

# Research Report

## Forgotten Wrecks of the First World War



**LOTTERY FUNDED**



LED BY **IWM**

During the Maritime Archaeology Trust's Heritage Lottery funded Forgotten Wrecks of the First World War project, scores of volunteers undertook online research into vessels that were lost off the south coast of England during the First World War.

Their findings were used to populate the project database and contributed to Site Reports. Both are publicly available via the Forgotten Wrecks website.

This Research Report was undertaken by one of our volunteers and represents many hours of hard and diligent work. We would like to take this opportunity to thank all our amazing volunteers.

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## **U-Boats in the Forgotten Wrecks project area (including information on U-90, UB-33, UB-81 and UC-51)**

The torpedo became a key weapon in naval warfare and has been described as the most effective undersea weapon, hard to defend against. In this article, project volunteer Roger Burns puts a spotlight on some of the U-boats lost in the Forgotten Wrecks project area during and immediately after the war.

Many of the c 1,100 First World War wrecks within the Forgotten Wrecks project area resulted from attacks by German U-boats, utilising torpedoes, mines, gunfire or, following capture, scuttling charges, although some succumbed to weather and collisions. A principal aim of the U-boat campaign was to deny island Britain of resources, starving its enemy into submission, and it should be remembered that U-boat Wolfpacks did not start in earnest until the Second World War. The seas around the British Isles were declared a war zone in 1915 by the German government and any ship found there on or after 18th February faced sinking without warning: unrestricted U-boat warfare began for the first time in history. A neutral flag was considered to be no guarantee of safety, being regarded as a common war deception. Not all theatres of war operated unrestricted warfare but that changed in February 1917 to total unrestricted action, accounting for the dramatic leap in the number of sinkings that year.

The National Archives have a document, ADM 137/2916 – 1915 to 1918 – covering many aspects of the U-boat menace as follows:

Trade Division Records: submarine menace.

Suggestions for preventing capture or sinking of merchant ships. Submarine attack in Irish and English Channel. Instructions for merchant ships regarding submarine attack. Proposed increased use of decoy ships.

Rewards and decorations to Officers and Men of the Mercantile Marine. Co-ordination of work of Merchant Ships Gratuity Committee and the Mercantile Marine Awards Committee, 1915-1918.

Ships claiming to have sunk or struck submarines, 1915.

Germany operated with five principal U-Boat Flotillas ([naval-history.net](http://naval-history.net)). The German-occupied Belgian coastal province of West-Flanders, utilising the harbours of Zeebrugge and Oostende which both had canals leading to the hinterland port of Bruges, gave the Germans the opportunity to create a submarine base at Bruges (Kaiserliches Marinekorps). This new Flotilla was known as the Flandern Flotilla (Wikipedia Flanders) which in February 1917 became Flandern I and Flandern II Flotillas, a key element of the German submarine offensive in the Forgotten Wrecks project area and in the North Sea ([uboat.net](http://uboat.net)). The Baltic Flotilla, or Kurland Flotilla was smaller, and was based between February 1915 and October 1917 at Danzig, and later at Libau. *“The Bruges docks were perfect because they lay about 12 kms (7 miles) inland so they were not reachable for (inshore) bombardment. The Germans improved and fortified the pre-war facilities, and proximity to the town was perfect for the officers and the men”* (Centenary News).

During the First World War seven, general types of U-boat were commissioned in 33 different classes. They carried up to four main weapons – torpedoes, deck guns, scuttling charges, and in some cases,

mines. Within these seven types, progressive developments led to subtypes as listed (numbers of U-boats in each) with the majority rated for 50m depth although a number of sub-types were rated for 75m depth.

- Boats built for export - U 66 (5), UA (1).
- Gasoline-powered boats - U 1 (1), U 2 (1), U 3 (2), U 5 (4), U 9 (4), U 13 (3), U 16 (1), U 17 (2).
- **Ocean-going diesel-powered torpedo attack boats** - U 19 (4), U 23 (4), U 27 (4), U 31 (11), U 43 (8), U 51 (6), U 57 (12), U 63 (3), Large Ms. (4), U 81 (6), U 87 (6), U 93 (22).
- U-Cruisers and Merchant U-boats - U 151 (7), U 139 (3), U 142 (1).
- **UB coastal torpedo attack boats** - UB I (17), UB II (30), UB III (89 prior to end of hostilities).
- **UC coastal minelayers** - UC I (15), UC II (64), UC III (16).
- UE ocean minelayers - UE 1 (10), UE 2 (9).

Four U-boats from the highlighted types above, each lost within the Forgotten Wrecks project area, including two contrasting UB types, are described below.

