

Forgotten Wrecks
of the
First World War



April
2018

SM UB-21

Site Report



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MAT staff involved in the recording: Jan Gillespie, Christin Heamagi, Jose-Oscar Encuentra.

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ii Copyright Statement

This report has been produced by the MAT with the assistance of funding provided by the Heritage Lottery Fund through their Heritage Grants Programme. Unless otherwise stated all images are copyright of the MAT.

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1. Project Background

Forgotten Wrecks of the First World War is a Heritage Lottery Funded project which is dedicated to raising the profile of a currently under-represented aspect of the First World War. While attention is often focused on the Western Front and major naval battles like Jutland, historic remains from the war lie, largely forgotten, in and around our seas, rivers and estuaries.

With over 1,100 wartime wrecks along England's south coast alone, the conflict has left a rich heritage legacy and many associated stories of bravery and sacrifice. These underwater memorials represent the vestiges of a vital, yet little known, struggle that took place on a daily basis, just off our shores.

The study and promotion of these archaeological sites presents a unique opportunity to better interpret them and improve physical and virtual access.

The project focuses on underwater and coastal sites between Kent and Cornwall, which include merchant and naval ships, passenger, troop and hospital ships, U-boats, ports, wharfs, buildings and foreshore hulks. These sites, under water and on the foreshore, have been degrading and deteriorating due to natural and human processes for approximately 100 years and, as a result, are extremely fragile. In many cases, this project represents a final opportunity to record what remains on the seabed and foreshore before it is lost forever.

The project aims to characterise the nature and extent of the maritime First World War archaeological resource surviving on the south coast's seabed and around the coast. This will enable an understanding of maritime activity just off our shores during the conflict and provide a window onto some of the surviving sites. While it will not be possible to visit and record all c.1,100 vessels dating to the First World War, lost off the south coast of England, a representative sample of sites have been selected for more detailed study, analysis and interpretation.

This report collates information collected during the Forgotten Wrecks project, relating to one of the south coast's First World War wrecks, namely that of UB-21. The report constitutes one of the project outputs and will be lodged with the Archaeological Data Service, ensuring free public access beyond the life of the project.

2. Methodology

General detail on the methodologies employed during the project are outlined within the *Forgotten Wrecks of the First World War: Project Methodology Report*. This report section concentrates on approaches and resources relating to UB-21.

2.1 Desk Based Research

2.1.1 Online Information/Sources

The wreck of UB-21 is listed in the National Record of the Historic Environment (NRHE), Monument Number: 805579, NMR Number: SZ 69 SE 108 (Pastscape: UB 21). There is a second listing, which outlines confusion surrounding a U-boat wreck under Bailey's Brow, near Cuckmere, East Sussex which has been variously identified as U-121, UB-121 and UB-21 (Pastscape: Monument No. 903630).

UB-21 is described on Pastscape as the "*Remains of the 1920 wreck of a German Submarine which foundered 3 nautical miles south of Eastney Point, while under tow to be broken up for scrap*" and includes detail of a range of activity on and relating to the site from 15 October 1921 to 3 July 2013.

The Wrecksite.eu record for UB-21 says that it is widely reported as having been sunk off the east coast of England but that it foundered in the Solent. It gives the date of loss as 1 January 1920. Associated images include one of the U-boats wrecked at Bailey's Brow. Further information is provided by Carl Racey about UB-21's career.

Uboat.net reports that UB-21 was surrendered and that it sank off the English east coast on the way to being broken up in 1920. Dates, technical details, career details, Commanders and a list of patrols are also given, along with a list of ships sunk and damaged by the U-boat.

The Wikipedia entry for UB-21 uses Guðmundur (U-boat.net), Gröner (1991) and Rössler (1979) as sources and in relation to the fate of the U-boat, links to a webpage about the Bailey's Brow U-boat wreck.

Pastscape:	http://www.pastscape.org.uk/hob.aspx?hob_id=805579
Pastscape	http://www.pastscape.org.uk/hob.aspx?hob_id=903630
Wrecksite EU:	http://www.wrecksite.eu/wreck.aspx?78879
Wikipedia:	https://en.wikipedia.org/wiki/SM_UB-21
Uboat.net	http://www.uboat.net/wwi/boats/index.html?boat=UB+21

2.1.2 Records at The National Archives

A number of documents held at The National Archives (TNA), Kew were consulted for information likely to be helpful in confirming (or otherwise) the identity of the wreck believed to be UB-21. Of particular interest were a number of memos and reports relating to the disposal of German submarines in the years after the war (see Section 3.2).

2.1.3 Other Historical Sources

Technical detail and identifiable characteristics for UB-21 were derived from Rössler (2001) and uboat.net and information about UB-21's patrols and Commanders was gleaned from uboat.net, wrecksite.eu and Young & Armstrong (2009).

2.2 Associated Artefacts

While the Forgotten Wrecks project had a non-recovery policy, where possible, the project aimed to 'virtually reunite' artefacts historically recovered from the Forgotten Wrecks by recording them and linking them to the vessel record. Four artefacts recovered from the wreck site in 2011 were sketched and measured and 43 are listed on Pastscape as having been recovered from the wreck site and reported to the Receiver of Wreck (see Section 5).

