



South West Maritime Archaeological Group  
*'History from the Sea'*



**Salcombe/Moor Sand Sites  
2015 End of Season Report**

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## South West Maritime Archaeological Group

*'History from the Sea'*

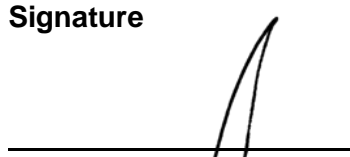
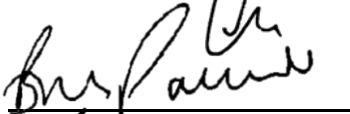
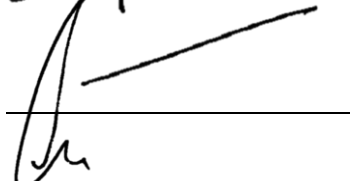
### Salcombe/Moor Sand Sites 2015 End of Season Report

#### Licenses:

Site	Type	Date of Issue
Moor Sand	Survey	01 December 2014
Salcombe Cannon Site	Surface Recovery	01 December 2014

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Prepared by Jim Tyson & Mick Palmer

Approved by	Position	Signature	Date
Mr. D. Parham	Licensee Moor Sand		<u>30 November 2015</u>
Mr. B. M. Palmer	Licensee Salcombe Cannon Site		<u>30 November 2015</u>
Mr. D. Parham	Nominated Archaeologist		<u>30 November 2015</u>

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## Glossary / Abbreviations

BM	British Museum
CIA	Council for Independent Archaeologists
EH	English Heritage
RoW	Receiver of Wreck
SNR	Society for Nautical Research
SWMAG	South West Maritime Archaeological Group
Wessex	Wessex ADU

### Front cover:

© Ferriby Boat Trust - Bronze Age boat

### Images:

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## 1 Introduction

This document is the joint end of season report for the Salcombe/Moor Sand Sites; it details the activities and achievements of the South West Maritime Archaeological Group (SWMAG) for the 2015 season, both on and off site, in respect of the Survey License issued on 1st December 2014 until 30<sup>th</sup> November 2015 for the Moor Sand site, and the Surface Recovery License issued on 1st December 2014 until 30<sup>th</sup> November 2015 for the Salcombe Cannon Site.

All co-ordinates in the document are given as dd° mm.mmm' WGS84 unless otherwise stated.

This document will be available online at <http://swmag.org.uk/sites/scs/reports/2015eos.pdf>.

### 1.1 Moor Sand

Originally discovered in 1977 when a Bronze Age sword and eroded blade were found just off Moor Sand beach, the site was protected in 1978 by Protection of Wrecks Order 1978 - Statutory Instrument 1978 No. 199. The Statutory Instrument defines an exclusion zone centred at position Latitude 50° 12.700' North, Longitude 03° 44.333' West (OSGB36), extending for a distance of 300m from that point.

Moor Sand was surveyed and searched by the late Keith Muckelroy in 1977, 1978 and 1979 using visual and metal detector search techniques, and again in 1982 by Martin Dean. These surveys recovered a number of Bronze Age artefacts which are now at the British Museum.

In the intervening period the site has been monitored and surveyed but no further artefacts were located until SWMAG started investigating the area in 2009 as part of extending the area from the Bronze Age finds to the south east of the 17th Century site.

Field work is continuous

Licensee note;

The site license was transferred from Neville Oldham to David Parham during the 2015 season due to ill health.

### 1.2 The Salcombe Cannon Site

First investigated by SWMAG in 1995, the Salcombe Cannon Site was protected in 1997 by Protection of Wrecks (Designation No. 4) Order 1997 - Statutory Instrument 1997 No. 2536. The Statutory Instrument defines an exclusion zone centred at Latitude 50° 12.696' North, Longitude 03° 44.679' West (OSGB36), extending for a distance of 250m from that point.

Activity in 2001 expanded the site to the south-east with the recovery of Bronze Age artefacts. That the site is Bronze Age in origin was confirmed during 2004.

Continuing work in subsequent years has followed the archaeology towards Moor Sand and, as proposed as a possibility in the end of season report in 2010, the distribution of artefacts confirms that the archaeology encompasses both sites.

Further survey work has continued following a possible debris trail to Gammon Head and back to Rickham Cove. This sea bound line encompasses the terrestrial land where Bronze Age field systems and 3 Round Houses were located.



### 1.3 Joint Project - Salcombe/Moor Sand

The licensees of the Salcombe Cannon and Moor Sand Sites have again agreed that the archaeology takes precedence over site boundaries and the sites are now being investigated as a single project; hence this document being a joint report. Mr. D. Parham is the nominated archaeologist for both sites and co-ordinates the project.

Figure 1 shows the areas designated under Statutory Instruments 1978 No. 199 and 1997 No. 2536 overlaid on an extract from Admiralty Chart 1613, together with a multi-beam sonar plot of the seabed.