**SM U-90** (uboat.netb) was a Type U87 Ocean-going diesel-powered attack boat, one of only six built between 1915 and 1917 (Documents Kriegsmarine). Described in the uboat.net website as having *“had excellent seagoing abilities and handled very well. Many arrangements on these boats were also*



Source <http://185.141.201.187/en/sm-u-90-pictures> 03

*seen on the WWII type IX boats when their design work took place 20 years later”*. It was built by Kaiserliche Werft, commissioned at Danzig on 2 August 1917, and equipped with 12 x 50cm torpedoes

fired through four bow tubes and/or two stern tubes (Rossler, E 2001:300), two 105mm deck guns (Fishdick 1937:81) with 140 rounds, but no mines (uboat.netc). It undertook seven patrols operating out of III Flandern Flotilla between 10 September 1917 and 11 November 1918, under three commanders, Kptlt. Walter Remy, Royal House Order of Hohenzollern, from 2 August 1917 to 31 July 1918, Oblt. Helmut Patzig, Royal House Order of Hohenzollern, from 1 August 1918 to 31 August 1918, and Kptlt. Heinrich Jeß, Royal House Order of Hohenzollern, from 1 September 1918 to 11 November 1918. (uboat.netc), (uboat.netd)



Image Fishdick 1937:14



Fishdick 1937:135

Reference: Fischdick, A. 1937. Uboot Krieg u. Kameradschaft. Uboot 90 Frontfahrten-Erlebnisse. Gelsenkirchen: W. Wessels.

Kptlt. Walter Remy attacked the following:

- *Union Republicaine*, a small French fishing vessel (dundee)
- *Deux Jeannes*, a small French fishing vessel
- *Liberte*, a small French fishing vessel
- *Peuples Freres*, a small French fishing vessel (dundee)
- *Drake*, a smallish British steamer
- *Heron*, a small British steamer, with 22 casualties.

(See [https://livesofthefirstworldwar.org/search#Category=lifestories&FreeSearch=SS Heron&PageIndex=1&PageSize=20](https://livesofthefirstworldwar.org/search#Category=lifestories&FreeSearch=SS+Heron&PageIndex=1&PageSize=20) )

- *Neuilly*, a large French sailing vessel
- *Jeannette*, a medium size French fishing vessel
- *Robert Morris*, a smallish British sailing vessel
- *Aros Castle*, a medium British steamer
- *Corton*, a medium British steamer, damaged not sunk, with 3 casualties
- *Victor De Chavarri*, a smallish Spanish steamer
- *Charles*, a small British sailing vessel, with 1 casualty
- *Normandy*, a small British steamer, with 27 casualties
- *Union*, a small French steamer
- *Lindeskov*, a small Danish steamer
- *Martin Gust*, a small Russian sailing vessel
- *Arrino*, a medium British steamer
- *Oilfield*, a medium British tanker
- *City of Winchester*, a small British sailing vessel
- *Superb*, a medium Norwegian sailing vessel
- *Begum*, a medium British steamer, with 15 casualties
- *Carlton*, a medium to large British steamer
- *President Lincoln*, a very large American six-masted passenger steamer, with 26 casualties. An account of its wartime voyages is included in the uboat.net website and further reference to this event is narrated below (uboat.net).

Oblt. Helmut Patzig attacked the following:

- *Montanan*, a large American steamer, with 5 casualties
- *J. M. J.*, a small French fishing vessel
- *West Bridge*, a medium to large American steamer, with 4 casualties. This vessel was very seriously damaged; abandoned by crew but later towed into Brest by the Royal Naval tugs *Epic* and *Woonda*, escorted by USS *Smith (DD-17)*
- *Escrick*, a medium British steamer, with 1 casualty
- *Joseph Cudahy*, a small to medium American tanker, with 1 casualty
- *Graciosa*, a large Portuguese sailing vessel – shelling of this vessel was assisted by *U-67*.

Kptlt. Heinrich Jeß attacked the following:

- *Dundalk*, a small British steamer, with 21 casualties
- *Pentwyn*, a medium British steamer, with 1 casualty



Only the *Corton*, which was damaged, was attacked within the Forgotten Wrecks project area. The blue markers are for 1917 and the orange markers for 1918. Except for *Corton*, all the English Channel attacks were near the French coast.

SM *U-90* was ordered on 23 June 1915 and launched on 12 January 1916. Double skinned, its pressure hull was 50.07m long and 4.18m wide which incorporated twin diesel engines and twin electric motors driving the vessel through twin screws. SM *U-90* carried a nominal complement of four officers and 32 men but a total of 42 when attacking USS *President Lincoln*. It was one of the quicker submarines, 15.6 knots on the surface and 5.8 knots submerged and an impressive range of 11,380 miles at 8 knots surfaced and 56 miles at 5 knots submerged. It was rated for 50m depth but could go deeper if required.

SM *U-90* survived the war and surrendered on 20 November 1918, nine days after the Armistice. SM *U-90* was handed over to the British who decided that it would be sold for scrap. However, during the war there were notable incidents involving *U-90*.