2.3 Site Visit/Fieldwork

Forgotten Wrecks diving from the dive boat *Wight Spirit* took place on the wreck of UB-21 on 15 July 2015 and 13 July 2016.

Initial dives aimed to assess the nature and extent of the site which it was thought may have been affected by the storms of 2013/14 which caused significant sediment movement in the area.

A total of 8 divers (4 professional divers from MAT and 4 volunteers) undertook a total of 191 minutes diving on the wreck over two days. The dive team used self-contained breathing apparatus (SCUBA).

Visibility was in the region of 3m during the 2015 dive and 2m during the 2016 dive.

The Forgotten Wrecks project also enabled a review of photographs, video and dive logs from dives on the wreck in June 2011 when diving conditions and visibility were significantly better to those encountered in 2015 and 2016.

3. Vessel Biography: UB-21

UB-21 (Figure 1) was chosen as one of the Forgotten Wrecks case study sites as an example of a highly degraded, broken up and shallow U-boat wreck. There is confusion surrounding its fate, with a number of historical records stating that it was sunk off the east coast following its surrender in November 1918, some believing it to be the U-boat wrecked at Bailey's Brow, East Sussex and others

saying it sank in the Solent while being towed for scrapping. Work undertaken through the MAT's HLF Forgotten Wreck project aimed to clarify the situation.

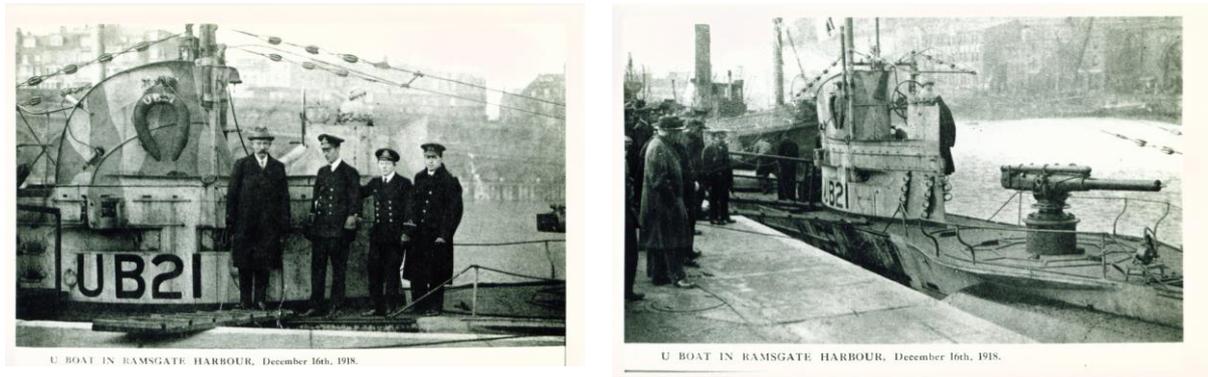


Figure 1: UB-21 in Ramsgate Harbour, December 16th, 1918

Image courtesy of Michael's Bookshop, Ramsgate, Kent

3.1 Vessel Type and Build

UB-21 was a Type UB II coastal torpedo submarine built at the Blohm & Voss shipyard in Hamburg and commissioned on 18 February 1915. Thirty Type UBII submarines were built (UB-18 to UB-47). With a length of 36.1m, a beam of 4.4m and a draught of 3.7m the vessel was powered by two 142 hp diesel engines and had two 140 hp electric engines.

Type UB II U-boats had a maximum speed of 9.2 knots on the surface and 5.8 knots submerged. They had two periscopes and forward and aft hydroplanes. The two bow torpedo tubes were mounted one above the other and they carried four 50cm torpedoes. UB IIs were typically mounted with a 5cm gun (Rössler, E. 2001: 50 – 51, 332).

3.2 First World War use & loss

UB-21 was built specifically for the First World War, ordered on 30 April 1915, launched on 26 September 1915 and commissioned on 18 February 1916. The submarine undertook 26 patrols under four commanders:

- Kptlt. Ernst Hashagen (20 February 1916 – 26 November 1916)
- Oblt. Franz Walther (27 November 1916 – 9 September 1917)
- Oblt. Walter Scheffler (10 September 1917 – 28 April 1918)
- Bruno Mahn (29 April 1918 – 7 October 1918)

A UB II type submarine would typically have had a crew of 21 men and two officers (Wikipedia/Gröner). Initially UB-21 was with the I Flotilla, switching to II Flotilla (1 February 1917 to 10 September 1917), then V Flotilla (10 September 1917 to 29 April 1918) before returning to I Flotilla (29 April to 7 October 1918), finally serving with the training Flotilla (from 7 October 1918) (uboat.net).

