 88 minutes' duration. No archaeological material was seen on either dive. The ADU remain convinced that the designated area may not include the site 'Since the ADU's first visit to the site in 1988 it has transpired that the location of the excavations and thus the source of recovered archaeological material did not correspond with the area which has been designated. Various explanations have been given for this error such as the Hydrographic Office deriving the wrong Latitude and Longitude from a marked chart supplied to them by the future licensees. In subsequent years it has not been possible for the ADU to check and correct this error as no archaeological remains have been seen on the seabed due to extensive sand cover' (ADU report 96/08).

#### **1997 (Licensee report)**

The licensee (Anthony Randall) held a survey licence in 1997. No work was undertaken due to high sand levels over the site and problems with the vessel used for the project.

#### **1998 (Licensee report)**

The licensee (Anthony Randall) held an excavation licence in 1998. No work was undertaken due to problems with the vessel used for the project.

The ADU visited the site in May 1998, undertaking a single dive of 43 minutes' duration. They report that 'no archaeological material was seen'. The ADU are still not convinced that the site is covered by the designated area (ADU report 98/01).

#### **1999**

The licensee (Anthony Randall) held an excavation licence in 1999. No licensee report for 1999 was found. However as the finds list does not record any artefacts recovered in 1999 it seems likely that no excavation took place during 1999.

#### **2000 (Licensee report)**

The licensee (Anthony Randall) held an excavation licence in 2000. No work was undertaken on the site in 2000.

#### **2001 (Licensee report)**

The licensee (Anthony Randall) held a surface recovery licence in 2001. No work was undertaken on the site in 2000. This is the last year that Anthony Randall held a licence for this site.

#### **2002**

No licence was issued for the site in 2002.

#### **2003**

No licence was issued for the site in 2003.

#### **2004 (Licensee report)**

The licensee (Jason Roseveare) held a visitor licence in 2004. The report includes two illustrations of a bathymetric survey undertaken. It also includes a number of underwater photographs of

unidentified objects. Annex D contains a sketch plan of the site, which is not to scale and does not include a north pointer.

Wessex Archaeology visited the site in September 2004 and undertook two dives of 82 and 52 minutes' duration. They established a position for 'the 2004 site' from photographic marks supplied by myself and identification of seabed features 'confirmed by the licensee Jason Roseveare'. This position was 412m south-east of the centre of designation, and thus '337m outside the designated area'. They go on to state: 'The SI would appear to be in the wrong position ... a new location for the SI and re-designation would appear to be warranted' (Wessex\_Archaeology, 2005, p.16)

## **2005**

No licence was issued for the site in 2005.

## **2006**

No licence was issued for the site in 2006.

The site was re-designated under the Protection of Wrecks Act, thus resolving the problem that the site lay outside the area designated. The new designation was:

Protection of Wrecks (Designation), (England), (No 7) order 2006

The area within a distance of 150m of Latitude 50° 03.335826 north, Longitude 05° 16.911581 west but excluding any part of that area which lies above the high water mark of ordinary spring tides.

Note the extraordinary precision of the position quoted, resulting in millimetric precision.

## **2007 (Licensee report)**

The licensee (David Roberts) held a visitor licence in 2007. Mr Roberts undertook 31 dives on the site during 2007. He reported seeing a number of artefacts, including a lead dice shot, which he pointed out to Wessex Archaeology during their visit to the site in June.

Wessex Archaeology visited the site in June 2007 and undertook diving and an underwater metal detector survey on the site. The number and duration of the dives undertaken is not reported in the Designated Site Assessment produced. They report that: 'Several artefacts were observed which would appear to date to the 16th century, and thus are likely to derive from the *St. Anthony*. These artefacts are all relatively small in size and are likely to represent derived material transported by wave action and swells rather than *in situ* archaeological deposits' and 'The area searched in 2007 is best described as being an area of scattered artefacts rather than a coherent wreck site. No articulated wreckage or large artefacts were noted by WA' (Wessex\_Archaeology, 2007).

Four artefacts were recovered from the site by Wessex Archaeology. These have been declared to the Receiver of Wreck (droit 244/07).

Artefacts recovered by WA 2007		
Find No	Description	Location
4030	Copper alloy object – possibly musket fitting	EH
4034	Copper alloy eyelet – possibly modern fishing debris	EH
4036	Small roll of lead sheet	EH
4039	Lead die shot, broken but retaining some traces of its ferrous core	EH

#### **2008 (Licensee report)**

The licensee (David Roberts) held a visitor licence in 2008. Mr Roberts undertook 21 dives on the site during 2008. Mr Roberts reported increased sand and shingle levels over the site, which had buried the control points which Wessex Archaeology had left on the site in 2007. Two iron anchors are reported and underwater photographs of the anchors are included in the report.

#### **2009 (Licensee report)**

The licensee (David Roberts) held a visitor licence in 2009. Mr Roberts undertook 19 dives on the site during 2009. The licensee found a number of iron objects on the site, including what appears to be a banded gun. Underwater photographs of these objects are included in the report. Mr Roberts contacted Nicolas Hall at the Royal Armouries concerning the possible gun and reports ‘I also contacted Nicolas Hall at the Royal Armouries who suggested that it looked like a Hoop & Stave gun contemporary with the time of the *St Anthony*’.

#### **2010 (Licensee report)**

The licensee (David Roberts) held a visitor licence in 2010. Mr Roberts undertook 31 dives on the site during 2010. The banded gun located in 2009 was found to be buried by a layer of sand. The depth of this sand was estimated by Mr Roberts: ‘By gauging the depth of this sediment in relation to the known reef system alongside the cannon we estimate that at least 2 metres of sand were covering the area’. A number of pockets of lead shot were also located as well as another iron anchor (making three in total). Underwater photographs of all these objects were included in the report.

#### **2011 (Licensee report)**

The licensee (David Roberts) held a visitor licence in 2011. Mr Roberts undertook 37 dives on the site during 2011. Sediment levels on the beach were reported as much reduced: ‘We estimate that the level on the Southern end of the beach area at Gunwalloe Fishing Cove dropped again by as much as 5 metres in places’. As a result some large sections of iron wreckage (from iron wrecks) were exposed on the beach. Photographs of this wreckage are included in the report. Underwater the sediment cover varied, with some areas covered and others exposed. More underwater photographs are included of the anchors and other iron objects, including what is described as iron ballast.

## 2012 (Licensee report)

The licensee (David Roberts) held a visitor licence in 2012. Mr Roberts undertook 31 dives on the site during 2012. The sediment levels covering the site were found to be relatively low, resulting in the banded iron gun being exposed 'for the first time in a number of years'. The anchors were still visible and a new anchor was found, together with what is possibly a section of the muzzle of an iron gun. Underwater photographs of these objects are included in the licensee's report.

## 2013

The licensee, David Roberts provided a Google earth image of the site with the approximate positions of the artefacts he has located to date. Each object is marked by a lower case letter, and an underwater photograph is included for each. These images all appear on the DVD.

b	Iron gun	J	Iron object
c	Iron ballast?	k	Iron anchor (part)?
d	Composite lead dice shot	k_2	Iron anchor [3]
e	Iron anchor [1]	l	Iron object
g	Iron object	m	Iron anchor [4]
h	Iron anchor [2]	o	Iron anchor [5]
l	Part of an iron gun?	p	Lead shot



Fig 2

Shows the approximate location of the artefacts located by David Roberts between 2007 and 2012

## The Site Plans

The site plans accompanied the various licensee reports. A total of ten separate site plans were found, ranging in date from 1981 to 2013. These plans are all reproduced on the DVD which accompanies this report. A summary of the site plans appears below:

<i>Schiedam</i> Site Plans		
Year	Title	Details
1981_1	No title	Photocopy of a map showing the west coast of the Lizard peninsula.
1981_2	Gunwalloe Fishing Cove	Photocopy of OS map for Fishing Cove with 'Area covered by Wreck Site' marked on it.
1983_1	TR's sketch map of site (copy)	Shows sand, reefs and some gulleys. Has the following objects marked: Cob 8 real piece, broken anchor, cannon, silver melon ingot, 45lb sounding lead and candlestick pieces.
1984_1	<i>St Anthony</i> Wreck Site	Shows a rectangle labelled ' <i>St Anthony</i> Site' marked on a large scale map of Gunwalloe Fishing Cove. This probably shows the area covered by survey 1984_2
1984_2	Survey of <i>St Anthony</i> Site – Gunwalloe Cornwall	Topographic survey shows areas of sand and rock as well as contour lines defining the areas of reef. There are no archaeological features or finds shown on the survey.
1985_1	<i>St Anthony</i> – excavation area 1985	This is a plan which shows the two areas excavated in 1985 and the location of the individual artefacts recovered. The plan is marked 'extreme north-west corner of site plan submitted in 1984' (1984_2?)
2004_1	P6_JRoseveare_04	Colour bathymetric survey with contour lines
2004_2	P7_JRosevear_04	Colour bathymetric survey with contour lines
2004_3	P14_JRoseveare_04	Sketch plan of the site with underwater photographs indexed to the sketch. Not to scale, no north pointer.
2013_1	Google earth 'plan'	A Google earth ariel photograph with the approximate position of 14 objects marked on it was provided by David Roberts. An underwater picture for each of these marked artefacts is provided.