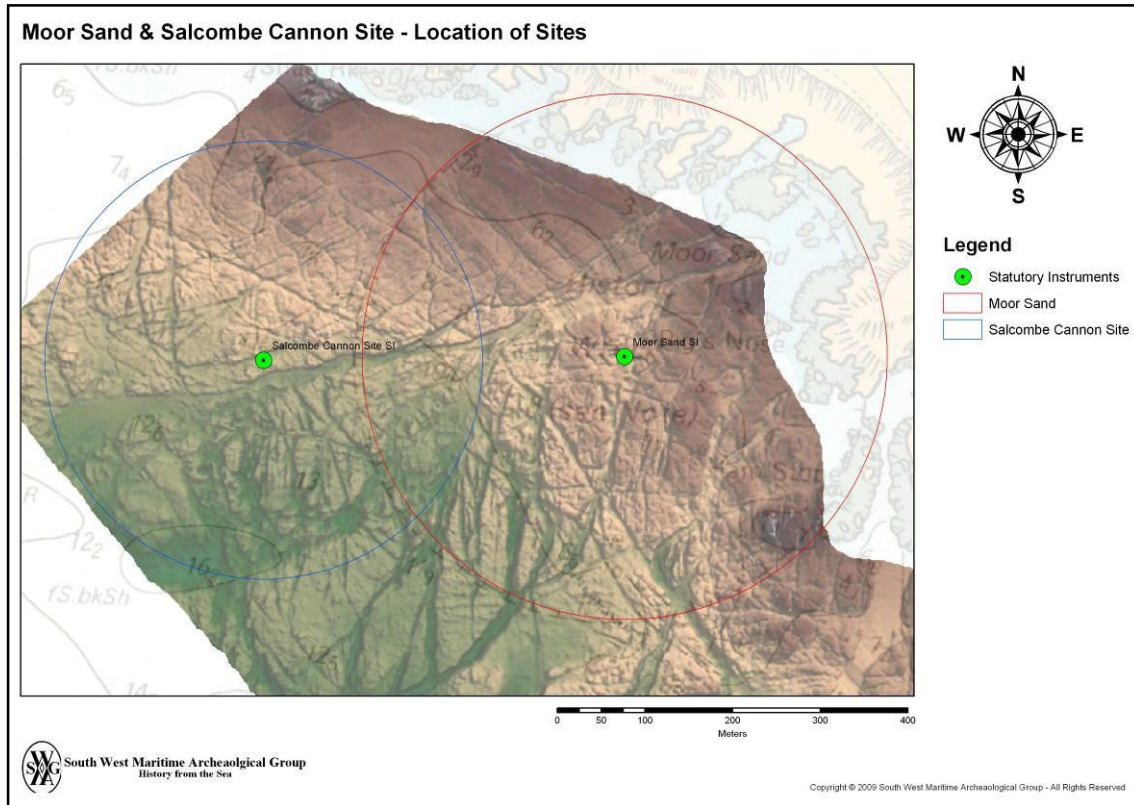


Figure 1 - Location of the Moor Sand & Salcombe Cannon Sites



## 2 Summary

### 2.1 Qualified Dive Hours and Research Time

Type	Hours
Divers Underwater	48
Dry Research (est.)	360
Magnetometer survey	4

### 2.2 2015 Season Highlights

- On site
  - Continued excellent support from Prawle Point National Coastwatch, Falmouth Coastguard and Devon & Cornwall Constabulary.
  - We are developing our relationship with Falmouth Coastguard now that Brixham Coastguard has closed.
  - Magnetometer survey around Salcombe/Moor Sand site area, from Rickham Cove to Prawle Point. Continuous process.
  - Re-assessment of Cannon Site with re-viewed information throughout season
  - Examination of Bronze Age sites to ensure integrity of site and make datum lines secure.
  - Examination of all past reports and records for both Bronze Ages sites and 17th Century sites to analyse and draw conclusions of patterns of wreckage and finds for future planning.
- Off site
  - Continued Display of Artefacts from the Salcombe B / Moor Sand site in the 'Citi Money Gallery (Room 68)', British Museum (see Section 6.2.1 for details)
  - New exhibition which includes Artefacts from the Salcombe B / Moor Sand site in 'Hoards: the hidden history of ancient Britain' British Museum Room 69a (see Section 6.2.2 for details)
  - Artefacts from the Salcombe B / Moor Sand site continue to be displayed in the 'Uncovered Gallery', Plymouth City Museum & Art Gallery. (see Section 6.2.2 for details)
  - Work is progressing in association with support from Alan Aberg, Society for Nautical Research (SNR) and the British Museum for a SWMAG publication on the 17<sup>th</sup> Century Cannon Site, projected date for editing has been delayed due to slow submission of papers.
  - Team members have continued making presentations on the teams projects in the South West regions (see Section 7 for details).
  - Recognition Internationally, UK, and locally, with enquiries being made through our web pages for information and use of photographs
  - SWMAG is liaising with the British Museum in comparing Tin Ingots recovered from the Erme Estuary protected wreck site with those from Moor Sand Bronze Age 'A' site. The results of this are to be published by the British Museum (Ben Roberts, et al), date to be advised. This publication is currently undergoing the referee process and should be published in approx. three months.
  - Acceptance of 'The Keith Muckleroy Memorial Award' by team members at the 2015 NAS/PMAS Conference on behalf of the authors who were unable to attend (see Section 7.3 for details)



## 2.3 2015 Season Lowlights

- On site
  - Very poor consistent weather conditions have led to the cancellation of 7 weekend field trips to site as boats could not be safely launched and divers safely recovered. This equates to some 140 hours lost underwater dive time
  - Wind conditions on site were invariably Force 4 to 5 for some or part of the available weekends, putting field work beyond reach.
- Off site
  - Very few weekends that were good or reasonable for diving were missed.

## 3 Fieldwork Activity

### 3.1 Introduction

2015 seasons Field Work plan was to re-visit and resume survey and identification for the Cannon Site.

Field work in the areas of Bronze Age 'A' (Moor Sand) and Bronze Age 'B' (located in the Cannon site area) was to be limited to inspection and security checks with a view to then returning for the 2016 season.

### 3.2 On-site Work

#### 3.2.1 Site Action Plan

In March 2015 SWMAG issued their Site Action Plan for the year. Those actions outlined in the plan and their status are summarised below.

Objective	Activities	Status	Notes
Re-establish site for 17th Century Cannon site.  Review previous sea bed surveys and accuracy.  Examine any find areas	Renew mooring	Completed	Temporary anchor mooring only used
	Security checks and re-establish and straighten all datum lines.	Completed	Centre of site targeted  No permanent mooring used. GPS fix for site only. MMO regulations not appropriate. As per MMO regulations mooring will be removed every 28 days. New mooring placed elsewhere
	Recover Surface artefacts as seen and measured in position.	Not completed No recoveries	
Re-establish site for 1350BC Bronze Age site	Refresh known information for 2016	Ongoing in 2016	All areas
	Straighten lines Identify new and old positions	Ongoing in 2016	Assess work necessary for 2016 season. Check site for security.
	Refresh known information for 2016	On going	All areas



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Salcombe Bronze Age A (Moor Sand)  Check previous lines and positions	Security checks only	Ongoing in 2016	
	View to re-visit all areas 2016	Not possible due to adverse weather conditions.	
17th Century Cannon Site	Field work centred on main axis area where gullies and lines meet.	Limited work only.	Continue work from Arc View generated sea bed maps
Seabed mobility survey	Identify key datum	Not Started	Objective is to continue to identify seabed movement and determine any potential areas of instability.  Adverse weather conditions throughout 2015 season
	Datum to seabed measurement	Not started	
Search	Area to the North West	Not started	
	Direct line search to Moor Sand	Not Started	
Survey	Define areas to be surveyed	Open	
Accurately geo-reference the site	Fix real world locations for pre-determined datum and report to SWMAG	Open Not started	Endeavour to identify extent of site

**Additional Notes:**

The 2016 site field work plan is to concentrate on the 1350BC Bronze Age site and identify the extent of this area, also to re-examine the areas of previous artefact recoveries. . Apart from previous years recoveries which were from E gully no further investigative work had been completed. Consideration has been given that there may be overlapping issues into this area from the 17th Century site. 2016 should provide that completion.

As previous surveys and searches concentrated on gully valley areas 2016 will endeavour to link reef plateau areas that are between the gullies. These are difficult areas to survey and search as they lie in the tidal run. These areas are quite extensive

SWMAG will use the underwater Survey Plans produced by the ADU and Wessex to plan out the search areas. Our priority here is also in conjunction with archaeologist and the British Museum.



### 3.2.2 Artefact finds 2015

No artefacts were recovered during the 2015 season, however we should consider that this year is the 20<sup>th</sup> anniversary of working on the Salcombe / Moor Sand sites and the team have raised some 936 artefacts which are all now at the British Museum.

### 3.2.3 Operational Field Work

Survey and sea bed recovery on the 17th Century cannon site was planned throughout the season.

Owing to very inclement weather, high winds, particularly at weekends when our pre-planned site visits were to be made, our seasonal planned work had to be cancelled and carried forward to 2016.

During the dives which were able to take place only observation of the seabed took place. It was noted a great deal of seabed scouring had taken place during the winter. Both Cannons and Anchors were heavily underscored exposing much material. Some deterioration of these objects was observed.

This has been recorded for our site records.

Evaluation of this will be made in 2016.

During 2015 monitoring and security visits were made to both Salcombe A (Moor Sand) and Salcombe B 1350BC sites. No recoveries were made as the 2015 season was designed to concentrate on the 17th Century site and other visits for 2015 were to monitor previous years' work

It is planned to return to both Bronze Age sites in 2016 and in particular the area for 1350 BC

Planned 2015 work (uncompleted) has been transferred to the 2016 season with anticipated hope for early season start program

Field work continued and is ongoing in terms of magnetometer survey and is providing valuable information that can be used in 2016

### 3.2.4 Magnetometer Survey 2015

Apart from two limited Magnetometer Runs in 2015 the sea conditions did not allow continuous surface surveys as reasonable operating good sea states did not prevail.

Our equipment (magnetometers) has been refurbished and is ready to resume work during 2016

Example of the Magnetometer data and analysis provided. The team propose re-checking these 'hits' and then spot dive to see if they correlate to the main sites. Examination of results would then be able to conclude whether they are relevant.

It is considered that during 2016 the Magnetometer survey will extend as far as Prawle Point and include Elender Cove (Wreck of Clipper Lalla Rookh) and to the head where HMS Crocodile and De Boot were lost.

Offsite, thoughts are that possibly the protected 17th Century site may be drifted off sections of De Boot or it may be part of the loss of the 17th Century story of the Spanish Vessels not so far found.