On 19 July 1917, UB-21, under Franz Walther, landed two men on British shores south of Robin Hood's Bay. They were towed on a raft to wade ashore, intent on sabotaging an industrial railway near Whitby. The men got lost and were captured, claiming that they were stranded on the conning tower of the U-boat when it submerged, presumably to avoid being shot as spies. When the men had failed to return, UB-21 continued its journey three days later (Young & Armstrong 2009: 100).

Nearly two months later, on 4 September 1917 “a hostile submarine appeared off Scarborough about 6.45pm ...and fired 30 rounds, of which about half fell on land” it was reported that the bombardment lasted for 10 minutes, five people were injured and three killed, including a 64 year old cabinet maker, Thomas Pickup and 39 year old Mrs Elizabeth Scott (The Edinburgh Evening News 1917). The U-boat in question was UB-21 (Young & Armstrong 2009: 101) under Walther.

Following the surrender of UB-21 at Harwich in November 1918, it is mentioned in a memo dated 19 February 1919 as being one of six U-boats at Portsmouth and “available”, not being on the “sale list” or “allocated to other countries”. A draft agreement in the same folio states that “The demolition of the vessels which have been handed over to the Allied and Associated powers for the purpose of propaganda shall commence not later than 31 October (1919)” (TNA, ADM 1/8558/132).

In a memo dated October 1919, UB-21 is referred to again, this time as being one of a group of U-boats “earmarked for British experiments” (TNA, ADM 1/8576/337) and the detail of these experiments can be found in a bound volume at The National Archives entitled *Progress in Gunnery Material, 1921* (TNA, ADM 186/251).

Firing trials took place on UB-21 on 20 September 1920 (Figure 2). The firing ship was HMS *Terror* and the trials took place on the “Horse Tail Bank” off Portsmouth. UB-21 was on an even keel at the start of the trials and HMS *Terror* fired, using a range of guns and shells, from a range of 300 yards (274m). Eventually UB-21 sank “as a result of the damage caused to her pressure hull”. The report includes photographs and target diagrams and the following detail relating to UB-21: The conning tower of UB-21 consisted of a single thickness of 2cm. The pressure hull was 1.25cm thick. The superstructure contained “a considerable number of obstructions such as air flasks, exhaust pipes, etc.”. It also records specific detail relating to the damage sustained by UB-21 during the trials, including the fact that the periscope was “flattened to half its diameter but not perforated” and a “Hole in pressure hull 2ft by 1ft, centre of hole being 1ft 6in. to port of centre line” (TNA, ADM 186/251).



