2010

Expedition Report
West Wales Wreck Exploration

Cardiff BSAC Branch 590

BEGS Grant Scheme

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Contents

Introduction

Expedition Aim

The aim of this expedition was to locate the exact positions of wreck sites in West Wales to expand the knowledge of the Cardiff club and make the locations and tidal information available to other divers.

Background

Cardiff BSAC frequently dives around West Wales. Milford Haven is a two hour drive from the club's base in Cardiff and the club regularly organizes weekend diving for a variety of level of divers. However, the club, and many other divers visiting Wales, tend to dive the same sites, such as the *Dakotian* (20m), the *Behar* (20m) and the *Lucy* (40m).

There are numerous wreck sites in West Wales but the exact locations are not widely known. There are no diving guide books for South or West Wales and the old wreck history books are out of print. The internet has much information about the wrecks themselves but minimal information about the actual coordinates to dive. The area of coast around Milford Haven can also be extremely tidal and information regarding slack times is often inaccurate.

The club purchased a side scan sonar at the beginning of 2010 and, equipped with the new gadget and lots of enthusiasm, went to explore the seas around West Wales.

In May 2010, the club applied for a BSAC expedition grant. This process, interestingly enough, added another dimension to the initial idea of 'lets go and find some dive sites'. It made the process much more organized, from the initial planning of the exact areas to research and preparing risk assessments, to recording and data gathering much more diligently than we probably would have done if we had just been going out to explore.

There were a number of highlights to the expedition. Such as finding the *Kerloch*, a fishing boat that sank in February 2010. We were the first to find it, report it to the coastguard and complete a Receiver of Wreck report. DIVE magazine wrote an article on the club, the new wreck and the BEGS grant providing some good publicity. An interesting aspect to finding such a recent wreck was that we could read current news articles on the internet about the sinking as well as the incident report which gave a lot of background to the event.

Another highlight was diving the *St Jacques*, which, although found using the side scan sonar early on in the expedition, was not dived until the last day of the expedition due to the lack of good enough weather to do so as it lies some way offshore. It turned out to be a terrific 35m dive.

The one wreck that eluded us for the whole of the expedition was the *Balholm* but we will keep looking! This means that the expedition will continue to run and therefore more members of the club can become involved and more wreck sites will be published on the internet.

Project Organization

Schedule

The project was ongoing throughout the year so dates were provisionally scheduled around neap tides.

Once a weekend was chosen, the weather was reviewed a few days before the weekend. We needed extremely flat seas to survey with the side scan so winds less than 3kn were required. Diving the surveyed sites to confirm location, layout and slack tide could be carried out in more variable weather conditions so the weekends were planned accordingly.

In all we completed six weekends in the year. We searched for 23 wrecks of which we found 13, and dived 10 new wreck sites (9 new to the club, 1 completely new). Each wreck is reviewed in full in *The Wrecks* section of the report.

One, the *Kerloch*, was a brand new wreck. It was reported to the Receiver of Wreck and both the club and the BSAC grant scheme received subsequent publicity in the press. Also the Pilot Vessel had obviously hardly been dived due to the number of artefacts remaining on the seabed.

The following table shows the weekends on which we searched and the days that we dived. Of the sites we looked for, some we found and dived, others we did not.

