

Colossus Excavation 2012 - Notes for Volunteers

Dive teams

The excavation will be undertaken by two separate teams of divers. Each team will usually consist of four divers. Two dives per day will be undertaken, each of 60 minutes; there will be a surface interval of two hours between dives. In order to keep the working day as short as possible – and, more importantly, be back in St Mary’s in time to get our cylinders filled – there must be no delay when changing teams. The second team should aim to relieve the first team on the seabed as team one’s dive time reaches 60 minutes. Each team will have a leader; team A will be led by Kevin Camidge, team B by Brendon Rowe.

This suggested task distribution may be modified by your team leader:

	Title	Detail	Equipment
1	Recorder	Record finds and place in numbered mini-grip bags Record stratigraphy Recover finds to boat at the end of the shift	Finds forms RECIT forms Finds box Tape
2	Record assistant	Assist recorder Photograph finds Take general photographs of excavation	Camera Photo scales
3	Excavator	Undertake the excavation Make notes, sketches and photos of discoveries	Tools box Drawing board Camera (if possible) Survey arrows
4	Excavation assistant	Assist with excavation Check spoil heap and spoil baffle Check pump hose disposition	Survey arrows Lump hammer Crow bar

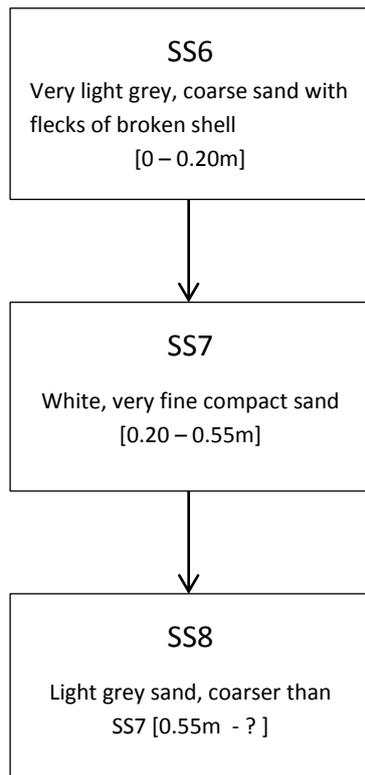
Excavation

Excavation will be undertaken by hand; either hand-fanning or using one of the various hand tools provided (tools box). Feel free to try the different tools and see which works best for you. You will be asked to write a log of each excavation session and this will include an appraisal of the efficacy of the tools and methods used. The reaction dredge will be used to remove spoil from the excavation and (hopefully) to keep suspended sediment to a minimum. The spoil will be deposited in two designated spoil locations, one to the north of the wreck (used for trenches 3 and 5) and one to the south of the excavation (for trenches 4 and 6). As far as is practical, the spoil will be contained by scaffolding mesh supported on iron stanchions. This is important to facilitate rapid backfilling.

The excavation will be undertaken stratigraphically (layer by layer). One layer at a time will be excavated – this is important. Each layer excavated will be recorded on the CISMAS RECIT form. All finds located will be recorded and then placed into numbered bags along with

some of the sediment from around the object. The finds from each excavation session will be recovered to the boat for more detailed recording.

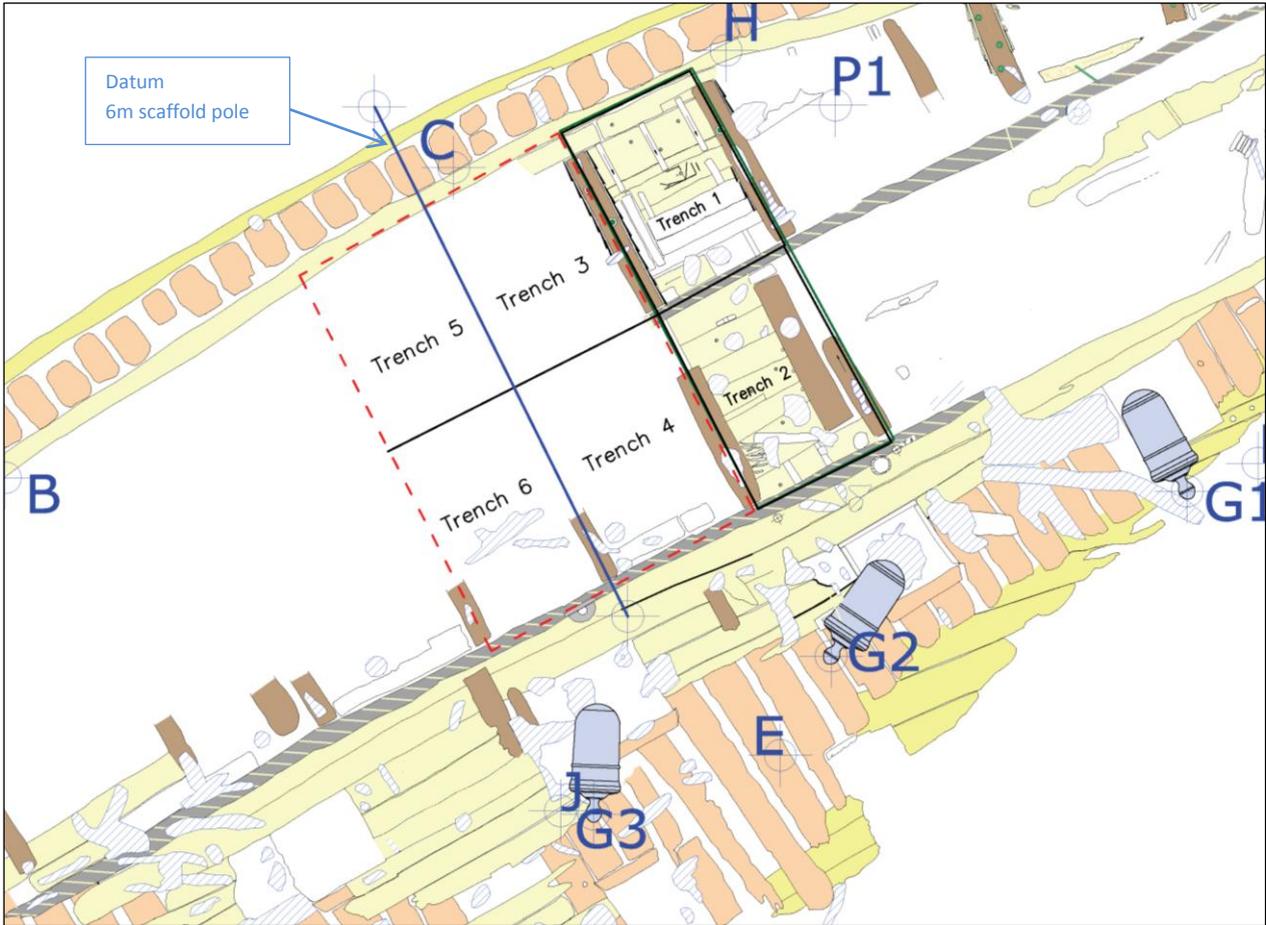
Shown below is a schematic drawing of the stratigraphy (layers) found in the 2002 excavation of the site. This gives some idea of what type of deposits you are likely to encounter and their relative thickness. You should be vigilant for any change of sediment when excavating – if you see any change draw this to the attention of your recorder. Finish excavating the layer you are working on before starting the excavation of the next layer.