Stenuit, Dean and Crocker all searched many years ago for these exact sites but produced no more evidence than that already known. Examples of the Magnetometer data and analysis are shown below;



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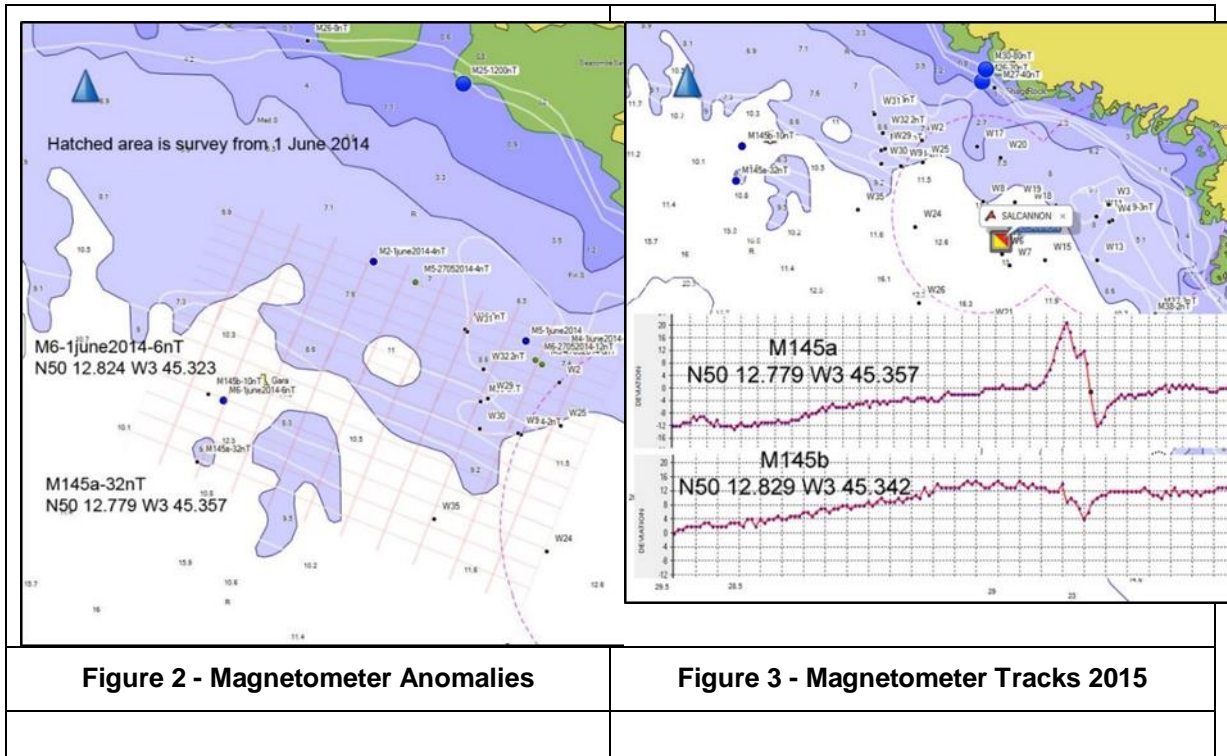


Figure 2 - Magnetometer Anomalies

Figure 3 - Magnetometer Tracks 2015

**3.2.5 Magnetometer Survey 2016 (proposed)**

This work was still in progress during 2015 and will be carried on into 2016.

Area of Interest will again be ADUWessex 21

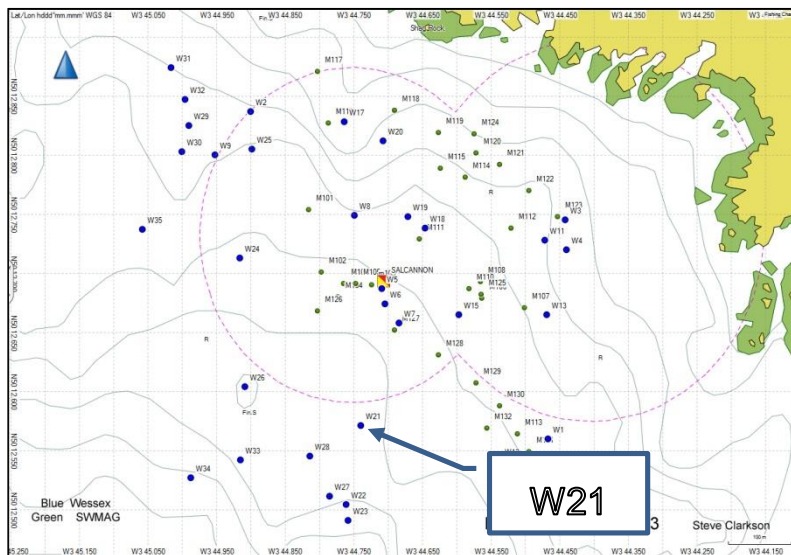
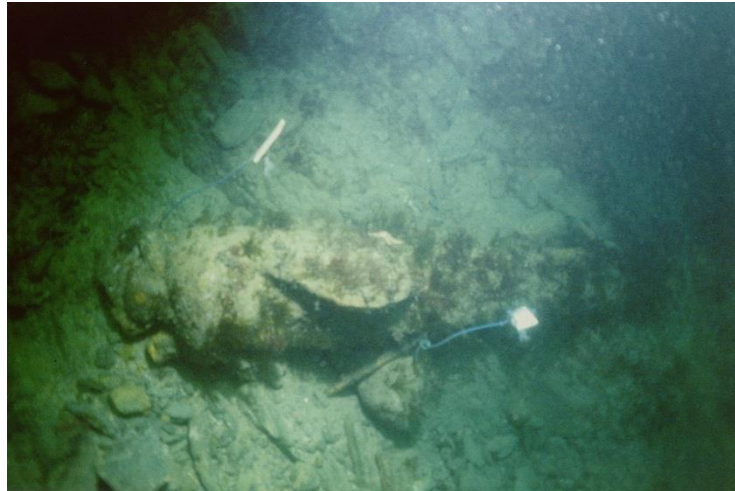


Figure 4 - Wessex 21 Site Area



**3.2.6 Salcombe 17th Century Site**

Field work this year concentrated on the central area of the 17th Century site, no recoveries were made and visibility was not very good. Typical visibility conditions are shown below in Figs. 5 & 6.



**Figure 5 - Salcombe Cannon**



**Figure 6 - Underwater Visibility (typ.)**

### 3.3 Off-site work

#### 3.3.1 Terrestrial Work

SWMAG continues to enjoy close co-operation from the British Museum and English Heritage as well as Local History Societies.

With Ben Roberts now at Durham University we continuously liaise and exchange information and gather opinions regarding the sites.

During 2012 SWMAG deposited with the British Museum 2 Tin Ingots that had previously been recovered from the Erme Estuary. It was thought this analysis would take place during 2013 but has been moved to 2015 owing to funding.

This analysis and examination has now been completed by the BM and we are trying to obtain reports

The aim was to date and correlate to those recovered and located at Moor Sand and Salcombe. This will prove localised trade along the south coast of Devon. Comparisons can then be made to terrestrial recoveries from Dartmoor, Cornwall and inland Devon.

As reported previously, Tin bearing Ore Load has been seen at Deckler's Cliff plus Copper further up.

#### a) British Museum - Erme Estuary Tin Ingots donated 2012

(Note: Details below re-input from 2012 report as BM analysis on-going).

The two tin ingots, shown in Figure 7 below, are from the Erme Estuary Tin Ingot site. These were donated by SWMAG in 2012 so that a comparative analysis with the Salcombe/Moor Sand tin ingots could be carried out.

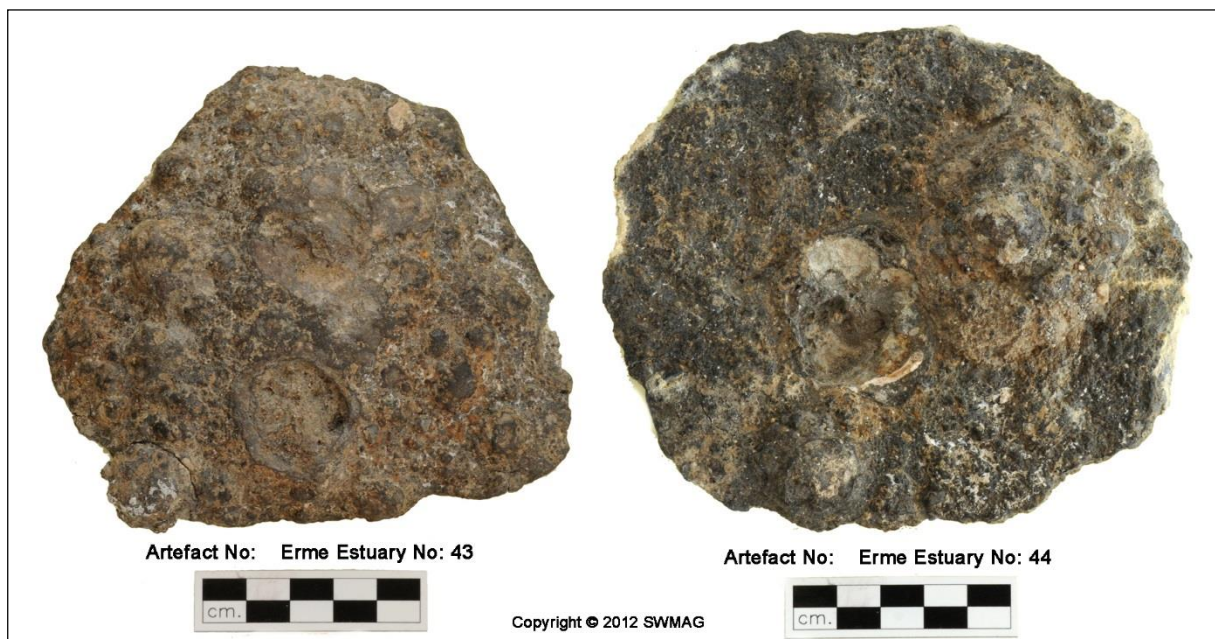


Figure 7 - Erme Estuary Tin Ingot Nos. 43 & 44 donated to British Museum

Interim: B Roberts/British Museum/ Durham University analysis artefact report (taken from verbal notes and meeting)

Ben Roberts stated that the continuing analysis of the Tin Ingot recoveries was almost complete. Comparison analysis from the Erme Ingot Ingots has been completed.