## **The Photographs**

The photographs are all reproduced on the DVD which accompanies this report. Below is a summary of what each photograph depicts:

1981

- 9 'brass' candlestick fragments
- 9 candlestick holders
- 16 'brass animal' supports for candlesticks
- 3 Candlesticks
- An assortment of objects (about 48 are shown)

1985

- An illustration of complete candlesticks from an unnamed publication

2004

- 3 underwater photographs
- 2 photographs of surf at the site

2008

- 1. Underwater photo of Iron anchor
- 2. Detail of an iron anchor
- 3. Iron anchor

2009

- 1. The beach at Gunwalloe Fishing Cove
- 2. The beach at Gunwalloe Fishing Cove
- 3. Underwater picture of an iron gun
- 4. Underwater picture of an iron gun
- 5. Unidentified iron object
- 6. Copper nail and a lead object

2010

- 1. Small lead shot
- 2. Iron anchor
- 3. Iron anchor
- 4. An iron object

2011

- 1. Modern iron wreckage exposed on the beach at Gunwalloe Fishing Cove
- 2. Modern iron wreckage exposed on the beach at Gunwalloe Fishing Cove
- 3. Iron objects – possibly ballast

2012

1. Iron gun
2. Iron anchor
3. Iron anchor
4. Part of a possible iron gun
5. Part of a possible iron gun
6. Iron concretion on the seabed

## The Finds List

The most complete finds list for this site is that produced for the *St Anthony* Finds Record project commissioned by English Heritage (EH3944). This is reproduced below in an abridged form with some of the data fields removed to allow the list to fit on the printed page. The complete finds list is reproduced on the DVD which accompanies this report. A total of 285 objects are recorded in this finds list.

The following abbreviations have been used in the current location field:

BM	British Museum
CSM	Charlestown Shipwreck Museum
LHC	Longstone Heritage Centre, Isles of Scilly
MH	Mike Hall, Ruan Minor, Cornwall
PC	Pengerisick Castle, Praa Sands, Cornwall
RL	Richard Larn, Isles of Scilly