Anything unusual or interesting encountered should be recorded. Use your drawing board to make sketches and notes, and your camera to take pictures (remember to include a photographic scale in all pictures). You can use these later to help you fill in your excavation log, which should be completed at the end of every day.

Make sure you read these:

Title	Description	Source
2002 Survey Report	Details and results of the 2002 excavation on the site	www.cismas.org.uk (free download)
2012 Project Design	Research aims and intended methods for the project	www.cismas.org.uk (free download)



KEY

Colossus 2010 V29

Timber		Metal	
Frames	Iron	Copper	Lead
Outer hull planks	Iron	Guns	
Inner hull planks			
Knees & riders			
Deck planks			

Plan showing the position of the trenches. Trench 1 and 2 were excavated in 2002. Trenches 3 to 6 are the trenches we will be excavating in 2012.

There are a number of reasons for splitting the excavation into four separate trenches. Elements of the ship's structure form natural divisions (see plan above) within the area to be excavated. North to south the excavation will be divided by the hanging knees of the gun decks; while an east west division is formed by the main gun-deck (MGD) planking, which because the ship lies on her port side, now stands vertically. These divisions will form the trench edges and will mostly form natural shoring for the trenches (see also the drawn sections on page 33 of the 2002 survey report).

The trenches will be excavated in numerical order. One of the aims of the project is to investigate a MGD gun-port, this will fall within trench 4. If the excavation does not go as quickly as planned, or if we are delayed due to bad weather trench 6 (and possibly trench 5) will not be excavated – without jeopardising any of the project objectives. If things go well we should be able to dump the spoil from trench 6 directly into trench 3 – thus saving time on the backfilling.

Recording

The recorder will be responsible for recording the stratigraphy (layers) and the finds located in the excavation. Once the finds have been recorded they will be placed into the pre-numbered bags along with some of the sediment from around the object. The bagged finds will be stored on the seabed in the finds box. The finds box will be recovered to the boat at the end of each shift. If you are not sure about a find (is this just a stone?) treat it as an artefact. All finds should be photographed *in-situ* if possible.

The actual methods used will depend on how often finds are encountered. The best method is probably for the excavator to work on the other side of the trench while the recorder deals with a find. If lots of objects are located in an area they can be marked with survey arrows until they are recorded and lifted. We are on a very tight schedule so it is important that finds recording does not slow down the excavation.

Shown below is the underwater finds recording form with some fictitious finds recorded to illustrate how the form should be filled in.