The results of all this will be set out in a separate British Museum publication hopefully during 2016.

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Ben Roberts states that there are age differences between the Salcombe Tin recoveries and those from the Erme Estuary. Whilst the Salcombe Tin is confirmed as being dated 900 BC, the Erme Tin Ingots are dated as approx. 600BC at the turn from Bronze Age to Iron Age periods.

This is strikingly important historically and archaeologically, as it shows over the small distance of this coastline continuous trade links spanning hundreds if not thousands of years. These conclusions are being further analysed with BM's colleagues at a research facility in Germany.

Also, Ben Roberts further stated that the Bronze Age gold recoveries, both 1350BC and 900BC sites are still undergoing analysis and the results and comparisons will be soon completed.

#### **b) Local Society Co-operation for Research**

SWMAG has developed close relationships with local communities and interested parties. Through use of lectures, these provide interesting comments on past terrestrial finds and recoveries.

What is considered a valuable developing local resource is the use of the involvement of all local interested parties. This will continue throughout 2016

#### **3.3.2 Museum Liaison**

The team continues to be in close liaison with two major museums this year, British Museum and the Plymouth City Museum & Art Gallery, and Ben Roberts at Durham University.

#### **3.3.3 British Museum**

The BM has updated the 'Salcombe/Moor Sand' collection database to cover all artefacts up to 2010 (refer to Section 6.1 Ref.5 for further details and link to database).

Samples of the copper (alloy) ingots, tin ingots and bronze objects are currently being analysed by BM archaeometallurgists to ascertain composition whilst the gold is also being analysed to characterise composition and manufacturing technology.

The British Museum is re-assessing the Tin Ingots from the Erme Estuary site. Re-appraisal has provisionally dated these as Bronze Age. Scientific comparison between the Salcombe Tin Ingot hoard and those from the Erme is currently taking place. SWMAG has donated two of the Erme Ingots to the British Museum for this purpose.

SWMAG has been recently advised, by Dr Neil Wilkin, BM that the equipment and machines needed to undertake the analysis of the following items has become available;

- i. tin ingots from the Erme Estuary site
- ii. post 2010 Salcombe tin ingots
- iii. pre 2010 Salcombe tin ingots

Hopefully this analysis will give some indication of the correlation (or otherwise) between the Erme Estuary and Salcombe tin ingots.

#### **3.3.4 Durham University**

Liaison continues to be developed with Ben Roberts (Ex British Museum) who is now the Head of Department at Durham University for Pre History. This is for research and opinion for the Bronze Age sites, find identifications, and new comparative findings.

Durham University has a tremendous record of Bronze Age research and it is considered that Salcombe Bronze Age sites will continue to benefit from the on-going relationships.





**3.3.5 Desk Based Assessment of Two Unusual Artefacts**

During reviews of the artefacts raised to date by SWMAG from the Salcombe B / Moor Sand sites, two have been noted with particular interest;

- i. SWMAG Artefact Ref: 200509180003  
(see Appendix I - SWMAG Artefact record sheet for details of this find)
- ii. SWMAG Artefact Ref: 201006010003  
(see Appendix II - SWMAG Artefact record sheet for details of this find)

SWMAG Artefact numbering system:

All artefacts raised are given a unique record number generated, on the day of the find, as follows;

Artefact Number: YYYYMMDDxxxx (e.g. 201407270001)

Where;

YYYY = year found (e.g. 2014)

MM = month found (e.g. July = 07)

DD = day found (e.g. 27)

xxxx = series number for the items found on that day (e.g. 0001 for the first item etc.)

See extended assessment details below.



3.3.5.1 Artefact Ref: 200509180003 – Swage or Weight?



Figure 8 - Artefact Ref: 200509180003

When this artefact was first raised in 2005 it was identified as a possible swage tool i.e. a tool with a negative shape used to form metal to shape and size. This was based on some similarities with the swage block found by George F. Bass and his team at the site of the Uluburun Bronze Age (14<sup>th</sup> Century BC) shipwreck off the south coast of Turkey.

However there is a dis-joint in the comparative sizes and weights of the blocks;

**Uluburun Shipwreck  
Swage Block (est. sizes)**

**Salcombe B / Moor Sand  
Artefact Ref: 200509180003**



**Details**

Length (mm)	100	48.1
Width (mm)	38	18.2
Thickness mm)	38	5.8
Weight ((gm)	1100	30

(Uluburun swage block;

Physical details from [http://www.swageblocks.com/swage\\_block\\_gallery\\_d20.htm](http://www.swageblocks.com/swage_block_gallery_d20.htm)

Image from;

[https://www.brown.edu/Departments/Joukowsky\\_Institute/courses/maritimearchaeology11/files/18756378.pdf](https://www.brown.edu/Departments/Joukowsky_Institute/courses/maritimearchaeology11/files/18756378.pdf))

(SWMAG Artefact Ref: 200509180003 details from SWMAG records)

The Uluburun swage tool is very substantial and would fit easily in the hand while carrying out metal working, the Salcombe / Moor Sand is significantly smaller and lighter and visually different.

However, recent reading of academic papers by Pare C.F.E. shows strong correlation with weights found in middle to late bronze age that are similar rectangular blocks with “*flat rectangular cross section and inlaid copper wavelike designs*” (see ‘Weights and Weighing in Bronze Age Central Europe’ Christopher F.E. Pare 1999). In this paper there are five similar weights with wavelike patterns!

Further investigation will be carried out in 2016 to correlate the data of the Salcombe / Moor Sand Artefact Ref: 200509180003 with these other weights.

**Note:** for explanation of the SWMAG artefact number recording system please see Section 3.3.5

3.3.5.2 Artefact Ref: 201006010003 – Disc Weight



Figure 9 - Disc Weight : Plan View  
© British Museum



Figure 10 - Disc Weight 'Nodule' Close-Up  
© British Museum

When this artefact was raised in 2010 it was initially identified as a possible Bronze Age weight/disc and included in the British Museum collection as a prehistory item with a description as “*Cast metal disc (possibly Copper alloy) with a double ogive profile*”.

When raised, this artefact was in the area generally associated with mainly Bronze Age finds; however there has been several 17th Century finds made nearby i.e. weights and coins.

The unusual shape was noted during a desk based review of artefacts and closer attention was paid to the shape and 'nodule' to one side. When viewed from an engineering perspective (with over 50 years of experience in a wide range of engineering fields) the shape and nodule are recognisable as a weight with an attachment (now lost) for hanging.

As the artefact is now part of the BM collection, discussions were made with Dr Neil Wilkin, BM Curator Bronze Age Collection on its possible function; e.g. Clock pendulum / drive weight and he supplied close-up images of the nodule end and requested help from horology departments within the BM.

After examining the artefact, the following comments were given by Oliver Cooke, BM Curator, Horological Collections “... *it does not seem to be a pendulum bob. The two green dots could be the remnants of a pendant ring, from which it could have been hung (or attached to something) and it could thus have served as driving weight for a clock, but it is certainly not a standard form. Given that there must be many other non-horological uses for hanging weights ...*”

The close-up image on the nodule (Fig.10 above) shows two the small round areas, light 'fuzzy' bright green in colour, with what appears to be 'bronze disease' [this is a typical observation in the corrosion of bronze or other copper bearing alloys].

