Forgotten Wrecks of the First World War

Maritime Archaeology Trust

LOTTERY FUNDED

First World War CENTENARY

Led by IWM

May 2018
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MAT staff involved in the recording: Jan Gillespie, Christin Heamagi, Brandon Mason, Garry Momber.
MAT staff involved in research and reporting: Amanda Bowens, Jan Gillespie.

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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Maritime Archaeology Trust: Forgotten Wrecks of the First World War
Site Report: Eleanor (May 2018)
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 project, relating to one of the south coast’s First World War wrecks, namely that of Merchant Fleet Auxiliary Vessel Steamship Eleanor.
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 in relation to MFA *Eleanor*.

2.1 Desk Based Research

2.1.1 Online Information/Sources
There are two listings for the wreck of *Eleanor* in the National Record of the Historic Environment (NRHE) available via Pastscape. The information about the vessel and its loss is the same, only the positions differ. The position against Monument Number 904620 being the correct one.

<table>
<thead>
<tr>
<th>Monument Number</th>
<th>NMR Number</th>
<th>Location</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>904620</td>
<td>SZ 26 NW 5</td>
<td>SZ 23224 66870</td>
<td>Approx. 10.1 nm SW of Needles</td>
</tr>
</tbody>
</table>


U-boat.net provides information about the ship and its loss to UB-57.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Uboat.net</td>
<td><a href="https://www.uboat.net/wwi/ships_hit/1858.html">https://www.uboat.net/wwi/ships_hit/1858.html</a></td>
</tr>
</tbody>
</table>

A couple of videos including dive footage of the wreck of the *Eleanor* are available online and these were studied for any information about the wreck they could reveal (see Section 8.1).

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 relation to the *Eleanor*. Of particular interest were:

- ADM 137/2963 (Sept 1917 – Feb 1918) – British Merchant Vessels Sunk & Captured by the Enemy.
- ADM53/44157 - *Hene Castle* (escorting trawler) log extract.
- MT25/26 - *Eleanor* cargo manifest.

2.1.3 Other Historical Sources
Other historical sources consulted included the Lloyd’s Register of Ships (1916/17), Wendes (2006) Taffrail (1935) and Friedman (2011).

2.1.4 Geophysical Datasets
Desktop research included studying sidescan sonar imagery of the wreck thought to be *Eleanor*. Data was kindly provided by Navitus Bay Wind Park Ltd (2013).

2.2 Associated Artefacts
While the Forgotten Wrecks project had a non-recovery policy, where possible, the project aimed to record and ‘virtually reunite’ artefacts historically recovered from the Forgotten Wrecks. It was possible to obtain photographs of 3 artefacts recovered from the wreck of *Eleanor* (see Section 5).

2.3 Fieldwork
Forgotten Wrecks, HLF-funded diving from the dive boat *Wight Spirit* took place on the wreck of the *Eleanor* on 27 June and 3 & 5 July 2014 and on 7 July 2017.
Initial dives aimed to assess the condition of the remains and obtain a sketch drawing, then to build on this information with a measured sketch/survey and photographic recording where possible. The July 2017 dives were focused on photography as the visibility was much better.

A total of 9 divers (4 professional divers from MAT and 5 volunteers) undertook a total of 503 minutes diving on the wreck over 4 days. The dive team used self-contained breathing apparatus (SCUBA) with a breathing gas of nitrox using accelerated decompression procedures. All dives on the wreck in 2014 where in exceptionally dark conditions and poor visibility due to heavy rain and persistent severe storms during the winter of 2013/14. Powerful lights where utilised to survey the remains as far as possible.

3. Vessel Biography: Eleanor

Merchant Fleet Auxiliary Vessel Steamship **Eleanor** (Figure 1) was chosen as one of the Forgotten Wrecks case study sites because of the unusual cargo of mines and depth charges, and also the horrific loss of life that occurred, there being only one survivor from a crew of 36 men when the ship was torpedoed by **UB-57** on 12 February 1918. The vessel also represents one of the many merchant steam ships hired by the Admiralty as a merchant fleet auxiliary during the First World War. Cargo vessels with had an auxiliary military role during the First World War have been identified as being under-represented in the archaeological record for the period (Wessex Archaeology 2011: 33).