- Early in the First World War, the Royal Navy erected a signal station on Hirta, St Kilda, Outer Hebrides and daily communications with the mainland were established for the first time in St Kilda's history (Virtual Hebrides). In a belated response, the German submarine SM *U-90* arrived in Village Bay on the morning of 15 May 1918 and, after issuing a warning, started shelling the island. Seventy-two shells were fired, and the wireless station was destroyed. The manse, church & jetty storehouse were damaged, but no loss of life occurred.
- As a result of this attack, a 4-inch Mark III QF gun was erected on a promontory overlooking Village Bay, but it never saw military use (Wikipedia St Kilda).
- Its commander, Walter Remy, made regular stops at remote island North Rona for provisions such as fresh mutton (Wikipedia SM *U-90*).
- On 31 May 1918 two days out of Brest, USS *President Lincoln*, a 32,500-ton transport in convoy



Fischdick 1937:100

Reference: Fischdick, A. 1937. *Uboot Krieg u. Kameradschaft. Uboot 90 Frontfahrten-Erlebnisse.* Gelsenkirchen: W. Wessels.



Wikipedia St Kilda



Courtesy the Naval Historical Foundation, Washington, D.C.  
USS *President Lincoln* Collection

to the United States with three other troopships, *Antigone*, *Rijndam* and *Susquehanna*, was attacked by *U-90*, the escort destroyers having departed the previous evening under the assumption that the so-called submarine danger zone had been left behind. USS *President Lincoln* was struck by three torpedoes and sank soon after with the loss of 26 men out of the 715 aboard, most of whom were crew but included sick and wounded soldiers. Survivors, including two paralysed soldiers, took to the boats. In accordance with established

practice, the other three transports continued without pause having radioed a message about the sinking. U-90 later surfaced and took prisoner the most senior surviving officer, Lieutenant Edouard V.M. Isaacs. When eventually U-90 departed with Isaacs, *President Lincoln's* boats and rafts were roped together to lessen the chances of further loss of life. During the night, the destroyers *Warrington* and *Smith* picked up all survivors and returned to France by 2 June, having en route depth-charged U-90 but without success. USS *President Lincoln* was the largest U.S. Naval vessel to be lost in the First World War (Naval History and Heritage Command).

- The *Sevenoaks Chronicle and Kentish Advertiser* - Friday 17 January 1919 contained this article: *A correspondent writes: I have just heard the striking story of the escape from Germany of Lieutenant E.V.M. Isaacs, United States Navy, who was taken aboard the German submarine U-90, after his ship had been sunk on 31 May 1918. He was taken to Germany by way of the Shetlands, the North Sea, the Kattegat to Kiel and then to Wilhelmshaven by way of the Kiel canal. His adventures began off Shetland, when the submarine encountered the American destroyers Smith and Warrington. It submerged to sixty metres, when the American destroyers dropped 22 depth charges, five of which were very close. In this encounter Lieutenant Isaacs collected such important information that he was at once anxious to get back to the United States at all costs. First, he tried to jump overboard in Danish waters, but was caught. He was sent to Karlsruhe, where he again began to attempt to escape, and on one occasion tried to get away by jumping from a train going at forty miles an hour. As soon as he was passably fit again, he conceived the idea of short-circuiting all the lighting circuits of the prison camp and escaping through the barbed wire in the dark. After seven days and nights in the mountains of the Black Forest he succeeded, after a four hours' crawl, in eluding the sentries along the Rhine, which is a torrent between the German and Swiss frontiers. In crossing the river, he was carried several miles downstream by the rapids, but at last reached the opposite shore and gave himself up to the Swiss guards. He reached Washington four weeks after his escape from Germany, but by that time his information had been conveyed to the American Navy and was already bearing fruit.*

- Edouard Victor Michel Izac was awarded the Medal of Honour and his citation reads:

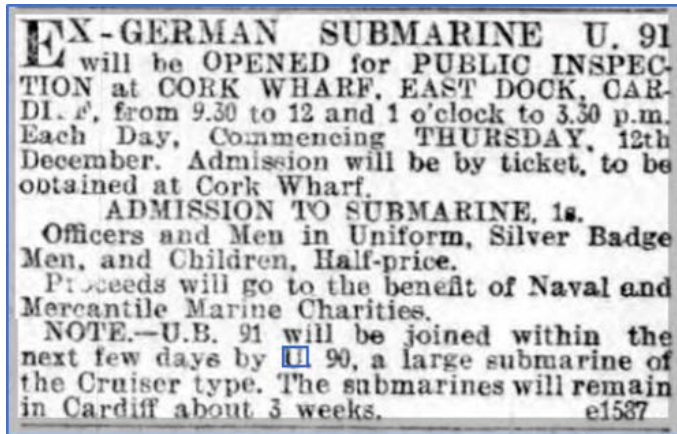


*When the U.S.S. President Lincoln was attacked and sunk by the German submarine U-90, 21 May 1918, Lt. Izac was captured and held as a prisoner on board the U-90 until the return of the submarine to Germany, when he was confined in the prison camp. During his stay on the U-90 he obtained information of the movements of German submarines which was so important that he determined to escape, with a view to making this information available to the U.S. and Allied Naval authorities. In attempting to carry out this plan, he jumped through the window of a rapidly moving train at the imminent risk of death, not only from the nature of the act itself but from the fire of the armed German soldiers who were guarding him. Having been recaptured and re-confined, Lt. Izac made a second and successful attempt to escape, breaking his way through barbed-wire fences and deliberately drawing the fire of the armed guards in the hope of permitting others to escape during the confusion. He made his way through the mountains of southwestern Germany, having only raw vegetables for food, and at the end, swam the river Rhine during the night in the immediate vicinity of German sentries. (Wikipedia Edouard Izac)*