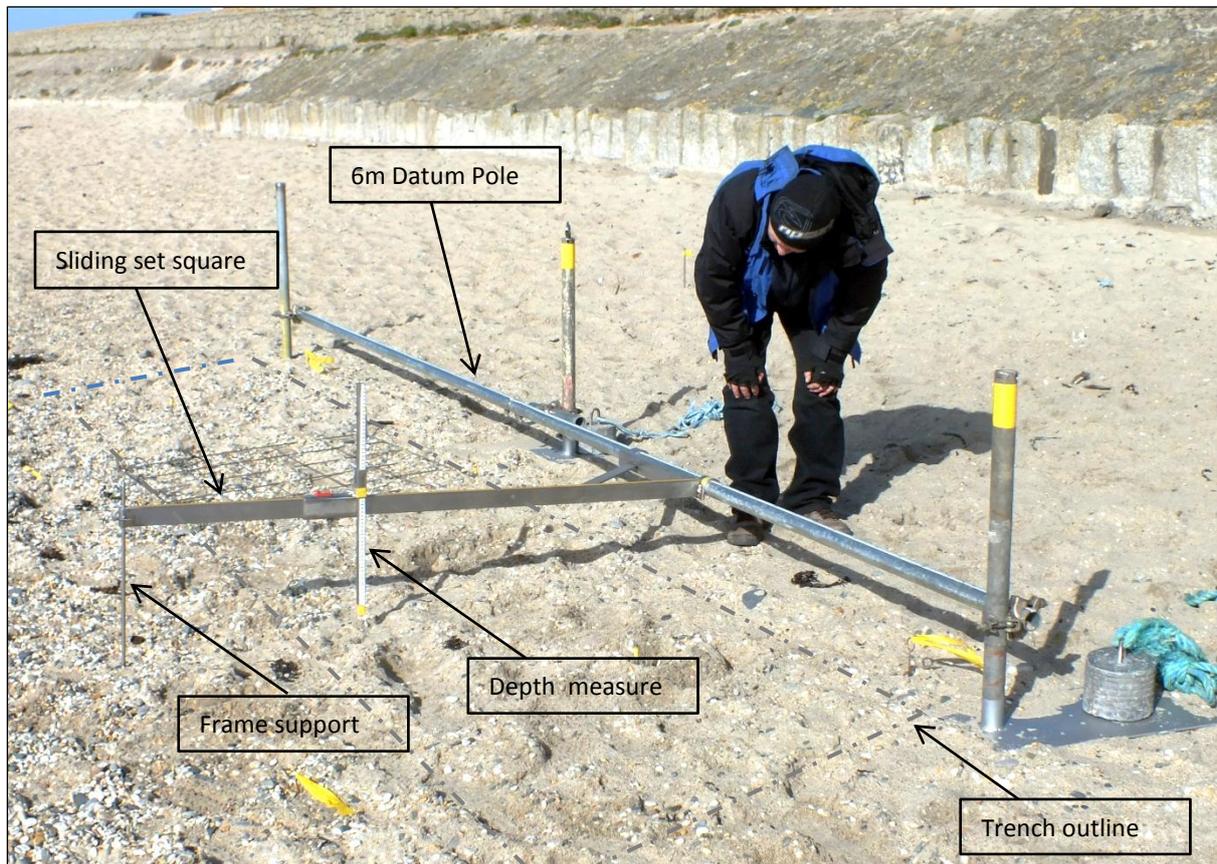
Recorded by		KC		Date		01/05/2012		Trench No		T3	
F No	Material	Object	Layer	Nos	Photo	Datum	Offset	E or W	Depth		
F 23	Iron	Nail	L05	1	✓	325	121	W	62		
F 24	Ceramic	Plate frag	L05	2	X	305	105	W	52		
F 25	Copper Alloy	Object	L06	1	✓	220	98	W	56		
F 26	Fe Conc	Object	L06	3	✓	150	68	W	42		
F 27	Glass	Window frag	L06	1	X	280	71	W	38		
F			L								
F			L								

The offset frame used to measure finds positions has scales graduated in centimetres. Do not attempt to convert these into millimetres or metres; simply write down the measurement to the nearest centimetre – as it appears on the scale.