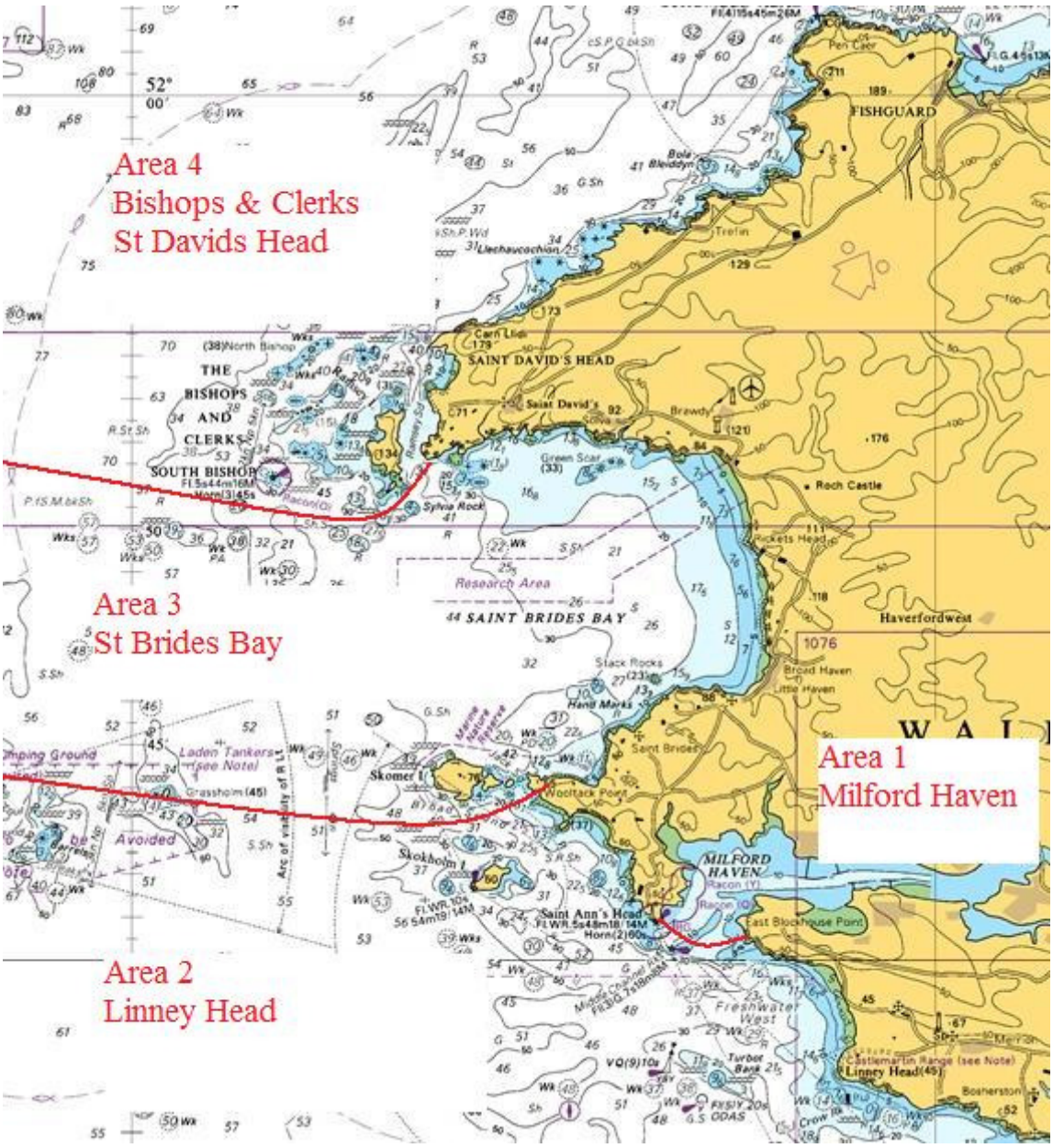
Weekend Dates	Notes	Area Surveyed	New Site(s) Located	Site Dived to Confirm Location /Tides	Searched for but Not Found
09-Apr-10	Surveying	Milford Haven & Linney Head	*Caroline*, Pilot Vessel, Landing Craft		*Balholm, Olive Branch, Helene, Ethel May*
10-Apr-10	Diving	Milford Haven		*Caroline*, Pilot Vessel	
11-Apr-10	Diving & Surveying	Milford Haven & Linney Head	*Kerloch*	Landing Craft, *Kerloch*	*Balholm*, Paddle Steamer, *St Jacques*
23-May-10	Diving & Surveying	Milford Haven & Linney Head	*St Jacques*	*Kerloch*, *Caroline*, Landing Craft	*Balholm*, Paddle Steamer
04-Jun-10	Surveying	Bishops & Clerks, St David's Head	*Langton Grange, Amazonense, Glenisla, Baron Ardrossan, Count d'Aspremont, Graffoe*		*Cymric Prince, Szent Istvan, White Plain, Colonian*
05-Jun-10	Diving	Bishops & Clerks		*Langton Grange, Amazonense*	
06-Jun-10	Diving	St David's Head		*Glenisla, Baron Ardrossan*	
24-Jul-10	Diving to confirm tides	St David's Head		*Glenisla, Amazonense, Baron Ardrossan*	
24-Jul-10	Bad weather	Milford Haven		Pilot Vessel, *Dakotian, Behar*	
04-Sep-10	Surveying & bad weather	St Bride's Bay		*Lucy*	*Hematite, White Plain, Elizabeth Alice, Englishman*
16-Oct-10	Diving & Surveying	Linney Head	*Nicolau Virginia*	*St Jacques*	Paddle Steamer, *Balholm*
17-Oct-10	Diving & Surveying	Linney Head	Paddle Steamer	*St Jacques*, Paddle steamer	

The project will continue as there are still sites which we found but have not yet dived such as the *Nicolau Virginia, Count d'Aspremont* and *Graffoe*. One day we may even find the *Balholm*!

Searching for Sites

Areas to Search

West Wales is a large region and so was split into different areas to search.



Initial Site Research

Before any practical surveying could be done, there was a lot of land-based research needed. We looked at the hydrographic service data for potential sites, scoured through old wreck books of Wales and searched the internet on sites such as www.wrecksite.eu as well as magazine sites. Additionally, we phoned local divers to ask for coordinates and exchange details of sites we had already found.

Searching using the Side Scan Sonar and Depth Sounder

The practical searching for sites was carried out either on days just dedicated to surveying or on diving days, between and after dives.

Full day boat surveying was usually done on the Friday of a calm weather weekend. Two or three members of the expedition would drive to West Wales before the rest of the team, launch the RIB, then drive up and down the researched coordinates in a grid pattern watching the side scan sonar. If the wreck site was located, or an area of interest identified, the location was marked in order to dive it the following day when the rest of the expedition team members arrived. We did three full days of survey where we looked at three different areas: Milford Haven and south to Linney Head in April, Bishops and Clerks in June and St Bride's Bay in September.

Dive Days

Once a site was identified there was always excitement about diving and what we might find. Occasionally, divers dived on that well known site HMS Vicinity, but generally the sites were good new sites and in 2010 West Wales had much better than normal visibility which helped significantly in assessing scale and layout of sites during the dives.

Follow-up Dry Research

Once a wreck site was located and dived, further research about the wreck was carried out in order to expand the known history or uncover more background. This additional research was particularly interesting for two sites we discovered, the *Kerloch* and the 'Paddle Steamer' wreck.

The *Kerloch* was a new wreck which sank in February 2010. We discovered it accidently in April while searching for another wreck. We radioed the discovery to the coastguard as it looked so new. We were the first to report the site and so we also completed a Receiver of Wreck report. Later in the year, the results of the investigation into the accident were made available on the internet which added to our excitement of finding a new wreck.

The 'Paddle Steamer' wreck we tried to identify but could not find any reference in the hydrographic data to a paddle steamer in that location. We then posted a video of the site on YouTube and asked questions on a paddle steamer forum to find out more about the type of boat it may have been in order to date it. After much discussion the consensus was that it may not, in fact, be a paddle steamer at all but that the paddle wheel may actually be a cable reel. This additional information expands the options as to the identification of the wreck.

Logistics

Weekend Trips

The drive to West Wales takes about two hours so generally the expedition team would go down for a full weekend, driving down on Friday and returning Sunday evening. There were nine people in the whole team but only six would attend any one trip depending on availability.

Accommodation

Accommodation was arranged in local B&B's, pubs, bunk houses and campsites depending on availability and the mix of divers. There is a lot of reasonably priced accommodation in West Wales at around £25 per person per night. The cheaper end is basic but adequate and aimed at divers and consequently has space to park the boat and trailer overnight.

Road Transport

Two members of the team had towbars to tow the boat.