**Note** – His surname has two different spellings in the sources and have been retained as sourced. His born name was Isaacs but he changed it in 1925 to Izac and when he died, he was the last living recipient of a WW1 Medal of Honor. His personal accounts of the attack, passage in *U-90*, in captivity, and of his escape are in his book “Prisoner of the U-90” which can be read on-line at:

(URL: <https://ia802608.us.archive.org/20/items/prisoneru00isaagoog/prisoneru00isaagoog.pdf> ).

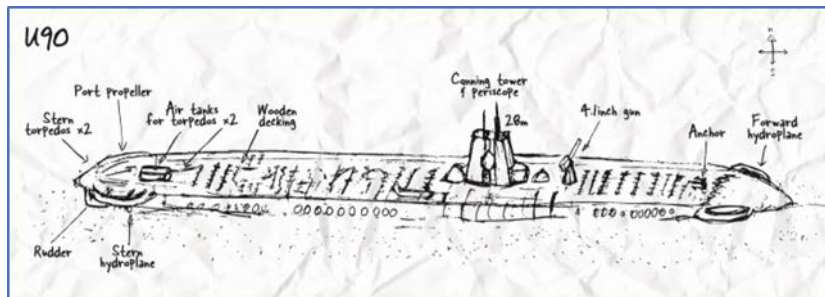
- The *Western Mail* - Friday 13 December 1918 carried this advertisement:



There was a query in a Naval forum on 6 July 2012 relating to “Special Service Cardiff” and the response was: “Believe this relates to Sidney Vowles serving in U-90 from 18 November 1918. Some of the surrendered U-Boats were crewed up by RN Personnel and sent on tours of UK Ports to show the U-Boats to the General Public. The CO of U-90 for this purpose

was Lieutenant Henry Francis Morton Peto and the First Lieutenant was Lieutenant Claude Alfred Smith”. (World Naval Ships Forums)

SM *U-90* was under tow when on 30 November 1919, it foundered and sank. Since the 1980s Martin Woodward, Isle of Wight Diver and Maritime Historian, has been interested in the wreck of a



Courtesy: <http://indepthphotography.co.uk/wp-content/uploads/2015/11/SCUBA-U90.pdf>

submarine south east of St Catherine’s Point off the Isle of Wight, and purchased the wreck on 20 April 1994; by 1988 he had established that it was the wreck of SM *U-90*. As of 22 December 2015, the wreck was described as being in

about 35m, with a 45° list to starboard & is pretty much intact. The two large deck guns, one mounted forward of the conning tower & one aft are an impressive sight. The tower has several periscopes visible & they look to be in remarkably good condition considering their time under water. At the stern it is possible to see under the wreck with the starboard propeller and prop shaft clear on the shingle sea bed. (Wrecksite EU & Hamish Morrison). Although frequently visited by recreational divers once its presence became public knowledge, this U-boat wreck presented an excellent opportunity for detailed archaeology and, as part of the Forgotten Wrecks of the First World War project, has been studied in detail, including reaffirming the wrecks identity (MAT: SM *U-90* Site Report).

It is a popular dive site, and videos include:

- July MAT: 2006 – <https://www.youtube.com/watch?v=NiwlWI4t47g&list=PL94D80EA1CFB8B58C&index=9>
- March 2007 - <https://www.youtube.com/watch?v=NiwlWI4t47g>
- April 2008 - <https://www.youtube.com/watch?v=vIzA58h5v10>
- 2015 - <https://vimeo.com/135090036>



Port Propeller (cone missing) & aft hydroplane. Image Martin Davies



Port Anchor.  
Images Martin Davies



Deck Gun.  
Image Martin Davies

Images of Wreck SM U-90, each from indepthphotography.co.uk (Martin Davies)