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
1	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned socket for the attachment to the candlestick base - with the peg [13 x 13] still in place. The peg is secured by three copper alloy wedges.	71 x 60 x 24	Aug 1981	AA	PC	
2	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned socket for the attachment to the candlestick base - with the peg [9 x 11] still in place. The peg is secured by three copper alloy wedges.	67 x 61 x 23	Aug 1981	AB	PC	
3	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Has a square sectioned hole for attachment to the candlestick base - which has a square sectioned peg still within the socket. The peg is fastened with copper alloy wedges..	65 x 56 x 20	Aug 1981	AC	PC	
4	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Part of a square sectioned hole for attachment to the candlestick base.	62 x 44 x 15	Aug 1981	AD	PC	
5	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole [12 x 12] for the attachment to the candlestick base.	56 x 48 x 16	Aug 1981	AE	PC	
7	Candle holder	Copper alloy	1	Worn candlestick support or leg in the shape of a sitting lion. Square sectioned hole (9 x 9) for attachment to the candlestick base.	43 x 41 x 18	Aug 1981	AG	PC	
8	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole (9 x 9) for attachment to the candlestick base.	56 x 45 x 15	Aug 1981	AH	PC	
9	Candle holder	Copper alloy	1	Worn candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	41 x 39 x 21	Aug 1981	AI	PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
10	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	44 x 43 x 18	Aug 1981	AJ	PC	
13	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	43 x 42 x 18	Aug 1981	AK	PC	
14	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	38 x 32 x 15	Aug 1981	AL	PC	
16	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Has a square sectioned hole for attachment to the candlestick base - part of which is still within the socket.	44 x 42 x 18	Aug 1981	AN	PC	
17	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned socket for the attachment to the candlestick base - with the peg [9 x 9] still in place.	45 x 44 x 18	Aug 1981	AO	PC	
18	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	35 x 32 x 9	Sept 1981	AP	PC	
20	Candle holder	Copper alloy	1	Very worn candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	31 x 32 x 7	Aug 1981	AR	PC	
21	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	35 x 32 x 11	Aug 1981	AS	PC	
22	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion.	31 x 23 x 7	Aug 1981	AT	PC	
23	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	68 x 56 x 22	Sept 1981	AU	PC	
25	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	42 x 41 x 16	Sept 1981	AV	PC	
26	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion (head missing). Square sectioned hole for attachment to the candlestick base.	52 x 47 x	Sept 1981	AW	PC	
27	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	40 x 40 x	Sept 1981	AX	PC	
28	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole [9 x 9] for the attachment to the candlestick base.	40 x 38 x 15	Sept 1981	AY	PC	
29	Candle holder	Copper alloy	1	Worn candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	36 x 45 x 14	Sept 1981	AZ	PC	
30	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	40 x 37 x 11	Sept 1981	BA	PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
31	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole (9 x 9) for attachment to the candlestick base.	40 x 35 x 15	Sept 1981	BB	PC	
32	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	40 x 38 x 14	Sept 1981	BC	PC	
33	Candle holder	Copper alloy	1	Worn candlestick support or leg in the shape of a sitting lion. Part of a square sectioned hole for attachment to the candlestick base.	32 x 30 x 11	Sept 1981	BD	PC	
34	Candle holder	Copper alloy	1	A very worn candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	38 x 38 x 15	Sept 1981	BE	PC	
35	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	37 x 30 x 10	Sept 1981	BF	PC	
52	Candle holder	Copper alloy	1	Spike (for holding a candle?)	87 x 21 diameter	Sept 1981	NA	PC	
53	Candle holder	Copper alloy	1	Spike (for holding a candle?)	116 x 6 diameter	Sept 1981	NB	PC	
54	Candle holder	Copper alloy	1	Spike (for holding a candle?)	110 x 21 diameter	Sept 1981	NC	PC	
55	Candle holder	Copper alloy	1	Spike (for holding a candle?)	90 x 22 diameter	Sept 1981	ND	PC	
56	Candle holder	Copper alloy	1	Spike (for holding a candle?)	115 x 7 diameter	Sept 1981	NE	PC	
66	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes (14 diameter) possibly to allow the removal of the candle stub.	85 x 32 diameter	Sept 1983	AAA	PC	
67	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes (only one survives) possibly to allow the removal of the candle stub.	78 x 26 diameter	Sept 1983	AAB	PC	
68	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes possibly to allow the removal of the candle stub.	77 x 30 diameter	Sept 1983	AAC	PC	
69	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Upper part very eroded.	82 x 28 diameter	Sept 1983	AAD	PC	
70	Candle holder	Copper alloy	1	Candlestick holder. Has two holes (13 diameter) possibly to allow the removal of the candle stub.	82 x 33 diameter	Sept 1983	AAE	PC	
71	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes (15 diameter) possibly to allow the removal of the candle stub.	82 high 32 diameter top 25 diameter bottom	Sept 1983	AAF	PC	
72	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together - the lower part is loose - which makes it possible to see how they are joined	84 x 26 diameter	Sept 1981	AAG	PC	
75	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole for attachment to the candlestick base.	36 x 28 x 9	Sept 1981	AM	PC	
76	Candle holder	Copper alloy	1	Candlestick holder. Has two holes , possibly to allow the removal of the candle stub.	51 x 30	Sept 1981	AAK	PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
78	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes (12 diameter), possibly to allow the removal of the candle stub.	82 x 31 diameter	Sept 1981	AAM	PC	
79	Candle holder	Copper alloy	1	Candlestick holder. Has two holes of different diameters, one (12 diameter) the other [8 diameter] - possibly to allow the removal of the candle stub.	81 x 39 diameter	Aug 1981	AAN	PC	
80	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes (15 diameter), possibly to allow the removal of the candle stub.	76 x 26 diameter	Sept 1981	AAO	PC	
81	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes, possibly to allow the removal of the candle stub.	80 x 30 diameter	Sept 1981	AAP	PC	
83	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes (12 diameter), possibly to allow the removal of the candle stub.	79 x 36 diameter	Sept 1981	AAR	PC	
84	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes one (17 diameter) and the other [11 diameter] possibly to allow the removal of the candle stub.	82 x 32 diameter	Sept 1981	AAS	PC	
85	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Has two holes, possibly to allow the removal of the candle stub.	82 x 32 diameter	Sept 1981	AAT	PC	
86	Candle holder	Copper alloy	1	Lower part of candle holder made of two pieces joined together.	18 x 34 diameter	Sept 1981	AAU	PC	
87	Candle holder	Copper alloy	1	Candlestick holder.	71 x 21 diameter	Sept 1981	AAV	PC	
90	Object	Copper alloy	1	Small casting in the shape of a leg	76 x 20 x 25		CAA	PC	
91	Object	Copper alloy	1	Small casting in the shape of a leg	80 x 21 x 28		CAB	PC	
92	Object	Copper alloy	1	Small casting in the shape of a leg	80 x 20 x 25		CAC	PC	
93	Object	Copper alloy	1	Long strip bent into a circle with two eroded extensions. Constructed from sheet in a similar manner to {100} - tongs?	106 x 61 x 18	Sept 1981	CAD	PC	
94	Inkwell	Copper alloy	1	Solid piece of copper alloy, externally approximately cube shaped - with cylindrical hole in one face. Possibly an ink well	35 x 30 x 25. Internal hole 23 diameter	Sept 1981	CAE	PC	
95	Bolt	Copper alloy	1	Copper alloy fastening bolt - possibly from a later vessel than the <i>St Anthony</i> .	79 x 16 diameter	Sept 1981	CAF	PC	
96	Bolt	Copper alloy	1	Copper alloy fastening bolt - possibly from a later vessel than the <i>St Anthony</i> .	251 x 11 diameter	Sept 1981	CAG	PC	
97	Sheave	Copper alloy	1	Bearing from the centre of a block sheave - possibly from a later wreck	95 x 81 x 14. Central hole 28 diameter	Sept 1981	CAH	PC	
98	Nail?	Copper alloy	1	Square sectioned spike	75 x 19 x 7	Sept 1981	CAI	PC	
99	Bolt	Copper alloy	1	Copper alloy fastening bolt - possibly from a later vessel than the <i>St Anthony</i> .	206 x 17 diameter	Sept 1981	CAJ	PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
100	Handle	Copper alloy	1	Fabricated from folded sheet (seam is visible).	308 wide 18 x 13 in section	Sept 1981	CAK	PC	
103	Nail?	Copper alloy	1	Possibly a nail head - apparently constructed by folding sheet copper (seam is evident)	11 x 17 diameter	Sept 1981	DAE	PC	
107	Sheet	Lead	1	Thick rectangular sheet of lead.	98 x 46 x 13	Sept 1981	LAD	PC	
108	Shot	Lead	1	Sphere - hollow? Scar on outside - possibly where the ball was closed. Several patches of fe concretion on the surface of the lead. Composite dice shot?	66 diameter	Sept 1981	LAE	PC	
109	Shot	Lead	1	Part of a crushed hollow lead sphere. Possibly composite lead/iron dice shot, the iron having corroded away.	41 x 38	Sept 1981	LAF	PC	
110	Shot	Lead	1	Flattened sphere - possibly hollow. Four small holes and evidence of iron concretion. Composite dice shot?	42 diameter	Sept 1981	LAG	PC	
111	Shot	Lead	1	Hollow lead sphere - two holes. Internally approximately cube shaped with traces of possible Fe concretion. Slightly squashed. Composite dice shot?	38 x 43	Aug 1981	LAH	PC	
113	Shot	Lead	1	Hollow lead sphere - three holes. Internally approximately cube shaped. External mould line visible. Composite dice shot?	42 diameter	Aug 1981	LAJ	PC	
114	Shot	Lead	1	Hollow lead sphere - two holes. Inside is cube shaped. Composite dice shot	42 diameter	Aug 1981	LAK	PC	
115	Shot	Lead	1	Hollow lead sphere. Two holes with some evidence of iron concretion incorporated. Composite dice shot	41 diameter	Sept 1981	LAL	PC	
116	Shot	Lead	1	Hollow lead sphere. One large hole. Inside is cube shaped. Composite dice shot	42 diameter	Aug 1981	LAM	PC	
117	Shot	Lead	1	Hollow lead sphere with irregular shaped hole. Internally approximately cube shaped with concretion, sand and small pebbles. Composite dice shot	42 diameter	Sept 1981	LAN	PC	
118	Shot	Lead	1	Sphere, probably hollow. Rectangular hole (9 x 6). Evidence of sand and pebbles inside. Composite dice shot?	42 diameter	Sept 1981	LAP	PC	
122	Shot	Lead	1	Lead sphere slightly flattened at one end	36 diameter	Sept 1981	LAT	PC	
124	Shot	Lead	1	Hollow lead sphere - one large hole (21x20). Internally approximately cube shaped. Composite dice shot	42 diameter	Sept 1981	LAV	PC	
125	Shot	Lead	1	Hollow lead sphere - one large hole. Internally irregularly shaped. Composite dice shot?	38 diameter	Sept 1981	LAW	PC	
127	Shot	Lead	1	Part of a hollow sphere. Two holes. Inertia filled with sand and small pebbles. Could be composite dice shot?	62 diameter	Aug 1981	LAY	PC	
128	Sounding lead	Lead	1	Bottom part of a sounding lead. Octagonal in section. Tallow hole [24mm diameter] in the bottom.	75 x 52 diameter	Sept 1981	LAZ	PC	
129	Sounding lead	Lead	1	Faceted (octagonal). Deep (40mm) tallow receptacle.	265 x 37 diameter	Sept 1981	LBA	PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
130	Sounding lead	Lead	1	Traces of (octagonal?) faceting but now worn. Tallow receptacle.	190 x 60 diameter	Sept 1981	LBB	PC	
131	Object	Lead	1	Solid disk, flat on one surface, other surface slightly convex. Use uncertain	16 x 56 diameter	Sept 1981	LBC	PC	
135	Shot	Lead	1	Sphere, flattened - hollow? Three small external holes. Composite dice shot?	44 diameter	Sept 1981	LBG	PC	
136	Shot	Lead	1	Hollow ball, irregular shape. 2 small holes. Exterior has imbedded pebbles. Composite dice shot?	50 x 31	Sept 1981	LBH	PC	
137	Shot	Lead	1	Hollow lead sphere. Two holes. Flattened. Composite dice shot?	43 diameter	Sept 1981	LBH	PC	
140	Shot	Lead	1	Hollow lead sphere - one large hole. Internally approximately cube shaped. Composite dice shot	41 diameter	Aug 1981	LBL	PC	
141	Shot	Lead	1	Misshapen sphere, probably hollow. Two small holes. Composite dice shot?	40 diameter	Aug 1981	LBM	PC	
142	Shot	Lead	1	Solid lead ball with two small holes.	25 diameter	Sept 1981	LBN	PC	
143	Shot	Lead	1	Part of a hollow sphere. One large hole. Interior irregularly shaped. Composite dice shot?	58 x 64	Sept 1981	LBO	PC	
144	Shot	Lead	1	Misshapen hollow sphere. One large hole. Inside cube shaped. Composite dice shot	41 x 50 x 33	Sept 1981	LBP	PC	
146	Shot	Lead	1	Hollow lead sphere - one large hole. Irregular - inside has dark staining and is roughly cube shaped. Composite dice shot	44 diameter	Aug 1981	LBR	PC	
147	Shot	Lead	1	Hollow lead sphere - two irregular holes. Contains what looks like Fe concretion and small pebbles. External mould line visible. Composite dice shot?	44 diameter	Aug 1981	LBS	PC	
148	Shot	Lead	1	Lead sphere, possibly hollow. Small patch (6x5) Fe concretion on outside. External mould line visible. Composite dice shot?	41 diameter	Aug 1981	LBT	PC	
149	Shot	Lead	1	Hollow lead sphere - one large hole. External mould line visible. Composite dice shot?	42 diameter	Sept 1981	LBU	PC	
150	Shot	Lead	1	Lead sphere, possibly hollow. Two small holes. Small patch (15x10) Fe concretion on outside. External mould line visible. Composite dice shot	41 diameter	Sept 1981	LBV	PC	
151	Shot	Lead	1	Hollow lead sphere. One large hole with loose material inside. External mould line visible. Composite dice shot?	41 diameter	Aug 1981	LBW	PC	
152	Shot	Lead	1	Hollow lead sphere. One large hole (22x18). Interior cube-shaped. External mould line visible. Composite dice shot	41 diameter	Aug 1981	LBX	PC	
153	Shot	Lead	1	Sphere - hollow? Several very small external dents. External mould line visible. Composite dice shot?	43 diameter	Aug 1981	LBZ	PC	
154	Shot	Lead	1	Hollow lead sphere - one large hole. Internally approximately cube shaped (23 x 25 x 22). Composite dice shot	44 diameter	Aug 1981	LBZ	PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
155	Shot	Lead	1	Lead sphere - possibly hollow. One small hole (15x10). External mould line visible. Composite dice shot?	41 diameter	Aug 1981	LCA	PC	
156	Shot	Lead	1	Hollow sphere. One large hole. Inside filled with concreted sand and pebbles. Composite dice shot?	41 diameter	Aug 1981	LCB	PC	
157	Shot	Lead	1	Lead sphere - hollow. One hole (20x10). Has what appears to be Fe concretion on the outside. Composite dice shot?	42 diameter	Aug 1981	LCC	PC	
158	Shot	Lead	1	Hollow lead sphere. One hole with iron concretion incorporated. Traces of iron staining. Composite dice shot?	62 diameter	Aug 1981	LCD	PC	
159	Shot	Lead	1	Hollow sphere. One large hole. Interior roughly spherical (40 diameter). Composite dice shot?	65 diameter	Aug 1981	LCE	PC	
160	Shot	Lead	1	Part of a hollow lead sphere - one large hole. Internally approximately cube shaped. Small piece of iron incorporated into the lead. Composite dice shot	40 diameter	Aug 1981	LCF	PC	
161	Shot	Lead	1	Part of a hollow lead sphere - some evidence of iron concretion inside. Composite dice shot	39 diameter	Aug 1981	LCG	PC	
162	Shot	Lead	1	Part of a hollow sphere. One large hole. Inertia cube shaped (26 □). Possible iron concretion inside. Composite dice shot?	40 diameter	Aug 1981	LCH	PC	
163	Shot	Lead	1	Solid lead sphere	27 diameter	Aug 1981	LCI	PC	
164	Shot	Lead	1	Lead sphere, possibly hollow. Four small holes. Small patch (8x8) Fe concretion on outside. Composite dice shot?	41 diameter	Aug 1981	LCJ	PC	
166	Shot	Lead	1	Misshapen hollow sphere. One large hole. Inside filled with concreted sand and pebbles. Composite dice shot?	42 diameter	Aug 1981	LCL	PC	
167	Shot	Lead	1	Lead sphere, possibly hollow. Two small holes). External mould line visible. Composite dice shot?	41 diameter	Aug 1981	LCM	PC	
170	Sheet	Lead	1	Strip of sheet lead with one square-sectioned nail hole.	24 x 65 x 1	Sept 1981	LCP	PC	
172	Sheet	Lead	1	Strip of sheet lead with one worn nail hole.	22 x 45 x 1	Sept 1981	LCR	PC	
173	Anode	Zinc	1	Misshapen piece of zinc? The surface shows many small silver flecks - possibly part of a modern marine sacrificial anode.	52 x 51 x 33	Sept 1981	LCS	PC	
176	Sheet	Lead	1	Thick rectangular sheet of lead.	52 x 50 x 8	Aug 1981	LCV	PC	
179	Came	Lead	1	Possible glazing came.	36 x 9 x 3	Sept 1981	LCY	PC	
180	Sheet	Lead	1	Strip of sheet lead with one worn nail hole.	30 x 16 x 1	Sept 1981	LCZ	PC	
181	Shot	Lead	1	Lead sphere with casting seam visible. Traces of iron concretion (presumably from corrosion of dice) Composite iron dice shot	42 diameter		0678	CSM	Record # 418 in the Charlestown Shipwreck Museum database
182	Shot	Lead	1	Misshapen piece of lead - possibly a much battered composite dice shot?	36 x 60 x 40	Sept 1981	LDB	PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
183				<Number not used>					
184	Ingot	Silver	1	In the shape of a quarter sphere - roughly half of one of the copper ingots (but larger). AJR only has a copy - the original was sold to the British Museum.	228 x 110 x 65 (copy)	Sept 1981	SAB (copy) 1985.07 04.1	BM	BM number 1985.0704.1
185	Shot	Lead	1	Hollow lead sphere with piece missing (corroded?). Casting seam visible. The interior is roughly cube shaped with traces of iron concretion. Composite iron dice shot	63 diameter		0686	CSM	Record # 415 in the Charlestown Shipwreck Museum database
186	Shot	Lead	1	Lead sphere with casting seam visible. Traces of iron concretion (presumably from corrosion of dice). Composite iron dice shot	63 diameter		0674	CSM	Record # 416 in the Charlestown Shipwreck Museum database
187	Shot	Lead	1	Lead sphere with casting seam visible. Composite iron dice shot	41 diameter			CSM	Record # 419 in the Charlestown Shipwreck Museum database
188	Shot	Lead	1	Lead sphere with casting seam visible. Traces of iron concretion (presumably from corrosion of dice). Composite iron dice shot	43 diameter		0677	CSM	Record # 420 in the Charlestown Shipwreck Museum database
189	Shot	Lead	1	Lead sphere with casting seam visible. Traces of iron concretion (presumably from corrosion of dice). Composite iron dice shot	42 diameter		0675	CSM	Record # 424 in the Charlestown Shipwreck Museum database
190	Shot	Lead	1	Lead sphere with casting seam visible. Split showing hollow interior. Composite iron dice shot	40 diameter		0676	CSM	Record # 425 in the Charlestown Shipwreck Museum database
191	Ingot	Copper	1	Hemispherical copper ingot. Some evidence of corrosion	173 diameter x 63			CSM	Record # 381 in the Charlestown Shipwreck Museum database
192	Ingot	Copper	1	Hemispherical copper ingot.	164 diameter x 58			CSM	Record # 382 in the Charlestown Shipwreck Museum database
193	Ingot	Copper	1	Hemispherical copper ingot.	163 diameter x 56			CSM	Record # 356 in the Charlestown Shipwreck Museum database
194	Ingot	Copper	1	Hemispherical copper ingot.	174 diameter x 66		0085	CSM	Record # 357 in the Charlestown Shipwreck Museum database