Mark has a reasonably sized 4x4 that towed the boat on the majority of the trips. This vehicle also made launching and retrieving easy. On one trip Steve used his small van, but sadly the engine died on the drive home meaning he had to buy a new vehicle!

The remaining team members car-shared to drive the two hours to West Wales.

The Expedition Team

The Diving Team

Name	Diving Qualification	Instructor Qualification	Responsibility
Rhian Lewis-James	First Class	Advanced	Expedition Leader
Mark Gosling	Advanced	Advanced	Boat
Teresa Darbyshire	Advanced	Advanced	Dive Manager
Anne Hudson	Advanced	Open Water	Accommodation & food
Andy James	Advanced		Dive Manager
Brian Pentland	Advanced	Open Water	Dive Manager
Steve Turnbull	Advanced	Practical Instructor	Boat
Adrian Davies	Advanced		
Kasra Almasian	Sports		(We needed one more diver for the last dive!)

Personal Equipment

Full diving kit for 2 dives per day

- Twin cylinders, or two single cylinders with bail-out
- Nitrox preferable or alternatively air
- Safety gear – DSMB, flag, strobe or torch, whistle, knife or shears
- Alternative weather gear - hat, gloves, thermals, sunglasses, sun block

Diving Qualification

Divers were full BSAC diving members and had to hold a minimum of the BSAC Dive Leader qualification. However, on the last trip we were one diver short to make up pairs, so a well qualified Sports Diver, Kas, was taken on the trip. He learned a significant amount on the trip and, in just that one weekend, we have seen his diving improve.

Divers had a minimum of 100 cold water dives and all had dived within six weeks of the trip to ensure all kit was in working order.

Due to the frequency and unpredictability of currents in the region, divers were all competent with a DSMB and would deploy it at the first signs of any current. They also carried flags, whistles and strobes or torches for attracting attention, none of which, thankfully, were needed.

Equipment

The Boat

The boat's name is *Rhoberi* and it is registered with the coastguard under the Voluntary Safety Identification Scheme CG66.

Hull	5.8m Humber
Engines	Suzuki 140hp 4 stroke, Suzuki 3.5hp 4 stroke.
Electronics	Radio, Side Scan Sonar/ GPS/ Depth sounder unit, compass
Safety gear	Flares, O_2 kit, first aid kit, lifejackets, fire extinguisher, oars, spare fuel
Dive kit	Shot weight, lines (12m/20m/30m), shot buoy, lifting bag
Other	Anchor, log sheets, laminated charts, laminated tide tables, BSAC '88 tables, engine tools/spares, save-a-dive kit, A-flag

Equipment for Locating Sites

The club bought a side scan sonar unit specifically for the project, to be fitted to the club RIB. After researching available units the one identified as most suitable was a Hummingbird 997 which is a multi-unit consisting of side scan sonar, GPS with charts and depth sounder. Total cost with additional software £2,220.

The Wrecks

Area 1: Milford Haven

Milford Haven is a relatively sheltered location from both weather and tides and so is a popular and often dived area. The wrecks of the *Behar*, *Dakotian*, *Loch Shiel*, the 'Greek' and the *Thor* are well known to the club and are frequently dived. We have added four new, good wreck sites to our club repertoire in this area and these have already been dived by many of the club members this year.

Landing Craft

Research and Location of Site

The Landing Craft is one of the first wrecks we found with the side scan sonar. We were given coordinates by local divers which were corroborated by www.wrecksite.eu . It was relatively easy to locate as it stands square off the bottom and so was easy to identify on the sonar. There is, however, very little historical information about the craft.

GPS Coordinates

51° 41.647' N, 005° 05.266' W

Side Scan Sonar Image

The Dive

Depth: 12m

The Landing Craft is completely intact, which is unusual considering how close to the main Milford Haven shipping lane it sits. Wrecks are usually blown up or cleared as a shipping hazard. It is lying upside down with the landing doors bent up over the hull. On ascent you must either come back up the shot line or be careful not to drift into the shipping lane whilst using a delayed SMB.

Tides

Diveable at most states of tide during neaps. However, it is right at the edge of the shipping channel so any divers wanting to dive the site need to request permission from Port Operations on Channel 14 before doing so. We were given the go-ahead to dive when there was no large boat traffic due but they are not keen on granting permission.

The Caroline

Research and Location of Site

We knew the *Caroline* was west of the Dakotian but had never been able to locate it. It is quite small and was more difficult to find as we were still learning to use the sonar. The internet coordinates we had were of no help but after some searching we located it.

GPS coordinates

51° 42.271' N, 005° 08.282' W

Side Scan Sonar Image

The Dive

Depth: 15m

The *Caroline* is the bow of a converted fishing trawler. It has been severed in two amidships. The bow structure is completely intact, despite its missing stern, and you can swim directly into the holds and much of the internal ship from the broken section. It is a very small site, good for a maximum of 4-6 divers at any one time only.

Around 50 metres from the wreckage of the *Caroline* was a shadow marked with ? on the side scan image. It turned out to be a hole in the flat seabed around 3 metres in diameter and 2 metres deep. There were pieces of aluminium protruding from the sand in the bottom of the hole. Interesting to dive to see what it was but it probably won't become a popular dive site!

Tides
Diveable at most states of tide during neaps.