The two small corrosion areas could be the physical remains of a 'cast in' wire loop possibly used to hang the artefact.

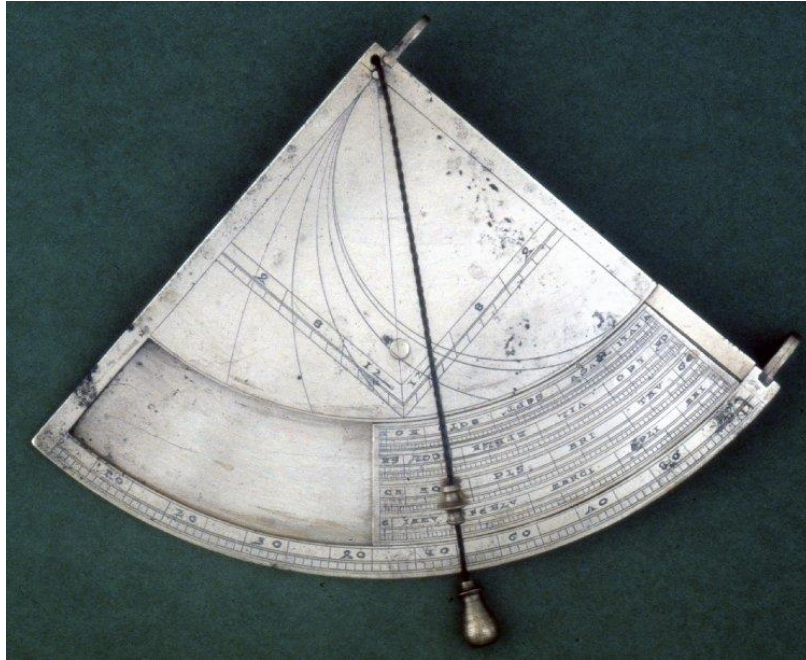
If we now discount the possible horological connections then we could reasonably assume that the artefact was attached by the 'possible' nodule attachments and hung by a single line to function as a personal / on-board part of equipment.

**Disc Weight – Possible Function: Seaman’s Quadrant**

Additional research has shown that the possible function for the artefact could be a simple pendulum bob on a Seaman’s Quadrant.

Often called the '*simple*' quadrant, the earliest instrument used by navigators for measuring the altitude of a heavenly body. It was in the form of a quarter circle of brass or wood with a plumb line suspended, when the instrument was in use, from the centre of the circle of which the quadrant formed part. One radial edge of the instrument was fitted with two pins or sights by means of which a sight of the heavenly body was acquired. This quadrant required two observers, one to bring the observed body into the line of the two pins and the other to note the position where the plumb line crossed the arc of the instrument.

An early example of a quadrant with a plumb bob is shown in Fig.11 below.



**Figure 11 - Quadrant BM Ref 1972,0104.1**

However, the example above and all the other quadrants found so far appear to show small conical plumb bobs but this function is still worthy of further investigations in the future.

**Note:** for explanation of the SWMAG artefact number recording system please see Section 3.3.5

## 4 Contact with the Nominated Archaeologist and Other Parties

The Moor Sand team and SWMAG maintained close contact with our Nominated Archaeologist and other parties. Communications during the 2014 season are summarised below.

### 4.1 Salcombe/Moor Sand Communications

	Phone Calls	E-mails	Meetings
Nominated Archaeologist	8	8	2
English Heritage	6	14	-
British Museum	14	7	1
Royal Albert Memorial Museum	-	-	-
University of Oxford	-	-	-
Plymouth City Museum & Art Gallery	-	-	-
Receiver of Wreck	4	4	-
Durham University	4	4	-
Pewter's Society	-	-	-

## 5 Illegal Diving

No illegal diving has been noticed on either site although location identification is hampered by site not being permanently buoyed. See comments reference MMO regulations plus interest from Trinity House requesting information regarding the buoying of the site.



## 6 Media/Museum/Outreach

### 6.1 Media

The team website, <http://swmag.org> has been further improved this year and is continuously accessed by others for research and information.

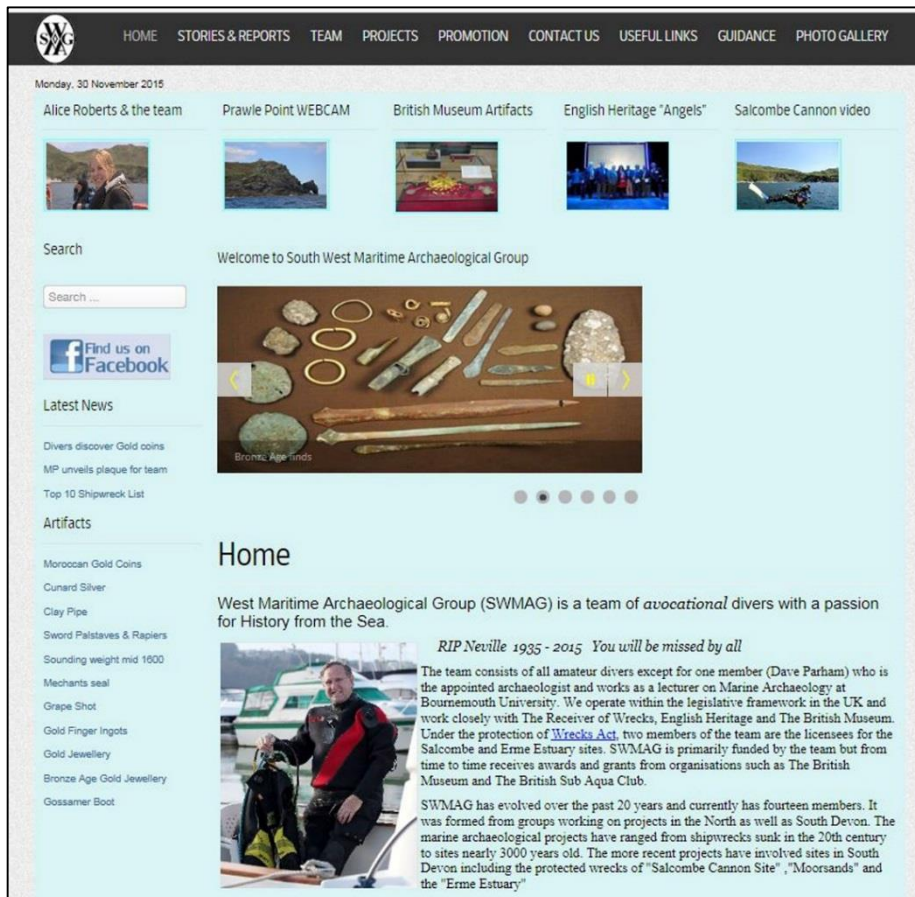


Figure 12 - SWMAG Web Site – Home Page 2015

Summary by Month										
Month	Daily Avg				Monthly Totals					
	Hits	Files	Pages	Visits	Sites	KBytes	Visits	Pages	Files	Hits
<a href="#">Nov 2015</a>	1203	824	1067	165	1587	381978	4457	28811	22268	32486
<a href="#">Oct 2015</a>	1296	909	1151	117	1334	467521	3654	35694	28180	40197
<a href="#">Sep 2015</a>	858	644	731	108	1270	435397	3248	21931	19348	25746
<a href="#">Aug 2015</a>	461	378	342	9	1	421590	282	10632	11727	14296
<a href="#">Jul 2015</a>	452	358	340	9	1	389295	299	10548	11102	14025
<a href="#">Jun 2015</a>	632	514	272	10	40	850909	319	8187	15447	18971
<a href="#">May 2015</a>	983	730	447	10	34	1578922	326	13859	22659	30500
<a href="#">Apr 2015</a>	1021	813	489	8	22	1121531	268	14690	24400	30657
<a href="#">Mar 2015</a>	986	807	297	8	28	1187170	235	8627	23418	28604

Figure 13 - SWMAG Web Site - Traffic Results (typ.)