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
195	Ingot	Copper	1	Hemispherical copper ingot. Apparently modern drill hole (possibly where the ingot has been sampled?)	185 diameter x 61		0086	CSM	Record # 358 in the Charlestown Shipwreck Museum database
200	Shot	Lead	1	Part of a hollow sphere. One large hole. Inside irregularly shaped. Composite dice shot?	61 x 54 x 40		LBK	PC	
201	Shot	Lead	16	Solid spheres of lead	17 diameter			PC	
202	Shot	Lead	2	Solid spheres of lead	12 diameter			PC	
203	Shot	Lead	7	Solid spheres of lead	10 diameter			PC	
204	Ingot	Copper	1	Approximately hemi-spherical. Two possible very worn stamp impressions on the flat side.	56 x 135 diameter		CBA	PC	
205	Ingot	Copper	1	Approximately hemi-spherical. Possible very worn stamp impression on the flat side.	60 x 155 diameter		CBB	PC	
206	Ingot	Copper	1	Approximately hemi-spherical. Possible very worn stamp impression on the flat side.	62 x 155 diameter		CBC	PC	
207	Sounding lead	Lead	1	A very large 'deep sea' sounding lead. Faceted (octagonal) and marked with incised Roman numerals 'XXXXX' - possibly indicating its weight (50lbs). Tallow receptacle 22 deep.	725 x 68 diameter			PC	
208	Candle holder	Copper alloy	1	Candlestick holder. Consists of two pieces joined together. Upper part very eroded.	78 x 26 diameter			PC	
209	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Part of a square sectioned hole for attachment to the candlestick base.	36 x 25 x 11			PC	
210	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Square sectioned hole (9 x 9) for attachment to the candlestick base.	44 x 42 x 16			PC	
211	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Part of a square sectioned hole for attachment to the candlestick base.	42 x 35 x 11			PC	
212	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Part of a square sectioned hole for attachment to the candlestick base.	33 x 25 x 6			PC	
213	Candle holder	Copper alloy	1	Part of the socket only from a candlestick support (lion shape)?	15 x 7 x 2			PC	
214	Sheet	Copper alloy	2	Two small frags of copper sheet	22 x 20 and 18 x 12 - both 1.5 thick			PC	
215	Candle holder	Composite - Copper alloy & lead	1	The main body of the candlestick - fits between the candle holder and the lion feet. Appears to be a hollow casting of copper alloy filled with lead.	240 x 17 diameter (top)		BAB	PC	
216	Candle holder	Copper alloy	1	The main body of the candlestick - fits between the candle holder and the lion feet. Appears to be a hollow casting of copper alloy probably filled with lead.	182 x 14 diameter (top)		BAF	PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
217	Candle holder	Copper alloy	1	The main body of the candlestick - fits between the candle holder and the lion feet. Appears to be a hollow casting of copper alloy probably filled with lead.	182 x 14 diameter (top)		BAC	PC	
218	Candle holder	Copper alloy	1	The main body of the candlestick - fits between the candle holder and the lion feet. Traces of one peg for foot attachment. Appears to be a hollow casting of copper alloy probably filled with lead.	162 x 7 diameter (top)		BAK	PC	
219	Candle holder	Composite - Copper alloy & lead	1	The main body of the candlestick - fits between the candle holder and the lion feet. Traces of two pegs for foot attachment. Appears to be a hollow casting of copper alloy filled with lead. The largest of the candlestick bases.	300 x 16 diameter (top)		BAA	PC	
220	Pestle	Copper alloy	1	Appears to be a double ended pestle	195 x 24 x 28			PC	
221	Candle holder	Copper alloy	1	Candlestick holder. Has two holes (11 diameter) possibly to allow the removal of the candle stub.	76 x 28 diameter		AAI	PC	
222	Candle holder	Copper alloy	1	The main body of the candlestick - fits between the candle holder and the lion feet. Traces of three pegs for foot attachment. Appears to be a hollow casting of copper alloy probably filled with lead. This is the most complete example.	176 x 14 diameter			PC	
223	Shot	Lead	1	Hollow lead sphere - several small holes. One end flattened. Composite dice shot	42 diameter		LCK	PC	
224	Shot	Lead	1	Part of a hollow sphere. One large hole. Inertia irregularly shaped. Composite dice shot?	41 diameter		LBJ	PC	
225	Object	Copper alloy	1	Part of a circular object - fabricated from sheet copper (seam visible).	45 x 9 x 6			PC	
226	Candle holder	Copper alloy	1	Part of a candlestick holder. Two part construction.	43 x 21 diameter			PC	
227	Candle holder	Copper alloy	1	Part of a candlestick holder. Base of socket only	10 x 18 diameter			PC	
228	Candle holder	Copper alloy	1	Part of candlestick support or leg in the shape of a sitting lion.	23 x 18 x 5			PC	
229	Candle holder	Copper alloy	1	Candlestick support or leg in the shape of a sitting lion. Part of a square sectioned hole for attachment to the candlestick base.	31 x 30 x 5			PC	
230	Mortar	Copper alloy	1	Copper alloy bowl or mortar - very heavy (thick bottomed). Has six bosses and an thick band around the outside - looks as if this was to support the vessel within a circular stand. The base has heavy pitting perhaps indicative of having been cast.	85 x 107 diameter			PC	
231	Candle holder	Copper alloy	1	Spike (for holding a candle?) - evidence of iron concretion at the point where it would join the candlestick base.	105 x 9 diameter		NF	PC	
232	Came	Lead	1	Lead strip with groove along one side. Probably a glazing strip (came).	80 x 9 x 4			PC	
233	Sheet	Lead	1	Small partly folded lead sheet - three square sectioned nail holes visible.	42 x 31 x 1.5			PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
234	Candle holder	Copper alloy	1	The main body of the candlestick - fits between the candle holder and the lion feet. Traces of one peg for foot attachment. Appears to be a hollow casting of copper alloy probably filled with lead.	126 x 11 diameter (top)		BAH	PC	
235	Candle holder	Copper alloy	1	The main body of the candlestick - fits between the candle holder and the lion feet. Traces of one peg for foot attachment. Appears to be a hollow casting of copper alloy filled with lead.	146 x 9 diameter		BAJ	PC	
236	Candle holder	Copper alloy	1	Part of a candlestick holder. Two part construction.	80 x 29 diameter		AAJ	PC	
237	Spoon	Pewter?	1	Spoon part (no handle) - probably pewter but could be silver. The spoon has ten very small (<1mm) holes where the handle was riveted on.	70 x 48 x 1			PC	
238	Candle holder	Copper alloy	1	The main body of the candlestick - fits between the candle holder and the lion feet. Traces of one peg for foot attachment. Appears to be a hollow casting of copper alloy filled with lead.	190 x 11 diameter (top)		BAD	PC	
239	Coin	Copper alloy	1	Plain disk of what appears to be copper alloy, worn and corroded. No visible legend.	1 x 27 diameter	July 1993		PC	
240	Came	Lead	1	Possible a glazing came - but no groove visible.	76 x 6 x 2.5	July 1993		PC	
241	Shot	Lead	2	Two solid spheres of lead, untrimmed (still have the pouring tail attached).	18 x 11 diameter	July 1993		PC	
242	Waste	Lead	3	Three small scraps of lead	15 x 25 x 2 (average)	July 1993		PC	
243	Shot	Lead	1	Solid sphere of lead.	11 diameter	July 1993		PC	
244	Shot	Lead	3	Three small solid lead spheres, worn and pitted.	10 diameter	July 1993		PC	
245	Nail	Copper alloy	1	Small square sectioned copper nail	34 x 3 x 3	July 1993		PC	
246	Object	Lead	1	Fragment of lead, one surface smooth and convex.	25 x 18 x 5	July 1993		PC	
247	Line sinker	Lead	1	Small conical square sectioned lead weight. Modern fishing weight?	34 x 8 x 8	July 1993		PC	
248	Coin	Copper alloy	1	Plain disk of what appears to be copper alloy, worn and corroded. No visible legend.	1 x 25 diameter			PC	
249	Coin	Copper alloy	1	Plain disk of what appears to be copper alloy, worn and corroded. No visible legend.	1 x 25 diameter			PC	
250	Coin	Copper alloy	1	Part disk of what appears to be copper alloy, worn and corroded. No visible legend.	1 x 19 x 26			PC	
251	Sheet	Lead	1	Strip of sheet lead with three square-sectioned nail holes. NB [LCW] is recorded as a fireball in AJR's original record.	48 x 67 x 1		LCW	PC	
252	Came	Lead	2	Two strips of lead. Possible glazing came. NB [LDA] is recorded as a fireball in AJR's original record.	70 x 6 x 3 and 53 x 3 x 2		LDA	PC	
253	Candle holder	Copper alloy	1	Candlestick holder. Has two holes possibly to allow the removal of the candle stub.	76 x 29 diameter		AAH	PC	
254	Sheet	Lead	1	Sheet lead - edges folded. No nail holes visible.	151 x 112 x 1.5			PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
255	Shot	Lead	1	Part of a hollow lead sphere - some evidence of iron concretion inside. Composite dice shot?	42 diameter			PC	
256	Ingot	Copper	1	Approximately hemispherical - but thinner than any of the other copper ingots. Possible lip on the rim where the metal was poured. No visible stamp impressions on the flat side.	35 x 150 diameter			PC	
257	Sheet	Lead	1	Sheet lead folded - no visible nail holes.	96 x 28 x 1			PC	
258	Sheet	Lead	1	Sheet lead folded - no visible nail holes.	40 x 21 x 1.5			PC	
259	Shot	Lead	1	Solid sphere of lead, untrimmed (still has the pouring tail attached).	10 diameter			PC	
260	Spike base?	Copper alloy	1	Small circular button-like object. Similar in appearance to the candle spikes.	11 x 25 diameter			PC	
261	Spike base?	Copper alloy	1	Small circular button-like object. Similar in appearance to the candle spikes.	13 x 25 diameter			PC	
262	Candle holder	Copper alloy	1	Part of the socket only from a candlestick support (lion shape)?	16 x 15 x 6			PC	
263	Candle holder	Copper alloy	1	Spike (for holding a candle?)	82 x 18 diameter			PC	
264	Candle holder	Copper alloy	1	Spike (for holding a candle?)	81 x 19 diameter			PC	
265	Candle holder	Copper alloy	1	Spike (for holding a candle?)	101 x 12 diameter			PC	
266	Candle holder	Copper alloy	1	Spike (for holding a candle) - surface shows several small pits.	64 x 13 diameter			PC	
267	Candle holder	Copper alloy	1	Candlestick holder.	87 x 31 diameter			PC	
268	Candle holder	Copper alloy	1	Candlestick holder. Has two holes (14 diameter) possibly to allow the removal of the candle stub. Some concretion internally - including pebbles and sand.	81 x 32 diameter			PC	
269	Candle holder	Copper alloy	1	Candlestick holder. Has a worn hole (20 diameter) possibly to allow the removal of the candle stub. Probably originally had two holes - one is filled with concretion?	81 x 29 diameter			PC	
270	Candle holder	Copper alloy	1	Candlestick holder. Has a worn hole (20 diameter) possibly to allow the removal of the candle stub. Originally had two holes - one is filled with pebble and concretion?	80 x 31 diameter			PC	
271	Ingot	Copper	1	Approximately hemi-spherical. One possible very worn semi-circular stamp impression on the flat side.	61 x 180 diameter			PC	
272	Candle holder	Copper alloy	1	Spike (for holding a candle?)	82 x 21 diameter			PC	
273	Candle holder	Copper alloy	1	Spike (for holding a candle?)	76 x 4 diameter			PC	
274	Candle holder	Copper alloy	1	Round sectioned spike with square peg surrounded by concretion at the blunt end.	119 x 23 diameter			PC	
275	Candle holder	Copper alloy	1	Spike (for holding a candle?)	112 x 25 diameter			PC	
276	Candle holder	Copper alloy	1	The main body of the candlestick - fits between the candle holder and the lion feet. Appears to be a hollow casting of copper alloy filled with lead.	126 x 71		BAG	PC	