Datum – this is the 6m long scaffold pole running across the trench

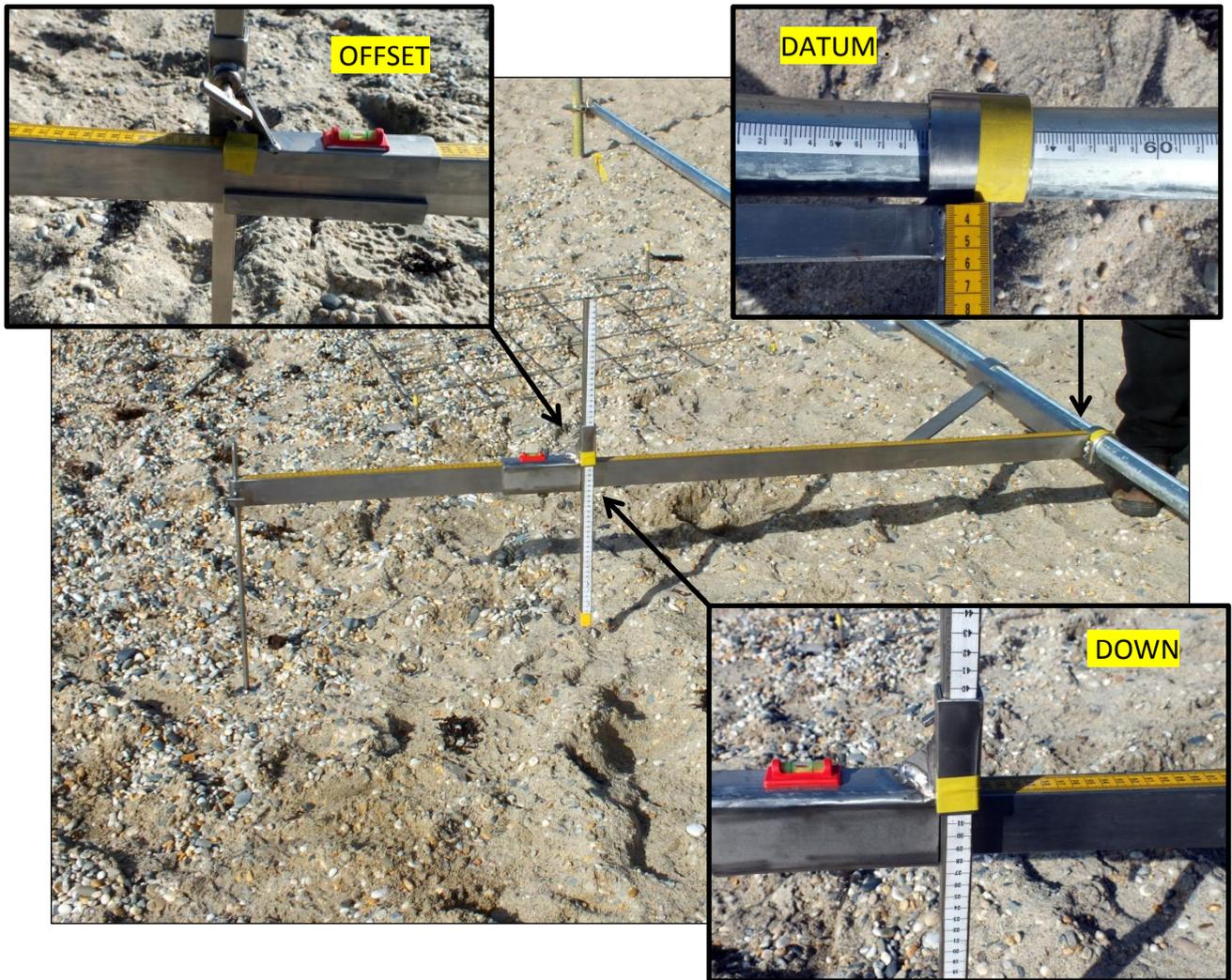
Offset – this is the large set square attached to the scaffold pole. Note the need to record which side of the scaffold pole it is offsetting from, E or W in this case

Depth – the rod which extends downwards from the set square



The datum pole will stay in place throughout the excavation. It will be positioned as shown on page 3. The sliding set-square will be placed over this when finds are to be positioned. The recording assistant will slide this along the datum pole – they will need to be positioned roughly where the person is standing in the photo above. The recorder will be situated inside the trench and will operate the ALONG and DOWN sliders until the pointer of the DOWN measure is directly above the artefact (see pictures page 7). The readings on the DOWN, ALONG and DATUM scales will then be recorded (see underwater recording form page 5). Care should be taken that the set square is level (bubble on the ALONG bracket) by altering the frame support leg.

In trials on the beach the system proved easy to operate and was very quick – it took less than two minutes to record six simulated artefacts.



In each case the edge to read from is coloured yellow to help avoid confusion. Please take care when moving the sliding set square that the DOWN scale and the support leg are locked in position and do not get knocked against anything.

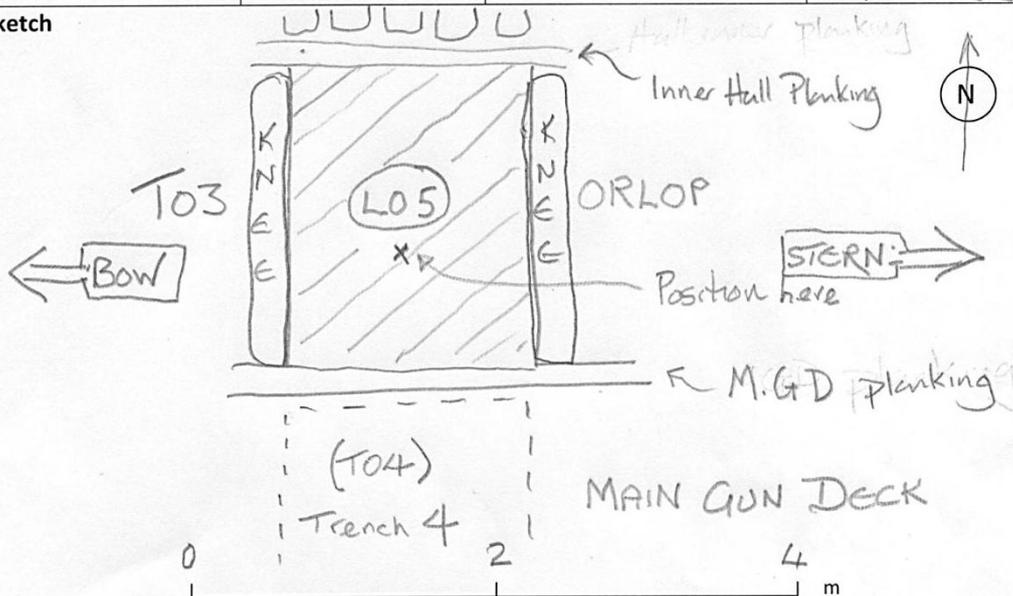
Sediment Timber Concretion Artifact Rocks