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Other media as follows;

Ref	Media - Internet	Details
1	South West Maritime Archaeological Group web site	The web site continues to be a valuable resource to visitors for updates and information on the group's activities. e.g. 4457 visits in November 2015.
2	British Museum Collections Database	Collections online database 'Compass' by the British Museum, currently lists;  <b>Salcombe Bronze:</b> 390 artefacts related to the Salcombe/Moor Sand Bronze Age sites, use the following link to view the images and details of the artefacts; <a href="http://www.britishmuseum.org/research/collection_online/search.aspx?searchText=South+West+Maritime+Archaeological+Group">http://www.britishmuseum.org/research/collection_online/search.aspx?searchText=South+West+Maritime+Archaeological+Group</a>  <b>Salcombe Cannon:</b> 546 artefacts related to the 17th Century cannon site, use the following link to view the images and details of the artefacts; <a href="http://www.britishmuseum.org/research/collection_online/search.aspx?searchText=Salcombe+Cannon">http://www.britishmuseum.org/research/collection_online/search.aspx?searchText=Salcombe+Cannon</a>  Note: Use the above links with the 'advanced search' facility to search within the results.
3	Pull-up Display Banners	The pull-up display banners provided by EH in 2013 (refer to 'SWMAG End of Season 2013' report Section 6.1 Figures 15 & 16 for details), have been used extensively in outreach presentations and are always a major source of interest and comments.

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## 6.2 Museums with SWMAG Artefacts on Display

Artefacts found by SWMAG are currently on display in two national museums as follows;

### 6.2.1 British Museum - The 'Citi Money Gallery, Room 68, British Museum'

This gallery was fully refurbished in 2012, and displays the history of money around the world. SWMAG artefacts are featured in two of the display cases.

- a) Salcombe / Moor Sand Bronze Age artefacts  
Representing pre-monetary trade, these are in the early prehistory case and feature the 'Leaf Sword', two copper bun ingots and two tin ingots. This represents Europe about 2000-800 BC when trade and exchange of goods took place over long and short distances.
- b) Salcombe 17th Century Cannon Site artefacts  
This display shows a selection of gold coins, fragments of jewellery as well as a fish shaped sounding lead, musket balls, a spoon and shards of pottery and glass. All finds from the 17th Century cannon site.

### 6.2.2 British Museum – 'Hoards: the hidden history of ancient Britain'



This exhibition (Room 69a) 3<sup>rd</sup> Dec. 2015 to 22<sup>nd</sup> May 2016, gives an introduction to hoarding in prehistoric and Roman Britain and features artefacts from the Salcombe B / Moor Sand Bronze Age site.

Three ingots from Salcombe B / Moor Sand Bronze Age wreck sites are on display as part of this (BM Ref. No's: 2010, 8032.296; 2010, 8032.159; 2010, 8032.97).

**Figure 14 - Copper 'Bun' Ingots: British Museum - Room 69a**

© Neil Wilkin British Museum

### 6.2.3 Plymouth City Museum and Art Gallery

Artefacts (on long term loan from the British Museum) from the Salcombe B / Moor Sand sites continue to be displayed in the 'Uncovered Gallery', Plymouth City Museum & Art Gallery. This exhibition has been very successful and is now in its fifth year of display.



*"When did people first arrive in the Plymouth area and what did they do when they got here? Uncovered, the new permanent gallery at the Plymouth City Museum and Art Gallery, contains hundreds of artefacts discovered in the local area such as skulls, domestic items, porcelain, pottery, urns, ingots, axes and coins".*

The gallery spans a time period that stretches from prehistoric times through to the present. The British Museum has lent items from the Salcombe Treasure to help tell this story.

**Figure 15 - Twisted gold torc from the Sa'dian dynasty**

(Morocco 16th-17th Century AD)



## 6.3 Publications

### 6.3.1 Salcombe/Moor Sand Sites

The book containing the finds from the Salcombe/Moor Sand Bronze Age sites up to 2004 has been well received is available from all major book stores.

Title of the monograph is 'Claimed by the sea: Salcombe, Langdon Bay and other marine finds of the Bronze Age' by Needham, Parham and Frieman (Ed.)

Published by Council for British Archaeology, United Kingdom, 2013

ISBN 10: 1902771958 / ISBN 13: 9781902771953

*'First discovered by sport divers in the 1970s, the two remarkable seabed finds of prehistoric bronze metalwork described here quickly became a testing ground for the new discipline of underwater archaeology, initially under the leadership of the pioneering maritime archaeologist Keith Muckelroy. A haul of 361 bronzes from Langdon Bay, Kent, represents one of the largest deposits from Bronze Age Europe. Dating to the thirteenth century BC, the collection is diverse in character and originates in various parts of Western Europe and the British Isles. The assemblage from Salcombe, Devon covered here is of similar date with a unique combination of types and materials; further finds have since been made at this site. Neither site having yielded any ships remains, all possible mechanisms for deposition are reviewed, including erosion of coastal deposits and ritual deposition at sea. Extensive comparative analysis favours the conclusion that the unparalleled Langdon Bay and Salcombe assemblages represent material spilled or jettisoned from boats in trouble.'*

This publication was the 2015 winner of 'The Keith Muckleroy Memorial Award'. The award announced at the 2015 NAS/PMSA Conference in Portsmouth. Unfortunately, due to personal circumstances, none of the CBTS authors were available to receive the award at the event.

On the day SWMAG team members accepted the award on behalf of the authors (see Section 7 for details).

### 6.3.2 Salcombe Cannon Site

Publication is progressing very slowly on the 17th Century Salcombe Cannon Site, supported by Alan Aberg, Society for Nautical Research (SRN) and for which SWMAG received a donation of £600.00 towards artefact drawings and photographs.

A lot of material has now been prepared in draft form by the various experts at the British Museum and Peter Davey of the National Pipe Archive on the baroque clay pipe etc. but we still await draft details for review.

Jim Tyson & Dave Parham have been liaising with JD Hill, Head of Research at British Museum, to review availability of the material they have so far, it will then be collated with the other material for formatting the publication.

Provisional dates; not available at present.

### 6.3.3 2015 Publications which include SWMAG projects

No publications including SWMAG current and previous projects have been identified this year.



## 7 Presentations/Outreach and Awards

### 7.1 SWMAG presentations 2014/15

SWMAG team members continue to make presentations to various groups and societies in and around venues in the South West and East Midlands regions.

Event	Date	Details
Dartmouth RNA & Dartmouth RN College	28 <sup>th</sup> Nov. 2014	'3000 Years of History from the Sea' by Ron Howell
Galmpton & Churston History Society	16 <sup>th</sup> Jan, 2015	'3000 Years of History from the Sea' by Ron Howell & Andy Elliott
Paignton Probus Group	28 <sup>th</sup> Jan. 2015	'3000 Years of History from the Sea' by Ron Howell
Hallaton Fieldwork Group	2 <sup>nd</sup> Feb. 2015	'3000 Years of History from the Sea' by Jim Tyson
Hollowell Steam & Heavy Horse Group	12 <sup>th</sup> Feb. 2015	'3000 Years of History from the Sea' by Jim Tyson
Strete Social Club	3 <sup>rd</sup> Mar. 2015	'The Gold Wreck' by Ron Howell
Topsham History Society	12 <sup>th</sup> Mar. 2015	'To Sail no More...The Lord Napier' by Ron Howell
Exmouth 3rd Age Project	16 <sup>th</sup> Mar. 2015	'To Sail no More...The Lord Napier' by Ron Howell
Kingsbridge History Society	13 <sup>th</sup> April 2015	'3000 Years of History from the Sea' by Ron Howell & Andy Elliott
Anzac Club, Kingsbridge	30 <sup>th</sup> April 2015	'The Gold Wreck' by Ron Howell
Kingsteignton History Society	28 <sup>th</sup> May 2015	Diving into History...The Salcombe Bronze Age Wrecks by Ron Howell
SWMAG at The Flavel Theatre Dartmouth	22 May 2015	'From Swords to Missiles with Commander Rob Dunn OBE' by Ron Howell, Andy Elliott & Rob Dunne OBE
Brixham Probus Group	28 <sup>th</sup> May 2015	'To Sail no More...The Lord Napier' by Ron Howell
Devon Traction Club	3 <sup>rd</sup> June 2015	'3000 Years of History from the Sea' by Ron Howell
Brixham U3A	9 <sup>th</sup> June 2015	'3000 Years of History from the Sea' by Ron Howell
Bournemouth University Marine Archaeology Students	18 <sup>th</sup> June 2015	'3000 Years of History from the Sea' by Ron Howell
Chickerell Townswomen's Guild Weymouth	21 <sup>st</sup> July 2015	Diving into History...The Salcombe Bronze Age Wrecks by Ron Howell
Kingsbridge British Legion Poppy Appeal	11 <sup>th</sup> Sept. 2015	'The Gold Wreck' by Ron Howell