**SM UB-33** (uboa.net: d) was one of 30 UBII Type coastal torpedo attack boat German submarines. It was built by Blohm & Voss, commissioned at Hamburg on 20 April 1916 and was equipped with six torpedoes fired through two bow tubes, one 88mm deck gun with 120 rounds, but no mines (uboa.net: f). It undertook 17 patrols under four commanders – the first three were Oblts Herbert Lefholz, Waldemar von Fischer, and Karl Ruprecht operating out of Baltic Flotilla until 24 October 1917, and then Oblt. Fritz Gregor operating out of Flandern Flotilla who died with all his crew on 11 April 1918, three days after his final success, when *UB-33* struck a mine and sank SW of the Varne sandbank at 50.55N, 01.17E. Neither Lefholz nor Fischer had any success, Ruprecht in 1917 captured three vessels as prizes in the Skagerrak (one large Norwegian sailing vessel, and two small Swedish steamers), whereas Gregor from 1 January 1918 sank 13 vessels and damaged two. The damaged ones were both small to medium sized British steamers, *Genesee* and *Pikepool*. The sunk vessels, most of which were scuttled, were *Kia Ora*, *Commander*, *Northville* (torpedoed), *Commandant Baratier*, *Snow Drop*, *Idalia*, *Irex*, *Leonora*, *Oryx*, *Rosebud*, *Carla* (shelled), *Sparkling Foam*, and *Nyassaland* (shelled and torpedoed). *Commandant Baratier* was a French sailing vessel, *Carla* a sailing vessel, and *Nyassaland* a small steamer, both Norwegian. The remainder were British, mostly fishing or sailing vessels under 199 grt, *Kia Ora* was a 99 grt barge with a motor, and *Northville* was a 2,472 grt steamer. The vessels were all lost within the Forgotten Wrecks project area except for *Kia Ora* near Dieppe and *Carla* off Cherbourg and remarkably from so many ships, there were no casualties (uboa.net: g).

SM UB-33 was ordered on 22 July 1915, launched on 5 December 1915 and sailed for its first patrol on 22 June 1916. Double skinned, its pressure hull was only 27.13m long and 3.85m wide which incorporated twin diesel engines and twin electric motors driving the vessel through a single screw,



SM UB-45 a U-boat similar to UB-33  
Wikipedia [https://en.wikipedia.org/wiki/SM\\_UB-33](https://en.wikipedia.org/wiki/SM_UB-33)

and still had space for a complement of 23 crew. It was a slow vessel, 9.15 knots on the surface and 5.8 knots submerged and, compared to later vessels, a somewhat limited range of 6,650 miles at 5 knots surfaced and 45 miles at 5 knots submerged. It



was rated for 50m depth but could go deeper if required (uboat.net: h).

SM *UB-33* was returning on 11 April 1918 to its base at Zeebrugge but hit a mine associated with the Dover Barrage. *"The explosion was witnessed by the drifter Ocean Roamer and the oil patch was buoyed. The identity of this wreck has not been in doubt because from an intelligence perspective, it was one of the most productive U-boat wrecks visited by Admiralty Salvage Section divers. Commander Damant's dive team began a run of U-boat wreck dives in the Dover area with the salvage of much material from UB-33 from 21 to 30 May 1918."* (McCartney 2015: 58). All 28 hands were lost.

The first dive, on 29 May 1918, on *UB-33* found the body of the Commander, Oblt. Fritz Gregor, still in the conning tower (he was later buried ashore). The divers then entered the submarine and recovered confidential documents including secret German code books and ciphers, thus benefitting Room 40 {also known as 40 O.B. (Old Building) (latterly NID25)} which was the section in the British Admiralty most identified with the British cryptanalysis effort during the First World War. (TNA, ADM 137/2100) (Historic England: SM *UB-33*)

English Heritage commissioned a study in 2014 entitled *NHPP 3A1: Unknown Marine Assets & Landscapes - Strategic Assessment of Submarines in English Waters*. (Cotswold Archaeology). This project identified that *UB-33* was on a seabed of sand, mud & shingle with brisk tidal streams, now with conning tower separate, partly buried, very broken up aft, and with large part of lower casing badly crushed.

Five small artefacts, were recovered in position 50 56.05N 001 15.41E and attributed to the wreck of the *UB-33*. This position is that of the site now thought to be *U-8* and is therefore double-indexed with both sites. The German authorities have requested that divers visit the *UB-33* site on a "look but don't touch" basis and that no further recoveries are made.

Finally, various websites in 2007 indicated that *UB-33* was a risk to passing shipping due to limited clearance and required to be moved, but these reports were erroneous as it was German submarine *UB-38* which was in fact moved to deeper water.

**SM *UB-81*** (uboat.net: i) was one of 89 Type UBIII coastal torpedo attack boats. It was built by A.G. Weser, commissioned at Bremen on 18 September 1917 and was equipped with 10 x 50cm torpedoes fired through four bow tubes and/or one stern tube, one 88mm deck gun with 160 rounds but no mines. It had one commander, Oblt. Reinhold Saltzwedel, Pour le Mérite, and the first patrol from Flandern I Flotilla had no success. It should be noted however that Saltzwedel was experienced, ranked 11th in the table of record sinkings by U-boat captains. (uboat.net: j)