![Figure 1: SS Eleanor at La Rochelle (courtesy Dave Wendes)](image)

3.1 Vessel Type and Build

Launched on 25th August 1888 and completed as a tramp steamer in November 1888, the SS **Eleanor** (official number 88816) was the fifth and final ship built that year by H S Edwards & Sons at Howden. The ship was a 2-masted schooner-rigged, steel screw steamer with one deck and a well deck having a gross tonnage of 1,980. The 270ft (c.82m) long ship had a beam of 36ft 6ins (c.11m) and a draft of 19ft ins (6m); powered by a three cylinder triple expansion engine from JP Rennoldson & Sons of South Shields, with two single ended boilers giving 186 nhp driving a single screw, the ship had a speed of 8.5kts (Lloyd’s Register 1916/17). Though a contemporary report states that just before the sinking, **Eleanor** was “steaming very fast, speed at least 11 knots” (ADM 137/1475).

**Eleanor**’s launch was reported in the Shields Daily Gazette, which provides interesting detail about the vessel, its layout and equipment, including: “a long raised quarter deck about 108 feet in length. The captain and officers will be quartered in the poop deck aft, and accommodation for the engineers will be provided at the after end of the bridge house, whilst the crew will be located forward of the main
deck. She will have five water-tight bulkheads constructed of steel, and will be fitted with water ballast tanks on the cellular bottom principle. The vessel will also be fitted with steam steering gear, winches, screw gear aft, direct steam windlass, and all the latest improved apparatus for rapid loading and unloading.” (Shields Daily Gazette, 1888).

3.2 Pre-war Career
Built for and operated initially by J Ridley, Son & Tully of South Shields, (and subsequently from 1909 the Eleanor Steamship Company) the SS Eleanor was quickly plying her merchant trade between the UK, Ireland and Northern Europe. A brief summary of the ships voyages between Nov 1888 and 1914 offers a clear indication of the travels:

- 7 January 1889 sailed Antwerp for the River Tyne
- 23 March 1889 arrived Ayr from Belfast
- 26 November 1889 sailed Grimsby for Gothenburg
- 7 May 1890 sailed Guernsey for Portsmouth
- 6 August 1892 sailed Queenstown for Gloucester Docks
- 29 November 1892 arrived at Middlesborough from London
- 28 September 1893 sailed Rochester for Jersey
- 6 April 1899 arrived at Sunderland from Yarmouth
- 8 September 1899 arrived at Sunderland from Shields
- 22 January 1913 sailed Ayr for Llandulas

The ship also suffered tragedy during this period when on

- 9 January 1897 at an unclear location Fireman John Bell discharged dead - disappeared. A body was found on 4 February 1897 which was believed to be that of Fireman Bell and
- 14 March 1911 between Whitby and Flamborough Head, Captain Andreas Carl Anderson discharged dead having disappeared during the voyage - believed to have drowned.

Occasionally, the voyages were not without navigational difficulty either, when as reported in local papers around Great Yarmouth in January 1900, the Eleanor on a voyage from Newcastle to London with a cargo of coals went ashore on Palling Beach, before successfully re-floating and proceeding away without damage (Western Mail: 19 January 1900). Ten years later, Eleanor is recorded as having run aground in foggy weather at Newbiggin, Northumberland. The vessel was re-floated on the next tide and there were no injuries (Lloyd’s List 1910).

Immediately upon the outbreak of war however, on the 3rd August 1914 the vessel was requisitioned by the Admiralty for service as a Mine Carrier, designated as Minecarrier No. 1 and fitted with self-protection armament of a 12-pdr gun (www.tynebuiltships.co.uk & www.historicalrfa.org).