Number	Type	Trench/Area	Site Code & Year
L05	Sediment	T03	C / 2012

	ST	CA	R	Description
a) Colour	█	█	█	Very light grey
b) Material	█	█	█	Silty Sand
c) % Sand, Silt, Clay	█	█	█	20% silt 80% sand
d) Inclusions	█	█	█	Small stone chips + broken shell
e) Compaction	█	█	█	Fairly loose
f) Alignment	█	█	█	—
g) Shape	█	█	█	Extends over whole of T03
h) Condition	█	█	█	
i) Toolmarks	█	█	█	
j) Fastenings	█	█	█	

Dimensions	Position		Refs
L 2.55 m	X 260150.47	Along 305	Photo ✓
W 1.58 m	Y 5535589.14	Offset 140 E	Plan ✓
D 25 m	Z 10.94	Depth 104	Section/Profile ✓
			Sample S28

Sketch



Interpretation

Sediment accumulated after the ship turned onto port side. Only on the ORLOP deck-space.

Recorded by	Date	Relationships	
KC	01/05/2012	Under L04	Cut by
		Over L06	Cuts
		Part of	Contains
		Same as L09	Fastened to

CISMAS RECIT form showing how this should be used to record sediment (layers). Note this is a multipurpose context form which can also be used to record concretion, timber, stone and artefacts.

Special responsibilities

Many volunteers will also have an area of special responsibility. These responsibilities are listed below. As you can see some of these have yet to be assigned; if you are willing to undertake one of these tasks please contact me for further details. Every member of the team will need to take responsibility for at least one of these tasks. There is a lot to be accomplished and some degree of flexibility will be required.

Special Responsibilities		
Task	Description	Leader
Finds	Handling, storage and recording of all artefacts.	Janet Witheridge
Dive supervision	Monitor suitability of conditions for diving and maintenance of dive records and checking divers into the water	Brendon Rowe
Housekeeping	Management of catering	Sharon Austin
Photography	Manage all digital photo files and supervising underwater photography	Sharon Austin
Survey	Fixing of control points and running the site GIS	Peter Holt
Engineering	Maintenance of pumps and dredges. Deployment of fixed datums and offset device	Jeff Dicker
Fuel	Purchase and transport of petrol for the dredges	
Log keeping	Keeping of the boat log required by the MMO license. Also logging air fills	Peter Menear?
Blog	Running of a project blog or facebook page while on site	
Video	Responsible for the video equipment and getting video footage of all aspects of the work	
Everything else	You name it	Kevin Camidge

Finds Recording

Once an object has been recovered it needs to be recorded in detail. This will be undertaken by the finds assistant, mostly at the flat in Hugh Town. The object will be measured and described; this data will then be stored on an XL spreadsheet (this will be exported to Site Recorder later).

Detailed photography will also be undertaken. Each object will be photographed using a digital SLR and a 60mm micro (up to 1:1) lens. Multiple photographs of each object will be made to cover all faces of the object. A suitable scale must be used – the scale will be close to and parallel with the lower frame edge of the photo.

Finds will then be stored in their original bags (containing water and sediment). Finds will be stored in the following categories (by object material). This will allow easy selection of objects for the reburial trial.

- Ceramics
- Copper alloys
- Wood
- Leather
- Iron
- Glass

Pre-numbered finds bags will control the issue of finds numbers – in all cases the find number will be derived from the bag. The finds bags will be prepared each day by the finds assistant, the number to be written clearly on the write on strip (white bit) on the outside of the bag with a waterproof felt tip pen. Finds numbering will start at F700 for 2012 (see table below).

Numbers	Used	Finds location
100-421	Excavation 2001-2	MM & Reburial
500-637	Monitoring 2009	Seabed
700 onwards	2012 Excavation	Reburial & IoS museum

The finds will be sorted into three different groups. Most will be reburied within the last trench excavated. A small number of finds will be going to the Isles of Scilly museum. The remainder of the finds will be going to York Archaeological Trust for analysis prior to reburial in September 2012 as part of a 25 year reburial trial.

Dive Cylinders

Each diver should bring two dive cylinders and a pony cylinder to use as an independent air supply. Please make sure these cylinders are full as there will not be any opportunity to fill cylinders before the first day of diving. The charges for dive air on the Islands have been increased dramatically for 2012 – this increase occurred after the budget for the project was fixed with EH. Filling a twin set costs us two air fills. For this reason (and to help with the limited space on the boat) it would help if divers used single cylinders and a pony rather than twin sets for the project. Using a twin set rather than singles will cost an extra £96 per diver in air fills. The project budget is extremely tight so we can only pay for two fills per day per diver. If you intend to bring a twin set please contact me to discuss this. If you choose to use a closed circuit system we will attempt to provide Sofnalime (sponsorship from AP diving) but the project cannot pay for oxygen (nor is there any on the islands).

Post Processing

Those who have worked on CISMAS projects in the past will know that a great deal of post-processing takes place in the evenings – this project will be no different. To get involved in this you will need a windows laptop computer (with word and XL; copies of Site Recorder will be provided). If you do not have a suitable laptop please contact me so that I can try to arrange for you to borrow one.

Accommodation and Luggage

The two flats are some distance apart, one being about 1.5 miles from the quay where we embark on the dive boat. You may wish to consider bringing a bicycle (we can put these in the equipment container to get them to Scilly) – again contact me for more information.