Statistics
- Built 1930 in Rotterdam
- Sunk 1941 while minesweeping
- Weight 253 tons

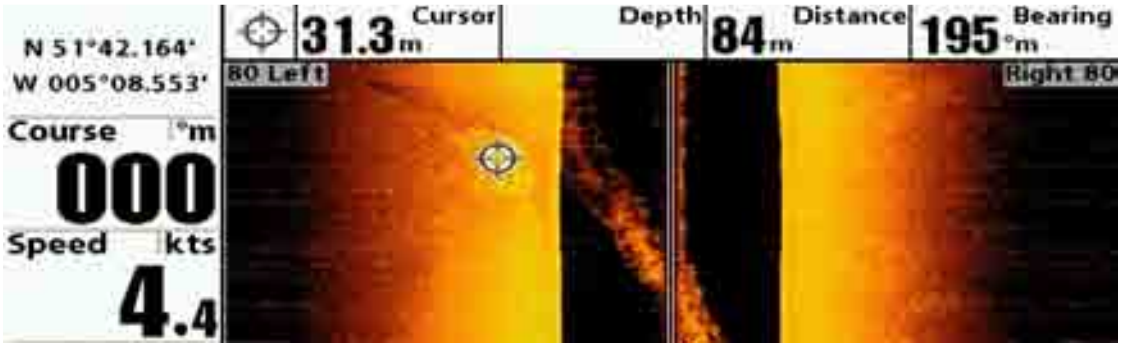
History
The *Caroline* was a requisitioned Dutch steam trawler which was temporarily seconded as a minesweeper during WW2. Whilst sweeping in 70ft of water a mine exploded under the vessel and split it in two.

HMS Pilot Vessel No. 10

Research and location of Site
Searching coordinates found on www.wrecksite.eu we saw a small anomaly and initially thought it too insignificant to be the Pilot Vessel. Later, we returned to it to have another look and dive on it after surveying the *Thor* which, at 20m, shows only a very small image on the sonar. We found it was indeed a wreck albeit very flattened and broken up.

GPS coordinates
51° 42.164' N, 005° 08.553' W

Side Scan Sonar Image



The small anomaly is under the cross hairs mark and was all we could see of the vessel.

The Dive
Depth: 20m

The wreck is very broken and mangled sitting in silt. There are small pieces of china and debris which indicates it has been dived very little as it has not been pilfered. There is a large admiralty anchor lying nearby which is unlikely to be associated with the wreckage.

Tides
Diveable at most states of tide during neaps

Statistics
- Sunk 1941
- Weight 281 Tons

History
Originally a pilot boat for transferring pilots onto larger boats to help navigate into Milford Haven. It was requisitioned during the war to be used as an examination vessel. This means it would have inspected the paperwork and cargoes of all shipping entering and leaving the port during wartime. It would probably have been equipped with machine guns. It sank when it detonated a mine; there were no lives lost.

The 'Paddle Steamer'

Research and Location of Site
We looked for this wreck on four occasions as we returned from Linney Head. However, despite searching the area of Chapel Rocks on each second dive, it remained elusive. It took us the whole year to find as it is in a rocky area so the side scan sonar does not pick it up. We have a local dive club to thank for us finally diving it, and it was the very last dive of the expedition.

When you land on the wreck there is a large 'paddle wheel' which is perfectly flattened against the bottom, hence the name given to the site. However, there are none of the associated boilers and drive shafts expected so we queried as to whether it really was a paddle steamer. Mark posted some video of the wreck site on YouTube and asked a forum of paddle steamer experts to comment resulting in a lot of great feedback. This lead us to conclude that it is probably not a paddle steamer. The 'paddle wheel' may possibly be a cable reel but there is nothing conclusive yet. We need to go back and dive it again.

There are three possible wrecks reported in this area:

- HMS *Minicoy*, 5 ton motor vessel sunk 1941
- MFV *Helene*, 145 ton fishing trawler sunk 1940
- *Four Winds*, a small fishing boat

None obviously fit the bill so more research and diving is needed to ascertain what wreck it could be.

GPS Coordinates
51° 40.849' N, 005° 08.376' W

The Dive
Depth: 17m

The wreck sits in a large 'bowl' of rock and is very broken up and concreted. There are still some small sections of the hull intact. The most striking part of the dive is the large flattened wheel which almost looks like a dart board.

Tides
Diveable at most states of tide during neaps.

Area 2: Linney Head

Linney Head, south of the Haven, is exposed to the Atlantic swell and is rarely dived by the club. This expedition to investigate sites and slack times has expanded the club's adventurous spirit and we have discovered two excellent dive sites, the *Kerloch* and the *St Jacques*. Another site we have spent many hours looking for but that still eludes us is the *Balholm* which hopefully we will find next year.

The Kerloch

Research and location of Site

We had been looking for the *Balholm* and, not finding it, decided not to miss the slack and instead dive Crow Rock. We were surveying with the side scan sonar while our first pairs of divers kitted up when we discovered some anomalies. The seabed is very rocky with sand holes and gullies and we were not sure what we had found so the second pair of divers went in to investigate. We found a brand new wreck of a small fishing boat, badly broken up, but obviously new with boots and jumpers scattered in the sand.

We reported the find to the coastguard who told us that the wreck was that of the *Kerloch* which had sunk two months earlier on 20 January 2010 after hitting Crow Rock in the dark. We completed a Receiver of Wreck report on the new find at the request of the coastguard.

There is quite a lot of

information on Google about this sinking plus the report on the official investigation into the sinking which also makes interesting reading.

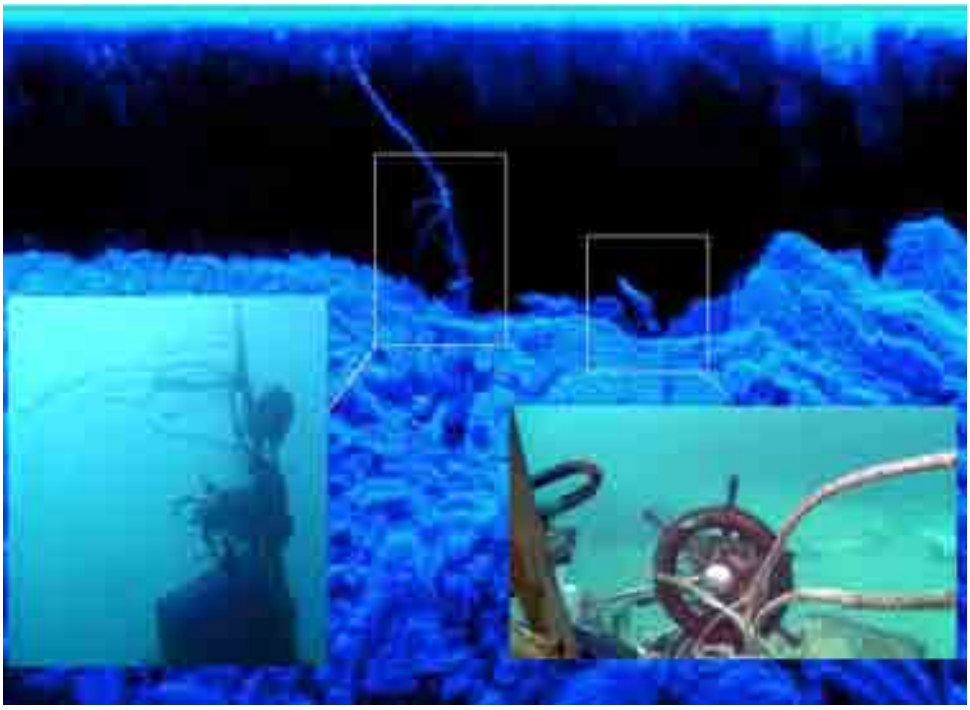
Mark took video of the site as the visibility was excellent and put it on YouTube where it has received a lot of interest (see appendix for web addresses).