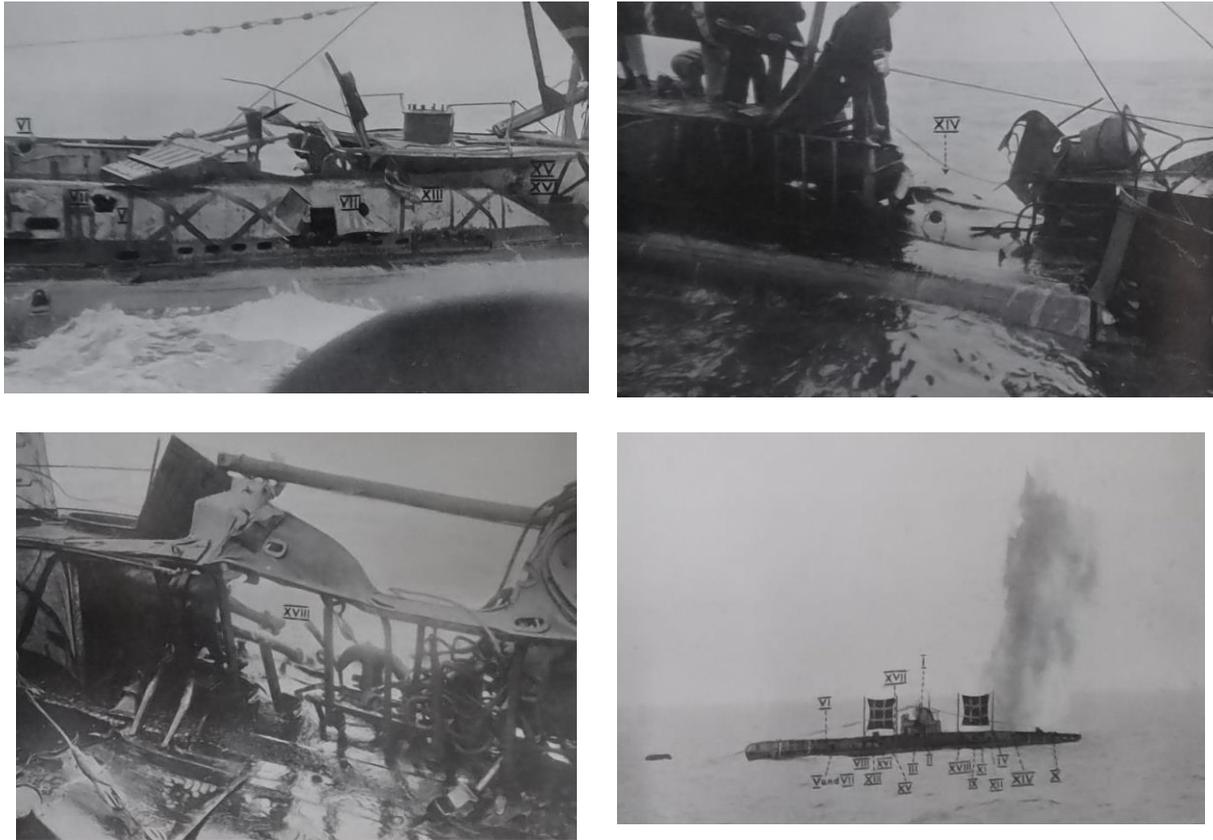


Figure 2: UB-21 during gunnery tests in 1920

Image courtesy The National Archives (ADM 186/251: Fig 15 – 20)

3.3 Vessels associated with the UB-21

In total 33 ships were sunk by UB-21 (total of 36,764 tons), in addition to one being damaged and four being taken as prizes (Figure 3). None of UB-21's victims were in the Forgotten Wrecks project area, with the U-boat operating in the North Sea, off the Yorkshire coast (Uboat.net).



Figure 3: Map showing ships hit by UB-21 (Image courtesy of uboat.net)

Silent Warriors: Submarine Wrecks of the United Kingdom Volume 2, provides extensive detail of the ships sunk and damaged by UB-21, including the names of some of those who died (Young & Armstrong 2009: 96 – 106). See Section 8.1 for list of vessels attacked by UB-21.

3.4 People Associated with UB-21

UB-21's first commander, Ernst Hashagen also commanded U-62 (30 December 1916 to 24 December 1917 and 10 March 1918 to 11 November 1918) and was a recipient of the Royal House Order of Hohenzollern, a title that was awarded to a total of only approximately 320 naval officers during the First World War (<https://uboat.net/wwi/men/decorations/5.html>). Between the wars he published a book, *U-Boot Westwärts*, about his experiences as a U-boat commander in the First World War. In addition to this publication, he is famed for what became known as 'The Hashagen Affair' of 1932. Hashagen had been due to contribute to a BBC radio programme called 'Hazard', talking about his time as a U-boat commander in the war, but the first programme in the series, featuring Zeppelin commander Joachim Briehaupt, resulted in protests from the British Empire Union and the Cabinet. The Hashagen broadcast was cancelled due to pressure from the aforementioned, despite objections from press, MPs and the chairman of the BBC (BBC). Hashagen went on to serve in the Second World War but was said to have been "*privately repelled by the later Nazi regime*", he died in 1947 (Young & Armstrong 2009: 96).

On leaving UB-21, its second commander, Franz Walther took command of UB-75 which was mined off Scarborough on 10 December 1917, with all hands lost. The submarine's third commander, Walter Scheffler, met a similar fate, commanding UB-127 from 1 June 1918 until 10 September 1918 when it was lost with all hands, possibly mined south of Fair Isle (uboat.net).

Bruno Mahn was commander of UB-21 in the final months of the war. Mahn went on to serve in the Second World War, becoming one of the oldest U-boat commanders when, in August 1942, he commanded UD-5 at the age of 55 years (uboat.net). He died in February 1961.

3.5 Post-loss Activity

Pastscape records that on 15 October 1921 the wreck of UB-21 was demolished and a "*sweep carried out to a depth of 8 to 10 feet at low water, no obstruction found*" and on 9 December 1921 the least depth over the wreck is recorded as 11ft (3.4m). Some 30 years later, on 12 March 1951 the wreck appears to be standing approximately 1.2m proud of the seabed and must be relatively intact as it is described as being 75ft (23m) long and lying at an angle of 030/210 degrees. The wreck was inspected again in 1960 and in 1970 is described as "*very broken up with wreckage spread over a 100ft (30m) wide area and standing about 6ft (1.8m) above the seabed in some places*". The wreckage is reported as having been sold to RJ Todd of Buckland, Portsmouth on 17 July 1970 and in 1978 was again reported as being "*Well dispersed and silted up, mostly flat on the seabed, highest part stands 6ft (1.8m), isolated pieces of twisted plating*". The most recent assessment of the site listed on Pastscape was on 21 October 2015 when the wreck is described as: "*Least M/B depth 4.4m in general depth of 6m. No scour. Length 28.1m Width 6.7m. Height 1.6m. The wreck lies at 085/265 degrees. Moderate magnetic anomaly. The wreck is very broken up, and parts of the wreck are dispersed around the site*" (Pastscape: UB 21).

4. Seabed Remains

4.1 Site Location and Environment

The wreck of UB-21 lies in the region of Horse Tail Sands in the eastern Solent, approximately 3 miles south of Eastney, Portsmouth, position: 50 44.15N, 001 01.31W (Figure 4).