Personal luggage should be labelled with the name of the flat you are in (Altemera or Upper Jackson) and placed in the general luggage container on the quay at Penzance – this will then be delivered automatically when it arrives in Scilly. I will give you a luggage label on the quay. Anything for the dive boat (diving kit) should go into the CISMAS container – no need to label this, we will load it onto the dive boat ourselves.

Altemera	Upper Jackson
Kevin Camidge	Janet Witheridge
Peter Holt	Innes McCartney
Brendon Rowe	Bill Bowen
Jeff Dicker	Clair Hallibone
Peter Menear	Ian Panter
Sharon Austin	Jezz Davies

Food

The tradition on CISMAS projects is that food is provided and meals are cooked communally on a rota basis. This is complicated on this project by the fact that we are accommodated in two flats which are about a mile apart. The food budget is fixed and not large. Basic food for breakfast, mid-day sandwiches and evening meal will be provided – but we may have to run a kitty to augment the basics. Alcohol is not provided.

Photography

It would also be helpful if anyone with an underwater camera would bring this along to use on the project. CISMAS has two underwater cameras for project use but the more cameras the better – you will also be more familiar with your own camera. We have a policy on these projects of sharing all the photographs with all the participants – we would be grateful if you also shared your photographs with the project.

ALL underwater photographs should include a scale. Where possible this should be placed so that it appears close to and parallel with the bottom frame of the photograph. Never place the scale so that it obscures part of what you are photographing. Photo scales will be included in the underwater recording box. You will always get better pictures by setting the white balance on the sea bed – if you do not know how to do this ask someone (Sharon or me). A quick ‘seminar’ on underwater photography and the use of the CISMAS cameras will be given at the start of the project.

Photo Processing Notes

Once digital photos have been downloaded from the camera the most important thing is to assess and index them straightaway. The easiest way to do this is to put them into folders. Where possible the folders should reflect the find/context number of the subject of the photo. If no suitable number exists then give a descriptive name to the folders – for example Digging_Trench_3, Recording_Trench_2, Drawing, Recording_Trench_1. Note the use of underscore instead of spaces. The easiest way to create the folders and transfer the pictures is by using PHOTOSHOP BRIDGE. Select the pictures to move in BRIDGE then right click the selections and choose MOVE TO from the menu. Navigate to where you want them to go (create new folder if necessary using the new folder button), Click OK and the pictures will be moved to the selected/created folder. You can also give the files meaningful names all in one go in BRIDGE using the TOOLS>BATCH RENAME option. Make sure you tick RENAME IN SAME FOLDER.

Once the photos are in folders, remove failed and duplicate pictures. Take care with duplicates that you keep the best pictures – check focus carefully by zooming right in, with

PHOTOSHOP you do this by selecting the zoom tool (magnifying glass), right click the picture and select ACTUAL PIXELS (or select VIEW>ACTUAL PIXELS from the top menu). If in doubt keep duplicates rather than deleting. Make careful note of any photos which need to be retaken and make sure this gets done.

If you need to process pictures to correct colour etc then make copies of the pictures so that the originals are still available (in Photoshop use SAVE AS). This is important as every time colour, brightness, rotation etc is undertaken some degradation of the image occurs. All such copies should have the same file name as the original with the addition of _ENH at the end – example F157_ENH.jpg

Once this has been completed, make a copy on another device (USB hard drive or CD/DVD). Never delete photos from the memory card until you are certain that at least two copies of ALL pictures exist.

Photoshop Hints

Colour Correction

The best way to avoid colour problems with digital photos is to set the white balance on the camera underwater. Leaving the camera set to auto white balance will produce unpredictable results. To set the white balance on the seabed, use a neutral white or grey object and make sure it completely fills the frame. Take care – many apparently white objects have a colour cast.

IMAGE>ADJUSTMENTS>AUTO LEVELS [Shift + Ctrl + L]

This will sometimes cure exposure and colour problems in one go (worth a try – you can always undo). But results are unpredictable and can nearly always be bettered by one of the methods below.

IMAGE>ADJUSTMENTS>MATCH COLOUR

Tick the NEUTRALISE box and all colour cast will be removed. The amount of neutralisation can be changed using the FADE slider. Exposure may still need adjusting. This seems a fairly reliable way of correcting colour.

IMAGE>ADJUSTMENT>LEVELS [Ctrl + L]

Select the black dropper and click on black points in the photo – keep clicking until it looks right. If there are no blacks in the photo try the white dropper. This method does not always work but sometimes it is the only correction that works for ‘awkward’ pictures.

Exposure

Avoid the IMAGE>ADJUSTMENTS>BRIGHTNESS/CONTRAST command, which produces poor results.

IMAGE>ADJUSTMENTS>CURVES [Ctrl + M]

The exposure can be altered by adding points to the diagonal line and dragging it into different shapes. This is complex and requires practice – but does allow separate control of the different tones in the photo.

You can also adjust the exposure selectively (separate adjustment for shadows and highlights) by using:

IMAGE>ADJUST>SHADOW/HIGHLIGHTS

This is most useful for lightening the shadows. Simply move the AMOUNT slider in the shadows section (zero is as original, moving to the right lightens). Set TONAL WIDTH to about 50%, RADIUS to about 30 pixels

Straighten and Crop

Straightening and cropping can be performed in a single operation.