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
277	Candle holder	Copper alloy	1	The main body of the candlestick - fits between the candle holder and the lion feet. Appears to be a hollow casting of copper alloy filled with lead.	300 x 91			PC	
278	Ingot	Copper	1	Approximately hemi-spherical. On display in the British Museum - photo taken in display case. I was not able to handle the object - dimensions and weight taken from BM Merlin database.	180 diameter		1985.07 04.2	BM	
279	Ingot	Copper	1	In the British Museum reserve collection. Approximately hemi-spherical. Object not seen	205 diameter		1985.07 04.3	BM	Details were taken from the BM Merlin database.
280	Ingot	Copper	1	In the British Museum reserve collection. Approximately hemi-spherical. Object not seen	130 diameter		1985.07 04.4	BM	Details were taken from the BM Merlin database.
281	Ingot	Copper	1	In the British Museum reserve collection. Approximately hemi-spherical. Object not seen	160 diameter		1985.07 04.5	BM	Details were taken from the BM Merlin database.
282	Ingot	Copper	1	In the British Museum reserve collection. Approximately hemi-spherical. Object not seen	165 diameter		1985.07 04.6	BM	Details were taken from the BM Merlin database.
283	Ingot	Copper	20	Approximately 20 copper ingots. Originally in the possession of Mike Hall of Ruan Minor - but loaned to Kevin Heath some years ago for an exhibition at St Keverne and now lost. Object not seen		1981?		Unknown	Now lost
284	Shot	Lead	?	An unspecified number of hollow lead shot in the possession of Mike Hall of Ruan Minor. Mr Hall still has these objects but is unable to locate them. Objects not seen.		1981?		MH	
285	Ingot	Copper	1	One hemispherical copper ingot - in the possession of Richard Larn of St Mary's IoS. Object not seen		1981?		RL	
286	Ingot	Copper	1	One hemispherical copper ingot - Currently in the collection of the Longstone Heritage Centre St Mary's IoS (which was once owned by Richard Larn). Object not seen		1981?		LHC	
287	Ingot	Copper	1	Hemispherical ingot. Has been polished on the flat face.	150 diameter x 65	1981?	0088	CSM	Record # 30 in the Charlestown Shipwreck Museum database
288	Ingot	Copper	1	Hemispherical ingot. Has a central circular (22 diameter) worn impression - which may be the remains of a stamp..	150 diameter x 52			CSM	Record # 31 in the Charlestown Shipwreck Museum database
289	Ingot	Copper	1	Hemispherical ingot	165 diameter x 70	1981?	0080	CSM	Record # 32 in the Charlestown Shipwreck Museum database