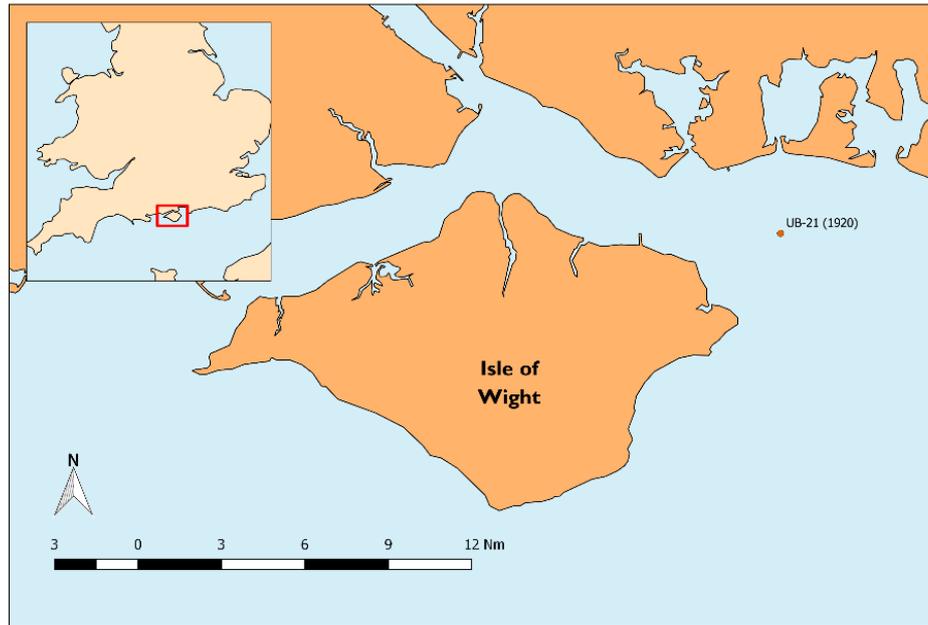


Figure 4: Location of UB-21 wreck

The wreck is at a depth of 4 – 10m on a sand and gravel seabed with encrusted pink algae. Flora and fauna is abundant with large-fronded kelp (*Laminaria hyperborea*), red/green/brown algae including: *Dictyota*, *Dulse* and Irish moss. Red sea squirt (*Halocynthia papillosa*), small Plumose Anemone (*Metridium* spp.), Bottlebrush hydroid (*Thuiaria thuja*) and Hornwrack (*Flustra foliacea*) are to be found across the site. Fauna includes large numbers of common starfish (*Asterias rubens*) and Ballan Wrasse (*Labrus bergylta*) (Guy Crofts).

4.2 Archaeological Methodology

Forgotten Wrecks archaeological work on the wreck of UB-21 included:

- Determining if the storms of 2013/14 had exposed parts of the wreckage that was previously buried because of significant sediment movement in this area.
- Locating the main area of the site.
- Refining the position for the site.
- Visual survey of the extent and nature of the scattered remains.
- Gather photographic and video survey of surviving remains.
- Undertake measured recording where appropriate.
- Assess dive logs, photography and video from 2011 and compare with more recent findings.

4.3 Description of Surviving Vessel Remains

As previously reported (and to be expected in light of the gunnery trials in 1920 and demolition work on the wreck in 1921) the remains of UB-21 are extremely dispersed, with little in the way of identifiable features. The highest part of the wreck stands approximately 3m proud of the seabed. One section of what appears to be relatively coherent outer-hull structure remains (Figure 5).



Figure 5: Extant section of hull (2016)

A section of possible drive shaft (Figure 6 & 8), approximately 2.1m in length, with a diameter between 0.19 and 0.25m can be found lying on the seabed, in an approximately NW/SE orientation. The end is shaped like a cog with teeth (Figure 7).

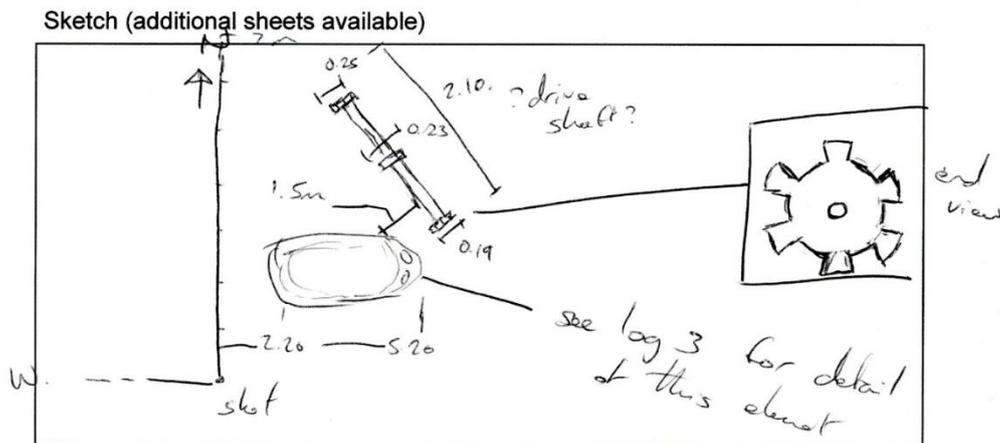


Figure 6: Diver's measured sketch (2011) showing possible drive shaft



Figure 7: SE end of possible drive shaft (2011)



Figure 8: Possible drive shaft (with modern rope snagged) (2011)

Other unidentified features include:



Figure 9: Perforated metal sheeting, possible hatchway surround (2011)



Figure 10: Wooden planking (2011)



Figure 11: Unidentified structure with fittings (2011)



Figure 12: Twisted and broken lead piping (2011)

While all of the above are in keeping with elements visible in the photographs of the gunnery trials (Figure 2), none can be specifically identified.