Select the CROP tool from the lefthand toolbar [or type C]

Use the mouse to define the area of the crop; no need to be too precise as you can adjust this easily. To keep the same proportions as the original (very desirable) first set the crop box to the whole picture, then move the corners in while holding down the shift key. To straighten, mouse to outside a corner and rotate the box until the edges are parallel to a desired vertical or horizontal edge. Once everything is how you want it, select IMAGE>CROP. Please note it is always better to move in closer when taking the picture as cropping afterwards throws away pixels.

Sharpen

Always do this as the last adjustment. If you need to make another adjustment after sharpening then start again with the original image.

First zoom in on the image VIEW>ACTUAL PIXELS and move the image so you are looking at a critical part. Then:

FILTER>SHARPEN>UNSHARP MASK

Make sure the preview box is ticked. Try RADIUS set to about 1.0 (usual good value range is 0.3 to 3). Threshold should be set somewhere between 1 and 10 for most photos – start with 3. AMOUNT you need to judge on the photo; try 150% to start with. Once you are satisfied with the result click OK.

Note: The reason you need to sharpen digital photos is that they use a physical anti-aliasing filter in front of the sensor to avoid moiré patterns on the photos. This works by blurring the photo slightly. Most digital cameras process the pictures in camera to re-sharpen the image after it is taken. However, due to the limited processing power in camera this can often be improved. Interestingly if you do get a moiré pattern in a photograph it can often be removed by using the UNSHARP MASK filter in photoshop.

Kevin Camidge 25.I.2012

Method Statement

Diving Supervisor will be Brendon Rowe. The diving supervisor, Kevin Camidge, Jeff Dicker or Peter Holt may assume the role of “surface support” as required. At least one of these people will remain on the surface in this role at all times.

The dive supervisor’s responsibilities are as follows:

- To check weather and tides daily
- Complete daily risk assessment
- Decide and inform divers of assembly and “ropes off” times
- Decide diving pairs and order
- Task the divers
- Consult and liaise with the boat’s master
- Ensure surface support is maintained
- Ensure oxygen, first aid and evacuation procedures are in place.
-

The “surface support” responsibilities are as follows:

- Check divers’ equipment for suitability and operation
- Complete the divers’ checklist
- Complete and maintain the diving control sheet
- Monitor the conditions and divers and take emergency action if necessary
- Liaise with the boat’s master.

All diving will follow BSAC safe diving practices and BSAC 88 /ambient pressure diving closed circuit rebreather decompression tables/ or a recognised dive computer as appropriate with the following additions/clarifications:

- All divers must hold a CMAS 2 star qualification or equivalent and a current certificate of fitness to dive
- All divers will carry an alternative air source independent of their main air supply
- All divers will carry an alternative means of buoyancy inflation independent of the main air supply
- All divers will carry a surface marker buoy. This should be deployed immediately if the diver is in trouble or feels it is not possible to return to the fixed upline.

Dive times and instructions from the dive supervisor are to be adhered to unless an emergency situation arises. All divers must be familiar with their chosen decompression timing device or tables and not exceed its limits.

Diving will be in buddy pairs within 2 teams with each team leader designating specific roles to each diver. Whilst carrying out their designated duties, divers are reminded not to become distracted from ensuring sufficient breathing gas, monitoring time and staying within sight of their buddy. Generally the tasks in hand must always come second to safe diving.

Divers may be required to use tools and equipment on the seabed which are unfamiliar to them, if you are unsure about using a device, you must seek advice from your team leader and ensure that you only continue once training has been received.

A reaction dredge will often be operating on the seabed, this device is run from a petrol driven water pump mounted in the tender boat at the surface. Water is sucked from around the boat through the pump and delivered down a hose to the dredge. The dredge head itself consists of a larger "tube" set with a bend in it. The pressurised water is projected into the tube at the bend forcing water along the straight portion of the tube. The dredge is designed in such a way that as the pressurised water is pushed through the tube, a venturi effect is created at the head end of the dredge. This sucking action will remove sediment etc. and project it to the dredge outlet and beyond.

Additional care **MUST** be taken when using or diving in the vicinity of the dredge, loose items can easily be sucked into the dredge. Particular attention should be given to the location of spare regulators (octopus/pony regs), these should be stowed in easy reach for the diver but not left trailing or dangling where they could become sucked into the dredge. Should a regulator become sucked into the dredge head the dredge would literally suck the air out of that cylinder in a very short time. If you require advice about kit configuration, speak to the dive supervisor.