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
290	Ingot	Copper	1	Hemispherical ingot	166 diameter x 75	1981?	0081	CSM	Record # 33 in the Charlestown Shipwreck Museum database
291	Ingot	Copper	1	Hemispherical ingot	180 diameter x 80	1981?		CSM	Record # 34 in the Charlestown Shipwreck Museum database
292	Ingot	Copper	1	Hemispherical ingot	185 diameter x 75	1981?	0083	CSM	Record # 35 in the Charlestown Shipwreck Museum database
293	Candle holder	Copper alloy	1	Candlestick foot in the shape of a sitting lion. Originally attached to the candlestick base with a square sectioned peg (7x7) which has broken off.	42 x 45			CSM	Record #3 in the Charlestown Shipwreck Museum database
294	Candle holder	Copper alloy	1	Circular candlestick socket. Two small holes (6 diameter) presumably for the removal of the candle stub from the socket	75 x 32			CSM	Record # 2 in the Charlestown Shipwreck Museum database
295	Object	Copper alloy	1	Part of an unidentified object. Circular in section. Finial. Has been polished.	50 x 15 diameter			CSM	Record # 4 in the Charlestown Shipwreck Museum database
296	Handle	Copper alloy	1	Part of a handle with a circular hole. Has been cleaned	95 x 18 x 3			CSM	Record # 1 in the Charlestown Shipwreck Museum database
297	Ingot	Copper	1	Hemispherical ingot. Remains of a circular stamp (3 x 25 diameter)	66 x 164 diameter	1981?		CSM	Record # 351 in the Charlestown Shipwreck Museum database
298	Ingot	Copper	1	Hemispherical ingot. Remains of a circular stamp (22 diameter)	173 diameter x 51		AT	CSM	Record # 355 in the Charlestown Shipwreck Museum database
299	Shot	Lead	1	Part of a hollow lead sphere. Approx one-third is missing. The interior void is partly filled with concretion and appears to be cube shaped.	c. 40 diameter	1981?		CSM	Record # 417 in the Charlestown Shipwreck Museum database
300	Shot	Lead	1	Hollow lead sphere which has had one quadrant sawn off for display purposes. Casting seam visible. The interior is roughly cube shaped. The thickness of the lead is (4 to 15)	63 diameter	1981?	0579	CSM	Record # 414 in the Charlestown Shipwreck Museum database

ID No	O Name	Material	Nos	Description	Dimensions (mm)	Fdate	Marked	Current Location	Notes
301	Cloth seal	Lead (alloy?)	1	Thin disk with design and lettering on one face. Design appears to be a shield with a sword and four stars. Other face plain apart from remains of possible attachment - soldered on?	40 diameter x 0.5			PC	
302	Net sinker	Lead	1	Boat shaped weight with two square sectioned holes (5 x 5).	86 x 26 x 20	Aug 1981	LCU	PC	
303	Line sinker	Lead	1	Conical weight small hole near the top of the cone	87 x 55 diameter	Sept 1981	LAC	PC	
304	Net sinker	Lead	1	Boat shaped weight. Two round-sectioned holes (4)	64 x 26 x 20	Sept 1981	LAB	PC	
305	Weight	Lead	1	Lead object with four round-sectioned holes. Fishing weight?	170 x 70 x 56			PC	

Richard Larn also has a composite lead dice shot of 45mm diameter from the site (R. Larn personal correspondence July 2013).

## Archaeological Evidence

The site lies some 30 to 180m offshore from the sand and shingle beach at Gunwalloe Fishing Cove on the west coast of the Lizard peninsula. The seabed in the region of the site consists of rock gulleys and reefs, covered or partly covered by varying depths of sand and shingle. The site is generally in about 7m of water. The description of the site in the original application for designation is 'sand and shingle, with about 30% rock outcrops, depth, minimum 5m, maximum 8m... A broken, scattered, shallow water wreck site with no hull structure showing. Artefacts found part buried in sand were partially eroded'.

The seabed on this site is subject to varying depths of sand and shingle cover. Large amounts of sediment move on and off the site periodically, and the site often stays buried for years at a time. All work on the site is dependent on the amount of sand cover on the site. This makes survey in particular very difficult to plan. This is a phenomenon not unique to the *St Anthony* site; the nearby protected wreck sites of the *Schiedam*, Rill Cove and Loe Bar are also subject to these fluctuating sand levels. However, aggregate extraction from the beach adjacent to the *St Anthony* site may well have affected the sediment levels on the site. 'For many years the southern extremity of the stretch of sands which includes Loe Bar has been used as the source of material for a small building-block manufacturer. Although run on family lines, the quantities of pebble/sand extracted is enormous and has led to a gradual redistribution of material over a wide area... This is the probable cause of the exposure of the site of the *St Anthony* which may have been well protected for centuries until this loss of cover material began to take effect' (*St Anthony* site project objectives – 1988). Although this extraction of aggregates from the beach ceased some years ago, reference to the most recent licensee reports shows that sediment cover over the site still varies periodically.

The identification of the site as the wreck of the *St Anthony* is based on the historic record and the nature and date of the finds recovered from the site; no remains of the fabric of the ship have ever been located. The wreck of the *St Anthony* in 1527 at Gunwalloe is well attested by documentary sources. These sources, which are the result of litigation, detail the events of her loss and a comprehensive list of the cargo of the *St Anthony*. Many of the artefacts recovered from the site can be linked to items detailed on this cargo list. The cargo list includes 18 silver ingots, and a silver ingot (now in the British Museum) was recovered from the site in 1981. The list also contains 8000 copper ingots; at least 46 copper ingots are known to have been recovered from the site since 1977. Finally, the cargo list mentions 3200 latten candlesticks (latten is a term used in the Middle Ages for copper alloys such as brass), and 92 fragments of copper alloy candlesticks have been recorded from the site. This correspondence between artefacts recovered and the documented cargo of the *St Anthony* is fairly convincing.