DIVE magazine wrote an article on the find and BSAC also have links from their website to the video. The find has given quite a lot of publicity both for the club and the grant scheme.

GPS Coordinates

51° 36.726' N, 005° 03.235' W

Side Scan Sonar Image



In the sonar image you can see the ropes reaching to the surface. To the right of the rope on the side scan image you can just about distinguish wreckage in the dip which appears different to the solid-looking rocks.

The Dive

Depth: 18m

Scattered around a large sand hole are the remains of the *Kerloch*. Rope and fishing nets tangle with buoys and even a door as they reach to the surface. The hull has split open revealing the innards of the boat with the engine block covered with a white ooze as the chemicals react with the salt water. The brass propeller and the wheel are still attached amongst the debris and Wellington boots lie in the surrounding sand.

Tides
2hrs 40mins after HW; lasts 2 hrs

Statistics
- Built 1959 France
- Sunk 20 February 2010 when captain fell asleep at the wheel
- Weight 78 tons
- Modern fishing boat

History
A Jersey registered crabber was returning from Lundy with a full catch when the skipper went to sleep at the wheel and hit Crow Rock at 17:25. The four crew took to the life raft and the *Kerloch* sank within a few minutes.

The St Jacques

Research and Location of Site
We were given a number of coordinates by local divers and also took coordinates from the chart location but it still took a few surveys to find. We eventually found it in May, however, with tides and weather, we did not get an opportunity to dive it until October. It was well worth the wait though and was an excellent dive on which to end the year's expedition.

The *St Jacques* is on a sandy bottom but is quite low lying and, at 30m+, is very small on the side scan sonar. From the depth sounder it appears to have sections spread over quite a large area with some additional peaks which we have still to dive in order to find out what they are.

GPS Coordinates
51° 38.319' N, 005° 06.781' W (boilers)

51° 38.324' N, 005° 06.808' W (wreckage site)

Side Scan Sonar Image

The cross hairs are on the centre of the wreckage.

The Dive

Depth: 35m

Sitting on a sandy bottom, the large propeller sits upright attached to the drive shaft at the stern. You can follow the drive shaft easily all the way to what remains of the engine and three boilers. There is a spare propeller lying aft to starboard. Scattered amidships are pipes, which gave rise to its original name – the pipe wreck! We didn't get any further towards the bow on this dive and so need to return to dive the rest of it.

Tides

Much debate on tides at this site. We thought it should be 2 hrs after LW, but it actually appears to be 2 hrs before HW. We need to dive the area again to confirm the exact time and length of slack for different neaps.

Statistics

- Built 1909 in Dunkirk
- Sunk 1917
- Weight 2459 Tons
- 3 boilers with triple expansion engine

History

Whilst on passage from Barry to Bizerta the *St Jacques* was torpedoed by German submarine UC51 on the starboard side. It was abandoned by the crew and sank in 15 minutes.

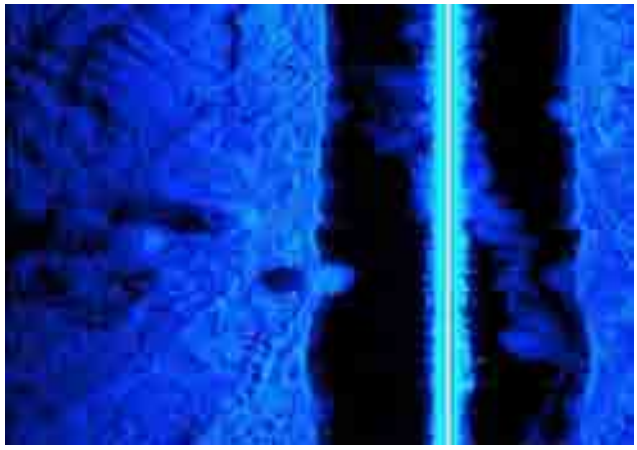
The Highland Holm, Balholm & Nicolau Virginia

These wrecks are mentioned in this section for completeness.

The *Highland Holm* was found a couple of years ago during an Advanced Diver expedition exercise and is a good wreck at 30m but is very tidal, as are all the wrecks in this area.

The *Balholm* we have looked for since last year and, in a small way, was the impetus for the expedition. It has been interesting to research the wreck and one day we hope to find it. The last piece of information we had was at the NEC Dive Show in October where one dive operator said they had dived it and had marks for it. We will continue looking next year.

The *Nicolau Virginia* we found on the last weekend but were unable to dive it due to the tide so that is another new wreck to dive next year. To the right is the side scan sonar image showing a clear picture of the boilers at 51° 36.500' N, 005° 00.270' W.



Area 3: St Bride's Bay

We searched for a number of wrecks in this area but sadly did not find them. The seabed is flat and silty but has been heavily dredged for scallops in the last few years. The wrecks may be covered in silt or be broken by the dredging or we may simply not have looked in the right place.