Bren Rowe 10.II.2012

Risk Assessment – Colossus 2012

Title of Project: Colossus Monitoring 2012	
Dates:	25 th May – 8 th June 2012
Location of diving operations:	Colossus Protected Wreck Site. The site lies just off the Island of Samson in St. Mary's sound, the Isles of Scilly. Position 49° 55.471'N 006° 20.505'W WSG84
Diving Times:	Diving can be carried out at any state of the tide. Some water movement is experienced at high water
Project Organisation	Cornwall & Isles of Scilly Maritime Archaeology Society
Diving Manager:	Brendon Rowe
Project Manager	Kevin Camidge
Names of Supervisors required	Brendon Rowe, Kevin Camidge.
Names of Divers and qualifications:	B. Rowe-BSAC Advanced, K. Camidge-BSAC Advanced, S. Austin-BSAC Advanced, P. Holt-BSAC Advanced, Witheredge-BSAC Sport Diver
Names of other personnel required and their duties:	Dave Williams Support Vessel Master Bill Bowen - Video
Others:	None
Aim	Survey & Excavation
Task to be undertaken	Survey & Excavation
Any other groups / persons to contact before diving ops take place.	When arriving on site diving supervisor will establish VHF communication with Harbour Control (HC) via the diving support boats skipper. HC will be advised when diving operations are to commence and when they have been completed for the day.
Decompression schedule	BSAC '88 Tables
Equipment required:	Standard SCUBA
Emergency Oxygen equipment	On Diving Support Boat
Special kit requirements	None
Any special competencies required from any personnel:	None
Project plan/RA prepared by:	K. Camidge/B. Rowe

Site specific details:		Risk
Sea / water conditions anticipated:	Smooth to Slight	
Tidal conditions:	Diving will take place throughout the tidal range	
Transport to site	Via Diving Support Vessel, MOONSHADOW	Low
Shipping	The site lies in St. Mary's sound. There is a moderate risk that the divers may be placed at risk by other water users. Whilst divers are in the water the DSV will fly the code Flag 'A' to warn other water users that diving operations are underway. A constant watch will be maintained by the surface crew for potentially hazardous shipping movements and in the event that these occur the diver will be shielded from the offending craft by the DSV. All divers will carry a surface marker buoy. Communication will be kept with Harbour Control throughout the diving operation	Moderate
Anticipated minimum underwater visibility:	2 metres	Moderate
Entrapment	The work will involve tapes & light lines which will be tied to weights and/or stakes. There is a possibility of entrapment with these or a very slight risk of encountering net or lines on the site. This risk is no greater than that found in recreational wreck diving. All diving will be carried out as a 'buddy pair' and all divers will carry a cutting device	Low
Restricted Surface visibility	The onset of restricted surface visibility may place the diving support vessel and the divers at risk from collision with other shipping in the area. Diving operations will not be started if forecast or actual conditions indicate that surface visibility is below that that is thought to be safe (1km). A constant check will be made on the weather and the divers recalled should conditions begin to deteriorate.	Low
Temperature	The sea temperature is expected to be around 10 degrees C. All divers will be required to use either dry suits or suitable wet suits and hot/cold drinks will be available upon request.	Low
Access & Exit	Access is not considered to be a risk Entry to the water will be by jumping from the boat (less than 1m) Exit will be by dive ladder. The boat carries a means of recovering an injured diver from the water	Low

Site specific details:		Risk
Breathing Gas	The depths at which the diving operations are to be conducted are less than 15m Air will be used as the breathing gas. BSAC '88 decompression Tables to be followed. All divers will surface upon reaching a limit of 60bar.	Low
Depth	Increasing depth of water can expose divers to addition risk of nitrogen narcosis and decompression sickness. The operations are to be conducted in between 0 and 15 meters of water. At these depths the risk presented by nitrogen narcosis is negligible to experienced divers and there is limited risk of decompression sickness provided BSAC '88 Tables are adhered to.	Medium
Weather	The site is relatively sheltered from adverse weather conditions. A weather forecast will be obtained each day. Diving operations will not be undertaken should the forecast indicate that weather conditions would make them unsafe. A constant check will be kept on weather conditions by both the master of the diving support vessel and the diving supervisor. Diving Operations will be abandoned when weather conditions appear likely to become hazardous.	Low
Underwater Visibility	In times of poor visibility, only experienced divers will be used. They will be in constant visual or physical contact with each other Should they become separated they will surface immediately.	Moderate
Underwater currents	The site is exposed to relatively mild underwater currents. Experienced gained by CISMAS on previous visits suggests that the site can be dived at any state of the tide. All divers will carry a DSMB.	Low
Diving support vessels	All diving operations will be conducted the from a MCA Code of Practice category 2. Vessel whose master is experienced at working with divers	Low
Illumination	All diving will take place during daylight hours.	Low
Tools	Reaction dredge	Moderate

Site specific details:		Risk
Becoming Lost	<p>A baseline will be laid to the survey area to aid navigation. Any divers unsure of the location can “tie off” on this line to navigate the site. Divers who are unfamiliar with the site will be familiarised with a site plan guided around the site on the first dive by an experienced team member if necessary. Instructions will be given to all divers to deploy a DSMB and return to the surface should they become lost.</p> <p>When working in a specific area for successive dives a guideline will be laid to this area by an experienced diver.</p> <p>All divers will carry a DSMB which can be used to attract attention should a diver become separated from the DSV at the surface.</p>	Moderate
Pollution:	None	Low
Other hazards	None	
Emergency Information		
Emergency procedures:	HM COASTGUARD- VHF Ch 16 and GMDSS. EMERGENCY SERVICES- 999.	
HM Coastguard No.	FALMOUTH COASTGUARD- 01326 317575	
Chamber No.	DDRC PLYMOUTH- 01752 209999	
Royal Navy Diving Doctor	07831 1511523 (24 hrs)	
Medical expertise:	FIRST AIDER- B. ROWE	
Medical equipment:	OXYGEN AND FIRST AID ON DSV.	
Casualty evacuation plan:	FOLLOW MASTERS INSTRUCTIONS.	