Image is of *UB-64*, also a Type UBIII boat. Image: U-boat.net

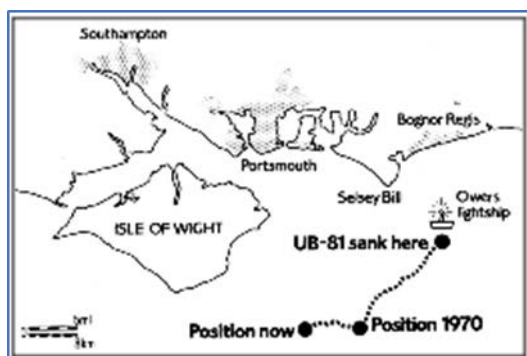
*UB-81* left for its second patrol on 11 November 1917 and on 1 December, it had its only success when it first torpedoed SS *Molesey* then scuttled it,

without casualties, within the Forgotten Wrecks project area (uboat.net: k). *Molesey*, a British steamer

of 3,218 grt had sailed from Gibraltar on 21 November 1917 with phosphate rock in convoy HG32 and was en route for The Downs for further orders. This attack happened about 12 miles SWxW of the Brighton Lightvessel and on the following day, 2 December 1917, *UB-81* with 34 crew on board was mined 10 miles SE of Dunnose Head near the Owers Lightship, also within the Forgotten Wrecks project area (Historic England: UB 81).

*UB-81* quickly sank to the bottom with the stern flooded and sealed off. The waters were shallow enough and the damage was at the extreme stern. The submarine blew all ballast forward, thus raising up the bow, and a torpedo tube exit just above the water level. Six of the thinner members of the crew crawled out of the torpedo tubes. Leutnant zur See Hermann Freudendal, the LI, Marine Ingenieur Hans Denker, Maschinistenmaat Paul Redlin, Matrose Karl Blunk, Matrose Kirchbaum, and Steuermann Bähge managed to escape, as did Maschinistenmaat Heinrich Borries. Those who had emerged had fired distress flares and Patrol Vessel *HMS P.32*, among those which responded, manoeuvred into position at the bow of the submarine. Either wave action or the *P.32* bumped against the submarine – afterwards denied by *P.32* but the rescued Germans were adamant that the Patrol Boat had struck the U-boat – causing water to ingress the open torpedo tube resulting in an immediate sinking causing all those within, including its commander, to drown. Maschinistenmaat Heinrich Borries died soon afterwards and the *P.32* log states that the crew of *P.32* buried Heinrich Borries at sea on 3 December 1917 (Great War Forum).

SM *UB-81* was ordered on 23 September 1916, launched on 4 August 1917. Double skinned, its pressure hull was 40.1m long and 3.90m wide which incorporated twin diesel engines and twin electric motors driving the vessel through twin screws, with space for a nominal complement of 35 crew. It was a faster vessel than *UB-33*, 13.6 knots on the surface and 8 knots submerged and a better range of 9,040 miles at 6 knots surfaced and 55 miles at 4 knots submerged. It was rated for 75m depth but could go deeper if required. Thus, *UB-81* was in the order of 50% bigger than *UB-33*. The UBIII type coastal torpedo submarine, which entered service during 1917 through to the cessation of hostilities actually bore some of the features of the different but successful Type UCII minelaying submarine. Despite the somewhat late start and the increased difficulty they had due to the introduction of the convoys, UBIII's collectively sank 519 ships. (Onwar.com)



Source; <https://www.wrecksite.eu/wreck.aspx?498>

SM *UB-81* was sunk at 50°27'N 00°51'W but drifted some 12 miles westwards, to where it was found in 1970, and then in 1974, SM *UB-81* was discovered upright on flat sand and shingle seabed some 14 miles south east of the Isle of Wight. The diver who found *UB-81*, at the time working for a salvage firm, reported the damage as slight. However, in 1989 it was found split in two, just aft of the conning tower. (Pastscape). The highest point was the gun, which pointed towards the surface, with ammunition lying

around. The main hatch was open to the control room and parts of the gun and bridge telegraph had been removed. The schematic map is dated 8 January 2010. On 1st May 2008, the Protection of Military Remains Act 1986 (Designation of Vessels and Controlled Sites) Order 2008 (Statutory Instrument No. 950) "cited an area situated within a distance of 250 metres of the point at 50 29.442North, 00 58.351West (World Geodetic System 1984), which contains the remains of the vessel

known as *UB-81*, as a controlled site". A controlled site under the Act means that diving on the wreck is forbidden.



In 2001, a number of small artefacts were recovered from the wreck of *UB-81* in 2001, position 50 29.36N 000 58.49W. One artefact from the site, the conning tower klaxon, is on display at the Shipwreck Centre and Maritime Museum, Arreton Barns, Isle of Wight. (The Shipwreck Centre)



Auctioned on 11 June 2014 at Exeter, the Sale catalogue description: *"A WWI period German engine room telegraph salvaged from SM UB - 81: the casing marked to the reverse `SUM 46`, with later inscribed plaque. \*Note- SM UB-81 was a type UB III submarine of the Imperial German Navy during World War I. Built in 1917 she sank after hitting a mine on 2nd December 1917 off The Isle of Wight. In 2002 the location was scheduled as a protected site under the Protection of Military Remains Act 1986. This piece was recovered by divers in the late 1970`s/ early 1980`s".* (the-saleroom.com)

A YouTube dive video published 30 April 2008, includes these stills:



Hatch with a passing fish



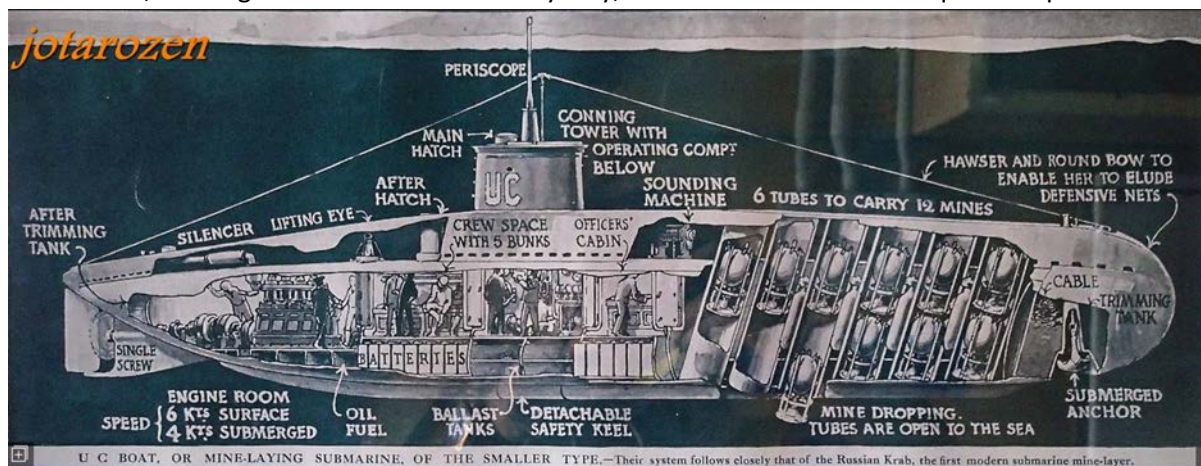
<https://www.youtube.com/watch?v=BVeT3mQYCYA>

**SM UC-51** was one of 64 Type UCII coastal minelayers class German submarines. It was built by Friedrich Krupp, Germaniawerft, commissioned at Kiel on 6 January 1917.

The predecessor Type UC1 coastal minelayers, of which 15 were built during 1915 and 1916, were slow, small U-Boats of very limited range of 750 miles at 5 knots, carrying 12 mines but had no facility for torpedoes and were armed only with a machine gun with 150 rounds. (uboat.net: I) Nonetheless, they undertook 478 patrols sinking or damaging 720 ships. Following the sinking of RMS *Lusitania* on 7 May 1915 by U-20, and consequential lull in U-Boat operations, the Type UC11 was conceived, first ordered in Autumn 1915 and became operational from June 1916. These Type UCII U-boats compared to Type UC1 were longer, twice as fast on the surface, had 12 times the range, and now carried torpedoes, more mines and a deck gun, and therefore a significantly more serious threat in all UK waters. Judged by the number of enemy vessels destroyed, estimated at more than 1,800 in all theatres of war, the Type UCII can be regarded as very successful. (Heritage Gateway)

SM *UC-51* was ordered on 12 January 1916 and launched on 5 December 1916. Double skinned, its pressure hull was 39.3m long and 3.65m wide which incorporated twin diesel engines and twin electric motors driving the vessel through twin screws, the seven torpedoes plus 133 rounds for its 88mm deck gun, and unlike the other U-boats in this article, 6x100cm mine tubes to discharge its 18 Type UC200 mines but still had space for a nominal complement of 26 crew. Speed was 11.6 knots on the surface and 7 knots submerged, with a range of 9,430 miles at 7 knots surfaced and 55 miles at 4 knots submerged. It was rated for 50m depth but could go deeper if required. (uboat.netm)

The image below shows how the mines were deployed from a UC minelaying submarine – having exited the tube, connected weights would sink to the sea bed to anchor the mine and an automatic mechanism, utilising the mine's inherent buoyancy, let the mine rise to the required depth.



[https://www.bing.com/images/search?view=detailV2&ccid=JepcXkBK&id=63706D149FCF69B283FC5E7CCF6C1286BBF7FF0C&thid=OIP.Je pcXkBKSDS\\_Gilf5KuPPQEsBx&q=uc+5+submarine&simid=608009152837977895&mode=overlay&first=1&selectedIndex=42](https://www.bing.com/images/search?view=detailV2&ccid=JepcXkBK&id=63706D149FCF69B283FC5E7CCF6C1286BBF7FF0C&thid=OIP.Je pcXkBKSDS_Gilf5KuPPQEsBx&q=uc+5+submarine&simid=608009152837977895&mode=overlay&first=1&selectedIndex=42)

*UC-51* undertook seven patrols under two commanders, Kptlt. Wilhelm Schröder from 6 January 1917 to 28 April 1917 and Oblt. Hans Galster from 29 April 1917 until the boat was lost on 17 November 1917. The patrols operated out of I Flotilla from 8 April 1917 until 20 August 1917 and thereafter out of Flandern Flotilla.