We will continue to look especially for the *Hematite* and the *White Plain* as we have a promise of more coordinates.

Area 4: Bishops & Clerks

The Bishops and Clerks is an area with notoriously unpredictable tides and races. We found four new sites. The *Langton Grange* and the *Glenisla* are good, interesting sites but be prepared for tide. The *Amazonense* and the *Baron Ardrossan* are great second dives as they are non-tidal.

The Langton Grange

Research and Location of Site

Although one of the members of the team had dived the *Langton Grange* many years previously, so it was not unknown to the club, the exact location and tidal information was not current so we included it in the expedition. It is set in an extremely tidal area out near North Bishop. The wreck site covers a huge area on Bell Rock, a submerged pinnacle on the northeast tip of North Bishop and we found it in 'boiling' water as the tide ripped though the area as we settled to wait for slack. There are reputed to be two or three wrecks on this site although distinguishing each on the side scan is not possible.

GPS Coordinates

51° 54.287' N, 005° 22.725' W

The Dive

Depth: 5-55m

We never got complete slack on the dive but we got the best of the day. The tide can be very unpredictable so we stayed close to the bottom and hid amongst the boilers and plates. The wreck is very broken and spread over a large area. We discovered an engine block and two boilers at about 14m and then explored the area. Going around the pinnacle, we discovered another set of boilers at 21m, which must be assumed to be another wreck. It is impossible to distinguish two different wrecks on a single short dive.

Tides

3 - 3.5 hrs after LW Milford Haven, but be prepared for some tide at all times.

Statistics

- Built 1896 Belfast
- Sunk 1906 when she hit Bell Rock in thick fog
- Weight 5852 tons
- Cargo Steamer

History

The *Langton Grange* was sailing from the Clyde to Newport, Gwent with ballast when in thick fog she hit Bell Rock. On impact she slid on top of the reef and stayed there for the next day when her huge weight made her bend and then split in the middle.

The Glenisla

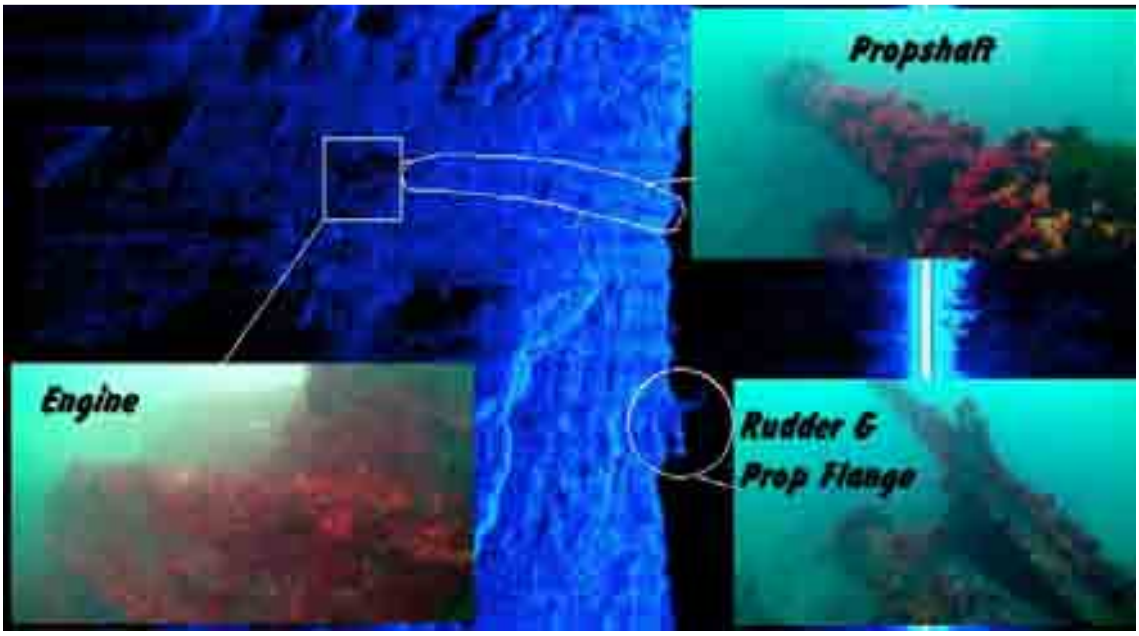
Research and Location of Site

The *Glenisla* is mentioned in an old guide book of Welsh shipwrecks published in 1987. We tried the transits but some of the marks no longer existed. The other description was 'about 30m east of Llechganol' which is a pinnacle of reef which breaks the surface at low water about half a mile offshore. The site is very rocky and so difficult to distinguish the wreck from the surrounding rock which slopes steadily down to around 30m. We put the shot in, waited for slack and sent in the divers. The second set of divers found the wreck site. We dived it again a few weeks later and marked the boilers and prop shaft with surface markers which enabled us to take a side scan sonar image, knowing exactly what we were looking for.

GPS Coordinates

51° 56.217' N, 005° 13.944' W

Side Scan Sonar Image



Due to the rocks surrounding the site it is difficult to identify the components. The above composite makes it much easier to identify the prop shaft engine and rudder.

The Dive

Depth: 17m

The engine is the shallowest point of the main wreckage and is easily recognisable with the cylinders exposed. A huge prop shaft disappears off towards the stern and to both sides lie large sections of hull plating. The rudder and large propeller with the blades sheared off sit off to the port side of the wreck site and are the deepest part of the wreck.

In the shallows on the other side of the engine are large sections of plates which become indistinguishable from the surrounding rock and kelp as you get shallower towards the top of the reef. The waves generally push you around in the shallows so it is wise to surface away from the pinnacle so the boat can pick you up without risking grounding!

Tides

3 – 3.5 hrs after LW Milford Haven, but be prepared for some tide at all times.