3.3 First World War Use & Loss
Operating throughout the war, the SS Eleanor, now flying the pennant Y61 and variously referenced as MFA Eleanor, once again operated extensively in UK coastal waters being formally recorded as based at Sheerness during 1917 and at Upnor Naval Armaments Depot, River Medway in 1918.

On 6 February 1918 the SS Eleanor left the dock at Immingham, on the Humber in Lincolnshire and home to the British ‘D’ class submarines, bound for Malta via Falmouth with a 35-man crew of mixed Royal Navy, Royal Naval Reserve, Royal Naval Volunteer Reserve and Mercantile Marine Reserve personnel, under the command of Lieutenant Arthur T Brain RNR. (Immingham was the location of the Headquarters of the Auxiliary Patrol Depot). The manifest for the voyage indicates the cargo contained:
• 605 Mines B.E. Ordinary
• 66 Fitted for E.C.R. (possibly E.C.A.)
• 272 Pistols B.E.
• 272 Firing Levers
• 302 Mine Spherical Pistols Mk IV
• 302 Identity Plates
• 600 Holders Sal ammoniac rings
• 720 Plummet Chains (of lengths 2, 3 and 6ft)
• 1600 Detonators Torpedo Small Flange
• 400 G.C. Dry Charges for Depth Charges
• 400 Detonator Torpedo Small Flange
• 1 case Shellac varnish
• 229 Mines B.E. fitted
• 300 Sinkers B.E.
• 628 Pistols B.E.
• 628 Firing Levers B.E.
• 1500 Sugar Plugs
• 628 Protecting Cover B.E. Pistols
• 361 Primers B.E.
• 570 Mines Spherical III filled a.p.
• 30 Mines Spherical III filled G.C.
• 240 Anchor plummets with 24’ chain
• 600 Hooks for Anchor plummets
• 600 Covers for Anchor plummets
• 298 Pistols IV
• 298 Plates identity pistols I-IV
• 600 Woolwich safety gear
• 750 Sal ammoniac Rings wch. type
• 750 Sal ammoniac Rings Apollo type
• 650 Primus G.C. 2¼ lb. priming mine spherical
• 600 Sinkers VI with 45 fathoms 1½” rope
• 1500 Hydraulic buffers
• 2 Eyebolts lifting B.E. sinkers
• 265 B.E. mine release gear spans
• 265 B.E. mine release gear spreaders
• 265 B.E. mine release gear slips
• 25 jars for Sal ammoniac rings
• 224 Cases W.?
• 400 Mines B.E. primers
• 1000 Mines Pistols MK IV D.L
• 1000 Holders Sal ammoniac Rings
• 1000 Rings Sal ammoniac 1”
• 1000 Clamps Safety Woolwich pattern
• 1000 Rings Sal ammoniac
• 200 Depth Charge Type D
• 200 First Fitting Boxes Type D

The total cargo value was said to have been £171731 17 shillings and 6 pence (worth as much as £63m today) (TNA, MT25/26).
Eleanor’s cargo included the two types of British mine in use at the time:

- The Naval Spherical mine Mk III had a 38 inch (0.97m) diameter and an external firing leaver comprising two arms extending across the top of the mine; and
- The British Elia (B.E.) mine was invented by Captain G. Elia of the Italian Navy and manufactured by Vickers, these mines had a spherical case with a diameter of 32.9 inches (0.84m). The B.E. firing leaver was on the bottom of the mine and at 2ft 6 inches (0.76m) long, it extended only to one side.

By Autumn 1915, more than two years prior to the loss of Eleanor, significant problems had been identified with the B. E. mines. The pistols lost sensitivity with the build-up of sand and mud and the sinkers regularly failed (later discovered to be due to a design flaw).

In October 1915, Vickers’ production of B.E. mines was reduced from 1,000 per week to just 250 and by May 1918, some three months after the sinking of Eleanor, the use of B.E. mines had been discontinued.