A possible propeller lies to the north east of the dispersed wreck site. Figure 13 shows a measured sketch of this (along with a number of unidentified features) produced in 2011. The same feature was reported in 2015 and in both instances was reported as having two blades. Measurements taken in 2011 indicate an approximate diameter of 2.5m. The two propellers on a UB II type submarine would have been 3-bladed, with a diameter of 1.15m (Michael Lowrey pers. comm.), so it is unlikely that this is one of the main propellers from UB-21.

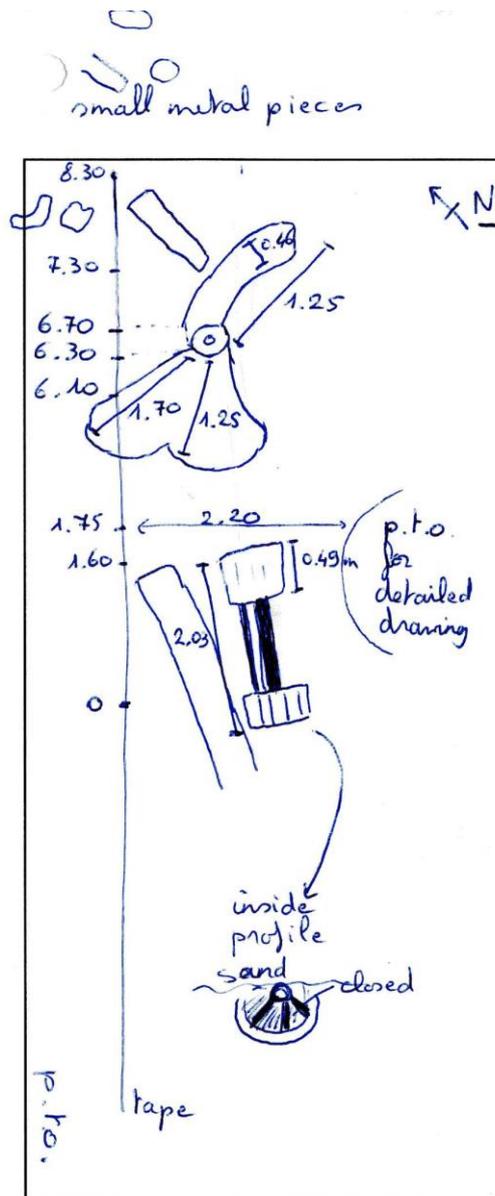


Figure 13: Measured sketch (2011) showing possible propeller and unidentified features

The unidentified feature seen in the centre of Figure 13 (measured sketch from 2011), can also be seen in the photograph taken in 2016 (Figure 14).



Figure 14: Unidentified feature photographed in 2016

The circular feature shown in Figure 13 at an offset of 2.2m from the baseline, is shown in Figure 15 and could be a dished hatch cover.

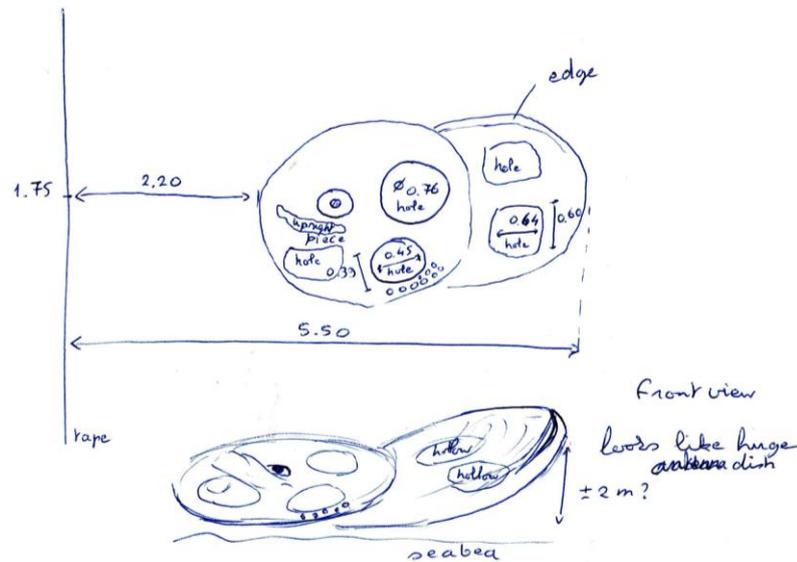


Figure 15: Circular feature, possible hatch cover (2011)

In 2011 a metal box (Figure 15) was observed on the wreck site but this was not seen during the 2015 and 2016 dives. The function and purpose of this box has not been identified.