Statistics

- Built 1883 Newcastle
- Sunk 1886 hitting the reef in the dark due to an error in navigation
- Weight 1283 ton
- Cargo Steamship

History

The *Glenisla* was a cargo steamship carrying coal from Glasgow to Savona in Italy. The captain mistook the South Bishop light for a light off the Irish Coast. Thinking he was too close to the Irish coast he altered course in error heading straight for the Welsh coast. He hit the reef at full steam, all crew abandoned the ship and took to the life boats. When daylight came they were surprised to see how close to the Welsh coast they were.

The ship straddled the reef and soon broke its back in the waves and the heavy stern slipped down the reef beneath the sea.

The Amazonense & Baron Ardrossan

Research and location of Site

The *Amazonense* and the *Baron Ardrossan* are both mentioned in an old wreck guide of West Wales. They are both shallow second dive sites set in bays. They were both quite easy to find and so are included together in this section of the expedition report

GPS Coordinates

Amazonense: 51° 54.778’ N, 005° 16.887’ W

Baron Ardrossan: 51° 56.925’ N, 005° 11.746’ W

The Dive

Amazonense: 17m at deepest part. The *Amazonense* has a huge propeller complete with rudder stock marking the deepest part of the site. Follow the propeller shaft up to the shallows with hull plates scattered either side until the wreck layout disintegrates in the shallows amongst the kelp.

Baron Ardrossan: 15m at deepest part. This is very spread out around the bay but there is still a boiler intact amongst the hull plates.

Tides

Both sites are in bays sheltered from the tide. There is a chance of tide on the propeller of the *Amazonense* as it protrudes out from the bay but we have not experienced tide during a dive.

Statistics

Amazonense

- Built 1879 Southampton
- Sunk 1881 in thick fog
- Weight 1791 ton
- Cargo Steamship

Baron Ardrossan

- Built 1881 Whitby
- Sunk 1898 in thick fog
- Weight 1451 ton
- Cargo Steamship

History

Amazonense was only two years old when in thick fog she crashed into the headland. The captain had relied on a compass that had not been corrected for the iron hull so the ship was severely off course. The subsequent investigation also deemed she was travelling too fast for the fog.

The *Baron Ardrossan* left Glasgow with a cargo of coal bound for St Malo. They ran into thick fog at night and although they slowed down, they were on a wrong heading and ran straight into a bay near Porthgain. The grounding was so slow that apparently it did not wake the sleeping crew.

Conclusion

This expedition has really inspired the members of the club. Not only the members of the expedition, who researched, surveyed and explored new sites, but also the less experienced members who shared the excitement of new wreck finds by diving them in the following weeks. It has also expanded contacts with other clubs and divers as we shared GPS coordinates and dive sites.

The team on the last day of the expedition

Appendix

DIVE Magazine Article

Cardiff BSAC find wreck

08/10/10

The club was trying to find the location of another wreck – a passenger ferry, MV *Balholm* – using a new side-scan sonar off the coast of Pembrokeshire. Club members weren't able to find *Balholm*, but did notice something unusual on the seabed at Crow Rock near Linney Head.

When they dived there, they found the wreck of a fishing boat called *Kerloch*. 'It had only been there a couple of months and the wreck looked brand new,' said diving officer Mark Gosling. 'We were all very excited.'

They reported their find to the coastguard, who asked them to notify the Marine Accident Investigation Branch as the wreck was so recent – the boat had sunk in February this year. They later returned, with a video camera, to film the wreck. 'It's pretty bashed up,' said Gosling. 'It's in a very tidal area – it absolutely rips through there and looks like you're in a river.'

The wooden-hulled boat, which has a fibreglass and aluminium superstructure, lies in 15m of water and is 17m long. Gosling says it does not have much fish life yet and, because of its location, is likely be damaged by south-westerly winter storms. The club plans to keep an eye on it though, and dive it whenever they get the chance.

The club received a BSAC expedition grant of £1,000 this year to survey the wrecks in Milford Haven Waterway, to the south of the Waterway and in St Bride's Bay. The *Kerloch* was a chance find while they were completing their expedition.

Cardiff BSAC Internet postings

Kerloch

YouTube Video
http://www.youtube.com/watch?v=EkyCruPlzfs&feature=mfu_in_order&list=UL

'Paddle Steamer'

YouTube video
http://www.youtube.com/watch?v=cr1jEX-KLiE&feature=mfu_in_order&list=UL

Paddle Ducks Forum discussion
http://www.paddleducks.co.uk/smf/index.php?topic=5376.0

Side Scan Sonar General Information

Yorkshire Divers posting of side scan images and sites
http://www.yorkshire-divers.com/forums/content/190-side-scan-sonar-images-some-wrecks-around-milford-haven.html

Kerloch articles

News reports

http://www.westerntelegraph.co.uk

http://www.trawlerpictures.net/index.php?topic=3622.0

http://www.milfordmercury.co.uk/news/8438144.Fishing_boat_sank_after_skipper_fell_asleep/

Kerloch *Incident Report*

http://www.maib.gov.uk/cms_resources.cfm?file=/Kerloch_Report.pdf

Risk Assessments

1. Travel To and From Dive Site (and assessment of site) – Risk: Medium

- Allow plenty of time for travel to site.
- Towing of RIB – ensure that driver has experience of towing and hazards and regulations pertaining to towing.
- Ensure that site being used to prepare boat is free from any obstructions or point out any obvious trip/slip hazards.
- Ensure that those preparing the boat and equipment do so in a safe manner, as some items (e.g. kit) will need lifting into the RIB.
- Ensure that those helping launch boat are aware of any hazards, such as the slip being slippery and that they are aware of trailer's position when boat being launched/retrieved.
- Plan to be radioed to the coastguard on departure and if there are any changes in plan during the day then final check-in at the end of the day.
- Ensure that all drivers take care particularly on way home after diving during the day. Suggest that in the event of being tired they stop for a rest/break.