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Event	Date	Details
Retired Engineers Group Exeter	14 <sup>th</sup> Sept. 2015	'3000 Years of History from the Sea' by Ron Howell
Budleigh Salterton Probus Group	17 <sup>th</sup> Sept. 2015	'3000 Years of History from the Sea' by Ron Howell
Devon Traction Club	7 <sup>th</sup> Oct. 2015	'Treasure from Under the Sea' by Ron Howell
Dartmouth U3A	8 <sup>th</sup> Oct. 2015	'3000 Years of History from the Sea' by Ron Howell
Kingsbridge Local History Group	12 <sup>th</sup> Oct. 2015	'To Sail no More...The Lord Napier' by Ron Howell
Penpol & Point WI Falmouth	22 <sup>nd</sup> Oct. 2015	'3000 Years of History from the Sea' by Ron Howell
Ashburton U3A	27 <sup>th</sup> Oct. 2015	'3000 Years of History from the Sea' by Ron Howell
Totnes Ladies Probus Group	4 <sup>th</sup> Nov. 2015	Diving into History...The Salcombe Bronze Age Wrecks by Ron Howell
Strete Social Club	10 <sup>th</sup> Nov. 2015	'Treasure from Under the Sea' by Ron Howell
Brixham Royal Naval Assn. Charity Night	4 <sup>th</sup> Dec. 2012	'Treasure from Under the Sea' by Ron Howell
<b>2015 Donations:</b>		
a) Southwest Presentations: Monies raised for charities as a result of the talks and displays is approx. £950.00 divided between Rowcroft Hospice, British Legion Poppy Appeal, the Flavel Theatre Fund and a donation to a local Children's Hospice from the talk at Penpol and Point WI.		
b) East Midlands Presentations: Monies raised were donated to Arthritis Research UK		

SWMAG were also represented by Ron Howell at the following events;

- Marine Coastal Zone Assessment day at Cullumpton, Devon on 17<sup>th</sup> Dec. 2014
- Marine Management Organisation days meeting at Exmouth on 13<sup>th</sup> Feb. 2015



## 7.2 Outreach

### a) Harbertonford Primary School visit

At the invitation of Harbertonford Primary School teacher Joanne Lunt, Ron Howell of SWMAG attended a class of children of year's seven to eleven, to give a talk about the Bronze Age wrecks off Salcombe as part of their history project.

A few weeks previously the children had visited Plymouth Museum and had seen some of SWMAG's artefacts displayed there and one or two of the children proudly identified some of the objects on the screen of the Power Point presentation.

The children were extremely attentive throughout and asked many questions at the end.

As with Outreach displays the subject matter of the adventure of 'deep sea diving' and 'treasure' attract the children, and then they are keen to learn more, that is when other disciplines can be brought in such as the history of the finds, where they came from, geography, measurement and weight of finds, arithmetic and so on.

It was a very enjoyable talk for the speaker and children made even more so by the arrival by post a few weeks later of the thanks of the children expressed by individual colourful drawings of the subject, a selection a shown below.



Figure 16 - 'Thank You' cards from Harbertonford Primary School  
(A selection from over twenty cards received)

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**b) Local Community**

On Friday 22nd May 2015 in conjunction with the Britannia Royal Naval College and Dartmouth Royal Naval Association, SWMAG arranged a very successful 'Maritime Evening' at the Flavel Theatre, Dartmouth. Speakers included Commander Rob Dunn OBE of the Dartmouth Royal Naval College, and Ron Howell and Andy Elliott of the South West Maritime Archaeological Group.

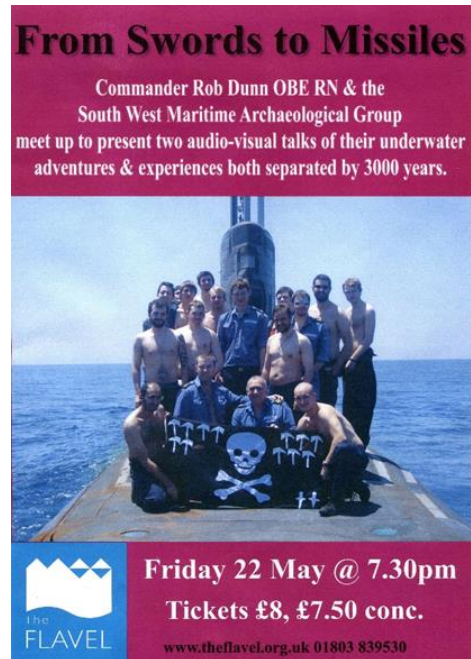


Figure 17 - Flavel Theatre Talk 2015

**c) Conference displays**

SWMAG showed displays of our 17<sup>th</sup> Century and Bronze Age work at both the IMASS and NAS/PMAS conferences this year.



Figure 18 - SWMAG display at 2015 NAS/PMAS  
© Credit to NAS and Martin Smith



### 7.3 Awards - NAS/PMSA Conference 2015

The 2015 winner of 'The Keith Muckleroy Memorial Award' was announced at the 2015 NAS/PMSA Conference in Portsmouth as;

*"Claimed by the Sea: Salcombe, Langdon Bay, and other maritime finds of the Bronze Age*

*By Stuart Needham, Dave Parham and Catherine J Frieman*

A power point presentation of the eleven publications considered by the judges for the award were reviewed and concluded that for a work published which, in the opinion of the judges, best reflects the interests, aspirations and high scholarly standards of Keith Muckelroy, a young maritime archaeologist who died in a diving accident in 1980

Unfortunately, due to personal circumstances, none of the CBTS authors were available to receive the award at the event.

However, a personal statement from Stuart Needham was read out on the co-authors behalf accepting the award.

Both the PowerPoint and statement contained very complimentary references to the South West Maritime Archaeological Group' and their contributions to the publication.

At the end of the day's presentations SWMAG were asked to accept the award on behalf of the whole CBTS team

The SWMAG team members were extremely pleased and proud that the team's representatives were asked to accept this prestigious award on the author's behalf for one of the most recent and significant publications on the Bronze Age that they contributed to by raising artefacts which were featured in the book.



Figure 19 - SWMAG Team members accepting 'The Keith Muckleroy Memorial Award'

(L-R: Mick Kightley, Jim Tyson, Mick Palmer & Ron Howell)

© Credit to NAS and Martin Smith

[27]



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## 8 Potential for Further Work

### 8.1 Fieldwork

The farmer of the land behind the Salcombe/Moor Sand sites, Mr Tucker, is willing for the team to carry out field walking during 'out of season' periods. This could prove very interesting and lead to a better understanding and perhaps provide evidence, why there seems to be multiple period wrecks in the adjacent waters.

This field work is planned for 2016 in conjunction with onsite work.

### 8.2 Outreach

During 2016 SWMAG will continue to;

- i. Make presentations to various groups and societies in and around venues in the South West and East Midlands regions.
- ii. Show displays of our work at national conferences.
- iii. Respond to all inquiries generated from our web site for research and information.
- iv. We are in still in ongoing discussions with the 'Garra Rock Hotel' on the possibility of providing an 'Archaeological Day' with talks and displays by SWMAG and local land archaeologists and other interested parties.

### 8.3 Desk Based Artefact Review

SWMAG will continue with reviewing artefacts from both the 17<sup>th</sup> Century and Bronze Age sites.



## 9 Conclusions

2015 has been an off-site successful year for the site and SWMAG in contrast to the season's adverse weather conditions. The Salcombe Bronze Age sites incorporating the original Moor Sand (Muckleroy) site are now considered to be at least two (possibly three) separate wreck sites with two date ranges, confirmed by the British Museum ( B Roberts, S Needham).

The Bronze Age sites during 2015 were only inspected for stability and security and the team concentrated on revisiting the original 17th Century site. This was initially to inspect and re survey the site verifying our previous data and for records. We wished to combine this with further recent off site research knowledge gained over the interim period to see if the extremities and identification of the site could finally be made.