Sketch (additional sheets available)

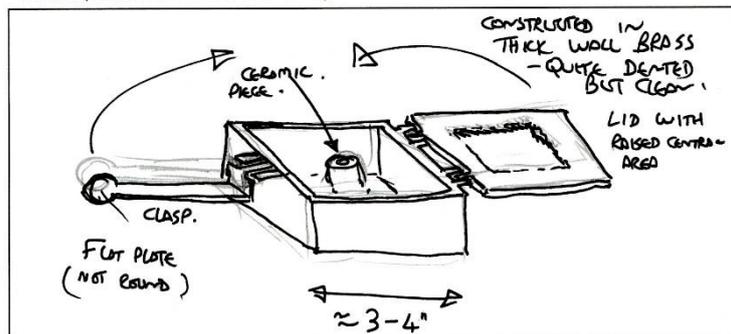


Figure 16: Metal box feature (2011)

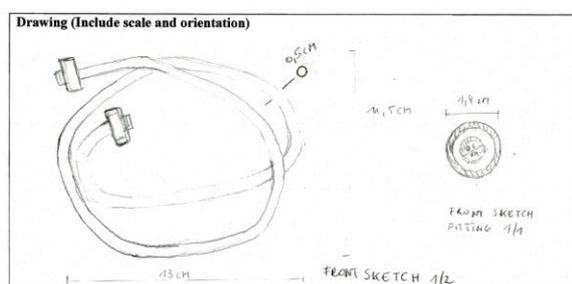
5. Recovered Artefacts

Objects recovered from UB-21 are held within a number of private collections. The RoW records provide detailed information for objects which were either reported during the 2000 Amnesty, or have been reported subsequently. There are other recovered objects which were brought up and reported to the RoW prior to 2000. As the records of that date were not digitised, they are not available. Hence, there are objects within public and private collections which have been reported, but have not shown up within easily available RoW records. However, it has been possible to identify the following artefacts recovered from the wreck of UB-21 and reported to the Receiver of Wreck:

Position	Recovered artefacts	Droit Number / Figure
50 44.23N 001 01.52W	2 battery parts	Droit A/2118
50 44.24N 001 01.55W	2 small items, possibly brass control arms	Droit A/386
None given (only UB-21 wreck)	39 items: 1) Part from torpedo engine, 2) Substantial fitting, 3) Vent, 4) Unknown, 5) Small AMP gauge, 6-9) Unknown fittings, 10) Battery hatch cover latch, 11) Greaser, 12) Torpedo engine control linkage strut, 13) Unknown, 14) Small hinge, 15) Broken name plate [sic], with the faint inscription 'Mundungsklappe', 16) Name plate with the inscription 'Mundungsklappe', 17) Broken battery hatch, 18-19) Unknown fittings, 20) Battery lid handle made of a Bakelite type material, 21-23) Unknown fittings, 24) Unknown gauge type with 'stb 41' written on the name plate, 25) Small valve or tap	Droit 405/09
50.44284, -1.01596	Copper tube; bent; screw cap fitting on each end; 5mm diameter; 14mm diameter caps	Figure 18
	Porcelain cylinder with copper wire in screw (diameter <1mm); broken at one end, hollow in middle; use unknown; 83mm x 35 mm	Figure 19
	Copper bolt; hex head; slightly bent screw; cylindrical ring at base of screw; 80mm x 40mm; diameter of screw 20mm	Figure 20
	Copper bar; 2 flattened ends with round rivets through each; flat for most of its length; 530mm x 5mm	Figure 21

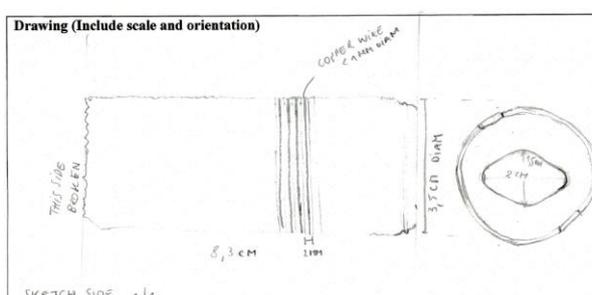
NB, Mündungsklappe translates as 'mouth flap'.

Four of the artefacts recovered in 2011 were measured and sketched (Figure 18 – 21).



Description
COPPER TUBE ; BENT ; AT EVERY END A FITTING OR BOLT.