2. Divers: Medical History/Injury – Risk: High

- All divers should be fit and healthy to dive and have either completed self declaration form or have received and passed medical from Medical Referee.
- Injuries sustained during diving i.e. ear damage, mask squeeze, injury from kit (such as falling cylinders) – these should be low risk given experience level of divers for this expedition. All of the expedition members have had some formal training in First Aid. Any divers with problems should in the first instance be assisted by buddies.
- Running out of air. All SCUBA sets should be fitted with accurate cylinder pressure gauges. Given nature of the expedition, all divers should be asked to check their air regularly – as they may become distracted by tasks in hand. All divers should be diving in buddy pairs and in the event of an out of air situation use the buddy's alternative supply to make a safe ascent to surface.
- Decompression Illness. All dives should be planned and conducted in accordance with BSAC '88 tables or decompression computer. In the event of diver(s) exhibiting symptoms, or having had a fast ascent, the diver(s) should be administered oxygen, or failing that, Nitrox if available (strongest mix first).
- Contact with dive boat/propeller. Only trained cox'ns should be allowed to operate the RIB. All divers should be made aware of any entry/exit techniques and all such exits/entries should be controlled by cox'n.
- Injury from other boats. The Alpha Flag should be flown whilst divers are underwater. Surface traffic should be monitored by boat cover. Divers should be marked by DSMB's whilst surfacing if not ascending using the shot.
- Diver distress. The boat carries a VHF radio to contact the emergency services and an O_2 kit. All core members of the project are qualified boat handlers/coxswains, O_2

qualified, have a level of first aid training and hold VHF certificates. Diver recall mechanism available (e.g. signals via SMB line, Thunderflashes).

3. Diving Incidents – Risk: High

- Entanglement in nets/line/underwater obstruction. High possibility on new undived sites. All divers must carry appropriate cutting implements such as filament line cutters, wire snips, diving knife, etc. Assistance should be given by buddies where possible.
- Reduced underwater visibility. Strobes and buddy lines to be used in the event of the onset of reduced visibility. Dive to be abandoned in the event of adverse reduced visibility. Divers to surface and exit. Dive Manager to abort diving.
- Separation from boat (i.e. drifting). All dive pairs to carry DSMB's to be deployed at first sign of current.

4 Diver Separation – Risk: High

- All divers will be required to carry DSMBs and a torch. Look for buddy for 1 minute then surface to locate the missing diver.

5 Deteriorating Weather Conditions – Risk: High

- Planning to include latest weather information, then to be continuously monitored by Dive Manager and cox'n.
- Diving cancelled by Dive Manager. Diving in progress terminated using diver recall mechanism. Boat intentions and appropriate times notified to coastguard prior to departure. Update coastguard if plans are changed.

6 Boat Breakdown – Risk: High (if divers are in the water)

- The boat will always have a dedicated cox'n onboard. The Cardiff BSAC RIB carries an anchor, spare engine, spare fuel tank and a VHF radio. In the event of the main engine breaking down the spare engine can be started and the fuel line can be detached from the main fuel tank and attached to the spare fuel tank quickly and easily.
- If the boat is drifting while the spare engine is being started the cox'n can immediately deploy the anchor to maintain position on site.
- If there are any problems with the spare engine or if the boat is at a remote site, the coastguard can be contacted via radio for assistance.

7 Non-diving Search Days – Risk: Medium

- Fewer members of the team will be available to help with the boat, so planning for launch and retrieval times in relation to tidal height is more important.

- Minimum of two members on board at all times during search days and plan to be logged with coastguard and other team members.
- Life jackets are to be worn at all times by the cox'n and crew during search days.

Dive Statistics

Date	Site	Rhian		Andy		Mark		Adrian		Teresa		Anne		Steve		Brian		Kas	
		Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time
10/04/2010	*Caroline*	14	25	15	25	15	26	15	26			15	30	16	30				
10/04/2010	Pilot Boat	19	22	20	22	19	34	19	34			20	35	20	35				
11/04/2010	Barge/Landing Craft	12	25	13	25							11	31	12	31				
11/04/2010	Chapel Rocks					15	23	15	24										
11/04/2010	Crow Rock											19	34	20	35				
11/04/2010	*Kerloch*	16	27	16	27	17	29	17	29										
23/05/2010	*Kerloch*	17	33	17	33	16	38			17	38	16	39	16	39				
23/05/2010	*Caroline*	18	27	19	27							19	28	19	28				
23/05/2010	Landing Craft					16	24			15	24								
05/06/2010	*Langton Grange*	20	26	21	26							25	29	25	29				
05/06/2010	North Bishop					25	30			26	30								

Date	Site	Rhian		Andy		Mark		Adrian		Teresa		Anne		Steve		Brian		Kas	
		Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time
05/06/2010	*Amazonense*	16	35	17	35	18	25			17	25	17	42	18	43				
06/06/2010	*Glenisla*	16	31	17	31	17	38			18	38	17	37	17	36				
06/06/2010	*Baron Ardrossan*	15	32	15	32	13	33			14	33	12	39	13	39				
24/07/2010	*Glenisla*	17	34	17	34			18	26			17	26	17	26	17	26		
24/07/2010	*Baron Ardrossan*	10	37	11	37			12	32			12	32	12	32	12	32		
25/07/2010	Pilot Boat	16	34	17	34			17	32			17	32	18	32	18	32		
25/07/2010	*Behar*	15	27	15	27			16	35			16	35	16	35	16	35		
04/09/2010	*Lucy*					37	24									36	24		
16/10/2010	*St Jacques*					36	25					34	25	36	41			37	41
16/10/2010	Chapel Rocks					17	29					17	28						
17/10/2010	*St Jacques*	35	27			36	35			36	27	34	34	35	25			35	25
17/10/2010	Paddle Steamer	17	31			17	32			18	31	17	30	16	32			16	32

Costings

	April	May	June	July	Sept	Oct
Boat fuel (see receipts in blue)	100	72	97	90	34	63
Towing fuel (see receipts in blue)	40	40	40	40	68	74
B&B (£25 per night per diver)	300		300	300		300
Food (£10 per diver per night)	120		120	120		120
Air (£5 per dive)	120	60	120	120	10	120
Total cost per weekend	**680**	**172**	**677**	**670**	**112**	**677**

Side Scan Sonar - Cost £1974.76

Charts for side scan -Cost £179.95