Schröder had only one patrol with *UC-51*, sinking two sailing vessels *Amanda* of Sweden, and *Polycarp* of Norway, plus he damaged a small Swedish steamer *Atalanta* which was torpedoed and sunk the following day by SM *U-86*, all without casualties.

Galstar in his six patrols sunk, in **Bold** if within the Forgotten Wrecks Project area

- **Marie**, a small Danish steamer, with 2 casualties
- *Segovia*, a Norwegian steamer
- *Kangaroo*, a small British sailing vessel, with 4 casualties
- *Violet*, a small British sailing vessel
- *Miami*, a smallish British steamer
- *Hilversum*, a smallish Dutch steamer
- *Ludgate*, a medium British steamer, with 24 casualties
- *Gloriosa*, a very small fishing smack
- *Eleazar*, a British fishing vessel
- *N. Verberckmoens*, a small French steamer, with 4 casualties
- *Wisbech*, a small British steamer, with 2 casualties
- *Ezel*, a British sailing vessel
- *Laura*, a British sailing vessel
- *Jane Williamson*, a British sailing vessel, with 4 casualties  
(see [https://livesofthefirstworldwar.org/search#Category=lifestories&FreeSearch=jane williamson&PageIndex=1&PageSize=20](https://livesofthefirstworldwar.org/search#Category=lifestories&FreeSearch=jane%20williamson&PageIndex=1&PageSize=20) )
- **Mary Orr**, a British sailing vessel
- **Mary Seymour**, a British sailing vessel
- **Moss Rose**, a British sailing vessel
- **Water Lily**, a British sailing vessel
- **Luxembourg**, a smallish British steamer
- *Rosy Cross*, a very small French fishing smack
- *William*, a British sailing vessel
- *Zeta*, a smallish British steamer
- *Saint Jacques*, smallish French steamer
- *Poldown*, a small British steamer, with 18 casualties  
(See <https://livesofthefirstworldwar.org/search#Category=lifestories&FreeSearch=Poldown&PageIndex=1&PageSize=20> )
- *HMD Active Iii*, a Royal Navy drifter, with 10 casualties
- *Ionian*, a large British steamer, with 7 casualties  
(See <https://livesofthefirstworldwar.org/search#Category=lifestories&FreeSearch=ionian&PageIndex=1&PageSize=20> )

and damaged, on the same day as his *UC-51* was lost,

- **David Lloyd George**, a medium British steamer

The other attacks were either near the French coast, a few in the far North Sea with most north or northwest of the Forgotten Wrecks Project area in the Irish Sea. (uboa.net: n)

On 17 November 1917, *UC-51* was sunk by a British mine in the English Channel within the Forgotten Wrecks Project area, in position some 4 miles SSE of Prawle Point at 50.08N, 03.42W. For this voyage, there were three more on board than the standard complement, and all 29 lost their lives. Initially, *UC-51* was thought to have been sunk by HM *Firedrake*, a destroyer, off Lowestoft and there is a report by Wessex Archaeology about this wreck – subsequently, the actual location off Prawle Point and *UC-51*'s identity was confirmed by Innes McCartney. The wreck covers an area of about 40m x 7m and stands nearly 7m high, lies at 45° about 66m deep, and is surrounded by sand. (Archaeology Data Service)

**Countermeasures** - In November 1916, Admiral Jellicoe created an Admiralty Anti-Submarine Division, but effective countermeasures arrived slowly. Initially, the only means were gunfire when the submarine was on the surface, and ramming, but neither was effective. Depth charges were trialled in 1915, dazzle paint was tried on selected ships, and in 1917, the Admiralty decided that all British merchant ships should be painted in dazzle camouflage – each pattern was unique, designed by women artists working in the Royal Academy. Q-ships were introduced, hydrophones were used by convoy ships towards the end of WW1, nets, paravanes and the like were deployed, all with limited success. Seaplanes and airships were also used to patrol for submarines – a number of successful attacks were made, but the main value of air patrols was in driving the U-boat to submerge, rendering them virtually blind and limiting mobility (IWM), (Historic England), (naval-history.net) (uboat.neto), (Maritime Archaeology Trust).

Most important was the introduction of convoys, in which merchant ships were grouped together and protected by warships. The Germans tried the “Wolfpack” approach but it failed in the First World War due to lack of suitable signal technology to control the members of the pack. (Convoys), (naval-history.net).

A very extensive narrative on the whole subject of British Naval anti-submarine operations sheds light on this subject which was of prime concern to the Admiralty. Chapters 3 and 4 deal with convoys. (naval-history.net)

**German Submarine Memorials** – 202 U-boats were lost to enemy action and 5,132 submariners died from 1914 to 1918. The U-Boot-Ehrenmal Möltenort (Möltenort U-Boat Memorial) in Heikendorf near Kiel is a memorial site belonging to the German War Graves Commission, situated in the small town of Möltenort on the outskirts of the city of Kiel in the northern part of Germany. It is very close to the more famous site of U-995 at Laboe. When opened in 1930, it paid respect to 5,132 fallen German U-boat-men. (uboat.net: p) (uboat.net: q).

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