Figure 17: Copper tube



Description
PORCELAIN CILINDER WITH COPPER WIRE IN SCREW (DIAM <1MM)
BROKEN AT ONE END ; HOLLOW IN THE MIDDLE (SEE DRAWING)

Figure 18: Porcelain cylinder

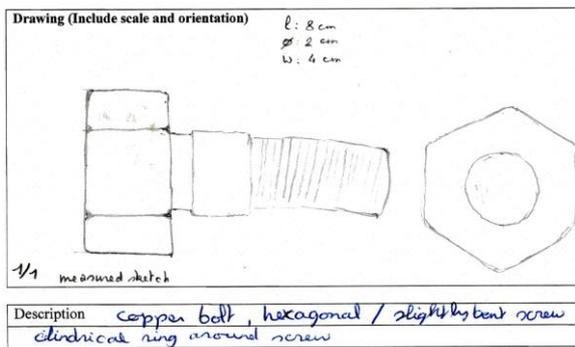


Figure 19: Copper bolt

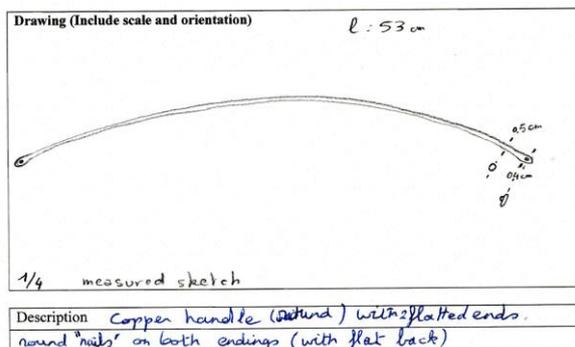


Figure 20: Copper bar/handle

Further study of the recovered artefacts from UB-21 could provide information on First World War submarine technology, fixtures, fittings and materials used. In addition, comparison of these artefacts with material from other wrecks could help with the identification of currently unidentified U-boat wrecks.

6. Site Significance & Potential Further Research

Seabed remains, combined with the historical evidence found in The National Archives leads to the conclusion that the remains at 50 44.15N, 001 01.31W are those of UB-21 sunk during gunnery trials on Horse Tail Sands, off Eastney, on 20 September 1920 and clears up any lingering doubts in relation to previous confusion (see Section 2.1.1) with U-121, UB-121 and UB-21 and the Bailey's Brow site (also ruling out UB-21 as the identity of that East Sussex U-boat wreck).

The highly scattered and dispersed nature of this wreck, as a result of the gunnery tests on the U-boat in 1920, demolition work on the wreck site in 1921 and subsequent sweeps, limits its potential for further research. However, further study of the U-boat's fixtures and fittings, which are scattered over and embedded in the seabed, could provide valuable information.

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8. Appendices

8.1 UB-21's attack record

Date	Commander	Name of ship	Tons	Nationality
5 May 1916	Ernst Hashagen	<i>Harald</i>	275	Swedish
20 October 1916	Ernst Hashagen	<i>Lekna</i>	204	Swedish
20 October 1916	Ernst Hashagen	<i>Randi</i>	467	Norwegian
20 October 1916	Ernst Hashagen	<i>Svartvik</i>	322	Swedish
21 October 1916	Ernst Hashagen	<i>Fritzøe</i> (prize)	641	Norwegian
21 October 1916	Ernst Hashagen	<i>Grønhaug</i>	667	Norwegian
22 October 1916	Ernst Hashagen	<i>London</i>	184	Danish
22 October 1916	Ernst Hashagen	<i>Thor</i>	372	Norwegian
3 November 1916	Ernst Hashagen	<i>Pluto</i> (prize)	1148	Norwegian
16 February 1917	Franz Walther	<i>Lady Ann</i>	1016	British
17 February 1917	Franz Walther	<i>Excel</i>	157	British
22 February 1917	Franz Walther	<i>John Miles</i>	687	British
29 March 1917	Franz Walther	<i>Bywell</i>	1522	British
31 March 1917	Franz Walther	<i>Norden</i> (prize)	776	Norwegian
29 April 1917	Franz Walther	<i>Victoria</i>	1620	British
2 May 1917	Franz Walther	<i>Rikard Noordrak</i>	1123	Norwegian
5 May 1917	Franz Walther	<i>Edith Cavell</i>	20	British
6 May 1917	Franz Walther	<i>Harold</i>	1679	Swedish
8 May 1917	Franz Walther	<i>Batavier li</i> (prize)	157	Dutch
6 June 1917	Franz Walther	<i>S. n.a. 2</i>	2294	French
7 June 1917	Franz Walther	<i>Sir Francis</i>	1991	British
20 July 1917	Franz Walther	<i>Trelyon</i>	3099	British
22 July 1917	Franz Walther	<i>Glow</i>	1141	British
23 July 1917	Franz Walther	<i>Vanland</i>	1285	Swedish
24 August 1917	Franz Walther	<i>Springhill</i>	1507	British
8 May 1918	Bruno Mahn	<i>Constantia</i>	772	British
10 May 1918	Bruno Mahn	<i>Anboto Mendi</i>	2114	Spanish
11 May 1918	Bruno Mahn	<i>Gothia</i>	1826	Swedish
12 May 1918	Bruno Mahn	<i>Haslingden</i>	1934	British
4 July 1918	Bruno Mahn	<i>Mentor</i>	539	Norwegian
26 September 1918	Bruno Mahn	<i>Paul</i>	659	Belgian

(Uboat.net)