We know from the licensee reports that excavation took place in 1982, 1985 and 1993. We also know that artefacts recovered from the site were declared to the Receiver of Wreck in 1977 and 1981 (prior to the designation of the site) so we can be fairly sure that items were recovered in those years, possibly as a result of excavation. In addition to these there are six objects recorded on the finds list as recovered in September 1983. In total, 285 artefacts are recorded on the finds list, many of which do not have the date they were found recorded. Very few of these objects have any record of where they were recovered from. An exception to this is the objects recovered in the excavations undertaken in 1985, where a plan (1985\_1) exists showing the location of the trenches

and the position the finds came from. One possible explanation is that many of the objects were recovered from mobile sediments and it was not thought to be relevant to record the find spot – as perhaps evidenced by the following correspondence: ‘diving from the beach I recovered many items, usually following winter storm disturbance. Artefact location mapping was impossible, unnecessary anyway, as items were usually found in locations empty of finds the year before or earlier’ (Anthony Randall, personal correspondence July 2013). No record has been found for the location of the 1982 and 1993 excavations.

The sediment on the site is reported in the 1985 licensee’s report. The ‘westernmost’ gully on the site was excavated using a water driven reaction dredge. The sediment encountered in this gully was sand and gravel and varied in depth between 0.2 and 0.5m. This was said to be ‘much less than in other years’. It seems probable that many of the artefacts recovered from this site were found at or near the surface, and were often located using an underwater metal detector. For example the initial ‘metal detector search’ reported in the application for designation by Richard Larn resulted in the recovery of ‘about 50 ingots, lead fragments, candlestick parts and bits of glass’.

The only site plan which covers the whole site is that produced in 1984, which only shows topographic features (sand, gulleys and reefs). It does not show any archaeological features, excavations or finds positions. A sketch plan made in 1983 shows the approximate position of ‘Cob 8 real piece, broken anchor, cannon, silver melon ingot, 45lb sounding lead and candlestick pieces’ (1983\_1). The 1985 excavated areas are shown on plan (1985\_1) along with the locations of the artefacts recovered in that year. In consequence we do not know where the majority of the recovered artefacts came from.

Most of the finds recovered from this are on public display and have been adequately recorded. The majority of the finds recovered from the *St Anthony* are on long term loan to Pengersick Castle, where they are usually on public display. A total of 231 artefacts were recorded and photographed at Pengersick Castle in 2004, 26 objects were recorded at Charlestown Shipwreck Museum in 2006. Six ingots from the site are owned by the British Museum. The table below lists the known locations of all the artefacts in 2007.

Location of the <i>St Anthony</i> artefacts	
Location	Number of Objects
British Museum	6
Charlestown Shipwreck Museum	26
Longstone Heritage Centre	1
Pengersick Castle	231
Richard Larn	2
Lost	Approximately 20
<b>TOTAL</b>	<b>286</b>

The c.20 objects listed as lost were copper ingots held by Mike Hall, which were loaned to Kevin Heath for an exhibition at St Kernerne and were lost some time after the exhibition ended.

The finds list of artefacts recovered from the *St Anthony* was produced as part of the *St Anthony* Finds Record, commissioned by English Heritage in 2007; this list contains 285 objects and is

reproduced above. An earlier finds list exists (and is reproduced on the DVD), but this only contains artefacts recovered between August 1981 and September 1982; 179 objects. Many items are not recorded on this list. For example, there are no copper ingots recorded.

As no remains of the vessel itself were located it is worth focusing briefly on the artefacts recovered. The most numerous items on the finds list are the copper alloy candlestick parts, 92 of which are recorded. No complete candlesticks were found and many of the items are badly eroded. These are probably part of the '3200 latten candlesticks' listed in the *St Anthony* manifest. One of the candlestick sockets from the site was analysed by Duncan Hook of the British Museum in 1986. He found that : 'The candlestick socket from the *St Anthony* is a leaded copper-zinc-tin alloy, typical of the alloys used to produce Flemish candlesticks of that period'. The full text of this analysis is contained on the DVD which accompanies this report.

The next most numerous objects recovered were composite lead/iron dice shot, of which 57 are recorded in the finds list. These consist of lead spheres containing cube-shaped voids with iron corrosion products evident. They vary in size between 27 and 66mm diameter, with the majority being 41 to 43mm in diameter. Similar shot were found on the wreck of the *Mary Rose* (sank 1545). 206 inset dice shot were recorded on the *Mary Rose*, where they also found three sandstone moulds, which could have been used on board to produce this type of shot (Hildred, 2011, p.350). The *Mary Rose* inset dice shot varied in size between 26 and 67.5mm diameter, a size range which accords well with those found on the *St Anthony* site.

The other object type found in significant quantities on the site is the copper ingot, of which 46 are recorded in the finds list. Sadly, about 20 of these are now lost. However 26 remain, five in the British Museum, thirteen in the Charlestown Shipwreck Museum, one in the possession of Richard Larn and the rest at Pengersick Castle. The copper ingots have been the subject of a number of articles in IJNA, mainly concentrating on their metallurgical composition (Tylecote, 1980), (Craddock & Hook, 1987) and (Craddock & Hook, 1995) . The following is from a letter by Duncan Hook of the British Museum in 1986 (full text reproduced on the DVD):

'The ingots from the *St Anthony* consist of fairly pure copper, with low amounts of lead, and trace levels of silver, zinc, iron, nickel, arsenic and antimony. The ingots show a good degree of consistency in their composition. The candlestick socket from the *St Anthony* is a leaded copper-zinc-tin alloy, typical of the alloys used to produce Flemish candlesticks of that period. It has higher levels of silver, nickel, antimony and arsenic than the ingots, and is therefore likely to have been made from copper from a different source'.

The following table lists the object types recovered from the *St Anthony* – based on the finds list produced for the *St Anthony* Finds Record (Camidge, 2007).

<i>St Anthony</i> artefact types	
Type	Number
Anode	1
Copper bolt	3
Copper coin	4
Copper handle	2
Copper ingot	46
Silver ingot	1
Copper alloy mortar	1
Copper alloy pestle	1
Copper alloy candlestick part	92
Copper alloy candle spike	2
Copper alloy inkwell	1
Copper alloy sheave bearing	1
Copper alloy sheet	1
Copper alloy nail	2
Lead came	5
Lead cloth seal	1
Lead net sinker (modern?)	2
Lead fishing weight (modern?)	3
Lead musket shot	32
Lead dice shot	57
Lead sheet	11
Lead waste	3
Sounding lead	4
Pewter spoon	1
Unidentified object	8
<b>TOTAL</b>	<b>285</b>

In recent years the licensee David Roberts (Visitor's licence since 2007) has undertaken a great deal of diving on the site. In consequence he has found a number of items on the site including an iron gun, part of another possible gun and no fewer than five anchors. Mr Roberts has supplied a Google Earth 'map' of the site with these finds marked on it (2013\_1). The iron gun in particular looks to be contemporary with the wreck of the *St Anthony* and is probably the gun mentioned in the 1981 application for designation: 'no artefacts were showing and the single iron cannon known to be on site, and seen perhaps twice over the last few years remains buried'.

The 1984 licensee report mentions the painted panels, originally part of the rood screen in the church of St Winwaloe at Gunwalloe. 'The Pilgrim Trust have subsequently paid to have the Rood Screen panels in the church restored and repainted, and their findings support the church records that suggest they come from the actual wreck (of the *St Anthony*) in 1527'. The National Heritage List for England record for the church (1157975) has the following to say on the panels: '2 oak inner doors each incorporating 4 painted panels of the eight apostles and Perpendicular tracery over, reused from the rood screen and reputed to be made from the wreckage wood of The *St Anthony* of

Lisbon (or Padua) wrecked at Gunwalloe on 19th Jan. 1527 en route from Flanders to Portugal. (church guide)'.

(<http://list.english-heritage.org.uk/resultsingle.aspx?uid=1157975>, July 2013).