Whilst identification has still not been made it can be concluded that much more field work is necessary and can be deemed as ongoing. Artefacts were recovered to see if identification or further knowledge could be gleaned. Photographs and drawings are currently being done for the sites official archive. Transfer to the British Museum can then be made.

Two separate areas of interest have been established in conjunction with spot dives and analysis of SWMAG/ADU Bathymetric Survey. This will be examined during 2016

The three Bronze Age areas (differing by date and referred to in the report) have been subject to intense desk based discussions and assessments and the team will resume field work in 2016. Areas of interest for the Bronze Age sites are not only the continuing development of the known sites, but the sea bed areas between.

It was interesting to have the initial feedback from Ben Roberts on the British Museums analysis of the age differences of the Erme Estuary Ingot recoveries and the Salcombe Tin Ingot recoveries. The British Museum is particularly enthusiastic regarding the interaction of communities with continental trade.

As always it was a very successful year again with Outreach. Successful with institutions and researchers accessing our data base and web pages for material. Not only did this research come from the UK but countries far afield such as America and Europe.

SWMAG and the Salcombe sites look forward to a successful 2016 season

2015 has proven a very difficult season throughout the whole southern coastline especially on exposed areas of coastline with weather being the deciding factor.

### Media Outreach

The team is very pleased with the level of outreach that it has achieved this year.

In addition to our longstanding commitment to delivering lectures/presentations about our work on the Bronze Age and 17th Century sites we have also enjoyed a considerable amount of media coverage, in all its formats.

The unveiling of the interpretation plaque by the local MP in 2014 has continued to raise the awareness in the area of the importance of the Salcombe sites.

General public outreach has also been greatly improved this year by Salcombe/Moor Sand finds continuing to be on display in two major museums with SWMAG credit being given for the recoveries.

In these difficult times we hope that this coverage has contributed to demonstrating the value of maritime archaeology to the public at large, achieved by a dedicated avocational team.





## Acknowledgements

The team would like to extend its grateful thanks to all the people and organisations that have supported us, in many ways, through all the years.

The following list is by no means comprehensive, or in any particular order, and we apologise to anyone we may have missed;

Alison James	English Heritage
Ben Roberts	Durham University
Stuart Needham	British Museum
Alison Kentuck	Receiver of Wreck
Alan Aberg	Society for Nautical Research
Coastwatch Team	Coastwatch Team Prawle Point
Coast Guard Team	Falmouth
Neil Wilkins	British Museum
Ian Oxley	English Heritage
Mark Dunkley	English Heritage
Fiona Pitt	Plymouth Museum

We would also like to make a special thanks to our archaeologist Dave Parham for all the good work and time that he gives the team together with the services of Bournemouth University.



Appendix I

**Artefact Ref: 200509180003**

**SCS Ref.** 200509180003  
**SCS Description** Bronze Swage  
**Artefact Image(s)**



© British

Museum

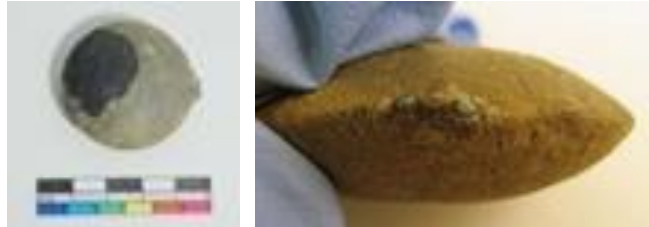
**BM Collection Online notes:**

**Object Type** Weight  
**Collection Ref.** 2010,8032.35  
**Link** [Control + click here to link to BM details](#)  
**Location/Dept.** Prehistory and Europe  
**Description** Copper alloy rectangular weight with three grooves on both main surfaces. A straight groove runs centrally down the length of the rectangle with two (five peaked) waved grooves on either side. The metal is coloured dark grey.  
**Date** Bronze Age?  
**Production Place** -  
**Findspot/Excavated** Salcombe (off coast)  
**Material(s)** Copper alloy  
**Technique** -  
**Dimensions** L (cm) 47.67mm  
W (cm) 18.07mm  
T (cm) -  
Wt.(gm) Wt. = 29.8gm  
**Inscriptions** -  
**Curator's comments** A possible swage (metal shaping tool)  
**Condition** Fair  
**Conservation** -  
**Additional ID's** 200509180003 [SWMAG Reference number]  
**SWMAG Record notes** Grooves, 3 off each side approx. 0.5mm deep.

## Appendix II

### Artefact Ref: 200806010003

SCS Ref. 200806010003  
SCS Description Bronze Disc Weight  
Artefact Image(s)



© Images courtesy of British Museum

#### BM Collection Online notes:

**Object Type** Artefact? [clock pendulum]  
**Collection Ref.** 2010,8032.33  
**Link** [Control + click here to link to BM details](#)  
**Location/Dept.** Prehistory and Europe  
**Description** Cast metal disc (? Copper alloy) with a double ogive profile. The surface is smooth and grey with a black shiny area covering one third of one side and a small area on the other side. The smooth round edge is interrupted in one place by a 7.56 x1.86 mm nodule of rough metal.  
**Date** Bronze Age?  
**Production Place** -  
**Findspot/Excavated** Salcombe (off coast)  
**Material(s)** Copper alloy (?) [lead]  
**Technique** -  
**Dimensions** L (cm) -  
W (cm) Dia. = 36.33mm  
T (cm) T = 14.49mm  
Wt.(gm) Wt. = 101gm  
**Inscriptions** -  
**Curator's comments** -  
**Condition** Fair  
**Conservation** -  
**Additional ID's** 200806010003 [SWMAG Reference number]

**SWMAG Record Notes** The nodule section has two small round areas with what appears to be 'bronze disease! Also, shape of this artefact does not correlate with the BA period; more closely resembles a weight associated with clocks/pendulum weight - possibly from the Salcombe 17th Century Site!  
Historical note:  
After the first intuitions and pioneer studies of Galileo Galilee at the end of the 16th century and the systematic experimental and theoretical researches of several scientists throughout the 17th Century, the properties of the pendulum were known rather well. The practical importance of the principle of the pendulum was immediately recognized, and the first pendulum clock was realized in 1657 by Christian Huygens. Salcombe cannon site has been dated to approx. 1640

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BM Oliver Cooke – comments email dated 9<sup>th</sup> Oct. 2013

“In a pendulum bob, one would normally expect a hole running straight through the middle (i.e. from edge to edge) for the pendulum rod – but I cannot see it in the pics. There does appear to be a 'nobble' on the edge, which might be the remnant of a fixing – e.g. for hanging it? If so, it might be a clock driving weight, although it would be unusual to find one in solid copper alloy (i.e. brass). Iron (similar density, much cheaper) or lead (much denser, often encased in brass) are usual.

**SWMAG Artefact numbering system:**

All artefacts raised are given a unique record number generated, on the day of the find, as follows;

Artefact Number: YYYYMMDDxxxx (e.g.-201407270001)

Where;

YYYY = year found (e.g. 2014)

MM = month found (e.g. July = 07)

DD = day found (e.g. 27)

xxxx = series number for the items found on that day (e.g. 0001 for the first item etc.)



## Appendix III **Illegal Diving Activities & Security**

The SWMAG security document for 2016 is annually distributed, usually in February. We issue it to the appropriate persons and to others on request.

The closure of Brixham Coastguard resulted in the alteration of security procedures, the site security document was amended and re-issued accordingly.

Security procedures currently have proved to work successfully and SWMAG wish to thank the Prawle National Coastwatch team for their diligence.

## Appendix IV **Salcombe/Moor Sand License**

Participating persons on the Salcombe/Moor Sand license during 2015 were:

Steve Clarkson	Mick Palmer
Dave Dunkley	Dave Parham
Andy Elliott	Jim Tyson
Ron Howell	Mike Turner
Mick Kightley	Andy Wagstaff
Mike Kingston	Julie Williams
Neville Oldham	Mike Williams

## Appendix V **South West Maritime Archaeological Group**

South West Maritime Archaeological Group members for 2 years or more are:

Dave Dunkley	Mick Kightley	Dave Parham	Julie Williams
Andy Elliott	Mike Kingston	Mike Turner	Mike Williams
Ron Howell	Neville Oldham	Jim Tyson	Steve Clarkson
	Mick Palmer	Andy Wagstaff	

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