Finally, the Cornwall Historic Churches Trust states that there is no evidence that these panels came from the *St Anthony*: 'A rood screen, bearing an image of the crucifixion, once divided the church in two with the chancel and north and south chapels lying to the east. Two complete bays of this screen which once depicted the twelve apostles were recycled as north and south doors to the church. The style of the eight surviving apostles painted at the base is entirely consistent with Cornish screen painting at Budock, Lanreath and Mawnan with moustache-less beards being shown in all cases. There is no evidence at all that these panels came from the wreck of *The St Anthony*, the King of Portugal's treasure ship, though wreck money could have helped pay for them as the ship was wrecked at Gunwalloe on 19<sup>th</sup> January 1527' (<http://www.chct.info/church-histories/church-histories-index/131-gunwalloe-st-winwaloe.html>, July 2013).

## Assessment of Importance

### Period

The identification of this site as the wreck of the *St Anthony* is fairly secure. The *St Anthony* sank at Gunwalloe at around 8am on 19<sup>th</sup> January 1527.

### Rarity

The *St Anthony* is one of only six protected wreck sites of this date in England. The others are Bartholomew Ledge (16<sup>th</sup> C), Cattewater (Early 16<sup>th</sup> C), Gull Rock (15-16<sup>th</sup> C), *Mary Rose* (1545) and Studland Bay (c.1520). Only the *St Anthony* and the *Mary Rose* are sites where the identity of the vessel is known.

The large collections of candlesticks and copper ingots from the *St Anthony* are also rare from a dated, known vessel.

### Documentation

The loss of the *St Anthony* and details of her cargo are well attested due to litigation over the cargo recovered when the vessel was wrecked. A very thorough analysis of the documentation is presented in 'The Wreck of the *St Anthony*', published in 1968 (Chynoweth, 1968).

Archaeological documentation relating to the excavation and survey of the wreck site has also been located, mainly in the licensee reports submitted to the Advisory Committee on Historic Wreck Sites (ACHWS). These reports are held at the English Heritage Registry at Swindon. Copies of these reports are summarised above and appear in full on the DVD which accompanies this report.

### Survival/Condition

As noted above, nothing of the fabric of the vessel has been found to date. We have a collection of artefacts recovered from the wreck site, amounting to 285 objects on the finds list. The majority of objects recovered from the site are on display at Pengersick Castle, Cornwall. Objects from the site are also on display at the Charlestown Shipwreck Museum and at the British Museum.

### Vulnerability

The site lies in very shallow water close to the shore. As a result the site is vulnerable to storm damage, especially when there is little or no sand cover over the site. The worn condition of most of the recovered artefacts suggests that sediment movement on the site results in abrasion of the artefacts.

### Diversity

The cargo of the *St Anthony* is unusual for a vessel of this date in having a surviving manifest. The large number of candlesticks and copper ingots recovered to date are also of note.

### Potential

The archaeological potential of the *St Anthony* site lies in the range of artefacts recovered. Further artefacts are likely to be exposed in the future.

## Assessment of Impacts

### Previous Disturbance

Contemporary salvage from the wreck of the *St Anthony* is well attested in the surviving documentary evidence. In addition we know that excavation on the site was undertaken between 1982 and 1993. A licence to excavate on the site was issued for at least twelve separate years.

The most significant source of disturbance on the site is, however, likely to be the winter storms which will have a significant effect on the site, especially when sand cover over the site is low.

### Site Environment

The site lies some 30 to 180m offshore from the sand and shingle beach at Gunwalloe Fishing Cove. The seabed in the region of the site consists of rock gulleys and reefs, covered or partly covered by varying depths of sand and shingle. The site is generally in about 7m of water. The description of the site in the original application for designation is 'sand and shingle, with about 30% rock outcrops, depth, minimum 5m, maximum 8m'.

The most striking environmental factor affecting this site is the varying sand levels over the area of the site. Large amounts of sand move on and off the site periodically, and the site often stays buried for years at a time. However, when the site is not covered in sand it is very vulnerable to storm damage due to its shallow depth.

### Future Threats

The most obvious future threat to the site is storm damage on the occasions when the site is not covered with a substantial layer of sand. Storms are likely to have the effect of destabilising the site by breaking up concretions on the site and releasing artefacts, which will then become mobile.

The threat from unauthorised diving on the site is very hard to quantify, but to date there have not been any reports of unauthorised diving on the site.

## Discussion

The majority of archaeological work on this site was undertaken between 1977 and 1995 by the original licensee of the site, Richard Larn, and Anthony Randall who took over as licensee in 1987. Mr Randall has not held a licence for this site since 2001. No excavation has taken place on the site since 1993, and no excavation licence for this site has been issued since 2001. With the exception of the finds recovered in 1985, there is no record of where on the site any of the artefacts were found. We only know the position of the 1985 excavation trenches. It seems unlikely that any report of the excavations on this site will ever be published.

The site plans listed in this DBA are reproduced on the accompanying DVD.

## Recommendations

The guns and anchors recently found by the current licensee David Roberts should be recorded and an accurate GPS position for each taken. At the moment Mr Roberts only has a visitor licence for the site, and he would presumably need a survey licence to undertake this work.

The granting of a surface recovery licence to Mr Roberts should be considered. This would allow the retrieval of any artefacts found by him on the surface. The position of these would need to be accurately recorded. Hopefully these could join the other objects on display at Pengersick Castle once they had been conserved (as could the objects recovered by Wessex Archaeology in 2007). This would allow a plot of where on the site the artefacts are being found; this is important as we do not know where most of the artefacts recovered to date came from.

To facilitate the two activities recommended above, a number of permanent control points need to be installed on the site. These need to be robust enough to withstand winter storms and placed on the rocky high points to ensure that they are visible when the site is covered by sand and shingle. The best method is probably to cement 12mm stainless steel reinforcing rods into crevices in the rock. The rods can be cemented in place using a mixture of cement, ballast and PVA (as successfully used on the *Firebrand* survey) or using polyvinyl resin such as Chemset. The control points will then need to be measured relative to each other and their absolute position fixed using GPS.

The objects recovered to date include some large groups of relatively uncommon artefacts - for example the copper alloy candlesticks, the copper ingots and the composite lead/iron dice shot. It would be useful to have these groups looked at by an expert in archaeological finds of this period to assess whether further work on these artefacts would be worthwhile. This initial appraisal could be undertaken using the *St Anthony* Finds Record (2007) which includes photographs, descriptions and measurements of all the objects.

The original two site licensees should be encouraged to produce a short report detailing the excavations undertaken by them on the site.

## Contents of the DVD

### Contractor Visits

ADU

WA

### Designation

1982

2006

### Finds List

1984

2007

### Hydrographic Department

#### IJNA

1980

1987

1995

### Ingots

1977

1986

### JRIC 1968

### Licence Applications

1981

1985

### Licensees Reports

1981 -> 1982

1984 -> 1990

1993 -> 1998

2000 -> 2001

2004

2007 -> 2012

Project Objectives 1988

Survey Notes 1983

### Photographs

1981

1985

2004

2008 -> 2012

Press

*Telegraph* 1981

*Diver* 1982

*Diver* 1983

Receiver of Wreck

1977

1981

1982

Valuation 1983

Site Plans

1981

1983

1984

1985

2004

2013

*St Anthony* Finds Record Project (2007)

Finds Photographs

Finds List

Project Report

Star Chamber Proceedings (19/293)

## Bibliography

- Camidge, K., 2006. *Charlestown Shipwreck and Heritage Centre Project Report*. Unpublished report for English Heritage (EH4823).
- Camidge, K., 2007. *St Anthony Finds Record*. Unpublished report for English Heritage (EH3944). Darkwright Archaeology.
- Carter, C. & Larn, R., 1969. *Cornish Shipwrecks - the South Coast*. David & Charles.
- Chynoweth, J., 1968. The Wreck of the St Anthony. *Journal of the Royal Institute of Cornwall*, 5, pp.385-406.
- Craddock, P. & Hook, D., 1987. Ingots from the sea: The British Museum collection of ingots. *IJNA*, 16(3), pp.201-06.
- Craddock, P. & Hook, D., 1995. Ingots from the sea: a coming of age. *IJNA*, 24(1), pp.67-70.
- Hildred, A., 2011. *Weapons of Warre: The Armaments of the Mary Rose*. Portsmouth: The Mary Rose Trust.
- Larn, R. & Larn, B., 1995. *Shipwreck Index of the British Isles Volume 1*. London: Lloyd's Register of Shipping.
- Larn, B. & Larn, R., 2009. *Cornwall's Shipwrecks - the South Coast*. Tor Mark Press.
- Page, W., 1906. *The Victoria History of the County of Cornwall Volume 1*. London.
- Tylecote, R., 1980. Copper Ingots and Marine Copper. *IJNA*, 9(1), pp.67-68.
- Wessex\_Archaeology, 2005. *St Anthony Designated Site Assessment*. Unpublished report for English Heritage ref:53111.03dd.
- Wessex\_Archaeology, 2007. *St Anthony Designated Site Assessment*. Unpublished report for English Heritage Ref: 53111.03ww.