The following information is provided to explain some of the cargo listed in Eleanor’s manifest (TNA, MT25/26) and transcribed above:

**G.C.:** guncotton: Nitrocellulose, a highly flammable compound used as a charge in mines.

**Sal ammoniac:** is a mineral, unusually composed of ammonium (NH₄) that forms around volcanic gas vents and during the process of burning coal in deposits. It is highly soluble in water (minerals.net) and therefore unlikely to be found on the wreck.

**Pistols:** mine-triggering mechanism comprising two firing arms protruding from mine with shearing pin holding arms in place. The Mk IV pistol was approved in April 1915 and first issued in July 1915. (Friedman 2011: 364 – 366).

Figure 2: Diagram showing mine components referred to in Eleanor’s cargo manifest (Taffrail 1935)
As Eleanor steamed south, it was in convoy with other tugs and trawlers and in the afternoon of the 12 February 1918, SS Eleanor was escorted by the Dover trawler HMT Seaward Ho until relieved by HMT Lancer II out of Newhaven at about 4:40pm. HMTs Ben Torc and Balfour were also part of these escort groups. The Eleanor was reported as steaming very quickly – at least 11 knots estimated – and signals were exchanged to reduce speed to enable the escort to maintain station. At about 7:30pm in the vicinity of the Brighton Light vessel, HMT Lancer II was relieved by HMT Hene Castle, at which point the SS Eleanor was about 1 mile (1.6km) ahead.

Again signals were exchanged about speed and the ability of the escorts to keep up with the steamer. At about 8:30pm, the Hene Castle had lost sight of the Eleanor and by 8:45pm a dense fog had set in. The Hene Castle signalled that the Eleanor had run away from it.

Steaming on through the night, SS Eleanor continued westward until at about 03:30 on the 12th when, at a position reported as approx. 9 miles west by south of St Catherine’s Point Isle of Wight (50.30 N 01.30 W), without warning the ship was hit near the number 3 hatch, by a calibre 3 torpedo fired by German submarine UB-57 commanded by Oberleutnant zur See Johannes Lohs. The crew of the SS Eleanor had no time to man the ship’s 12-pounder stern gun or to lower the boats, and the ship sank almost instantly. Of the crew, there was only one survivor, 2nd Officer Barton Hunter, who was found floating on the bridge in the sea. The day after the sinking of Eleanor, Barton Hunter, being the only survivor, was interviewed and his comments recorded, along with other factual detail in a standard form called Particulars of Attacks on Merchant Vessels By Enemy Submarines. This describes how: “he was turned in and at about 4am was wakened by an explosion, ran up on deck and found the vessel was sinking and boats had been blown away, he went up to the Bridge to fire a rocket and a second explosion occurred after which the ship sank and he found himself on the bridge floating in the sea. It was very dark at the time and he heard shouting from men in the water to send a boat to them but saw no boat and could do nothing to help them”.

Shortly after the Eleanor had sunk, the submarine approached the wreckage and hailed Hunter enquiring of the ships name, gun carried, cargo and port of destination. Hunter replied to the questioning “as he was afraid that he would be killed if he refused”. He is also reported to have commented to the German crew “Thank God if your souls are saved, these are all mines”. The reporting officer, responsible for interviewing the most senior ranking survivor and completing the form concludes: “I pointed out to Mr. Hunter that he should not have given the information he did. But at the same time it is to be presumed that he had not all his wits about him after what he had gone through.” (TNA, ADM 137/2963).

After drifting for about two hours, Hunter was picked up at 06:30am by the SS Carronmore and subsequently transferred to the drifter La Parisienne and brought into Poole.

Eleanor’s cargo included more than 1,400 mines (B.E. and Spherical Mk III) (TNA, MT25/26). By 1918, an average of 6,800 British mines were being laid a month (Freedman 2011: 363), so Eleanor’s cargo accounted for approximately 21% of the average total of British mines that would have been laid that month.

After the authorities became aware of the loss of the ship, other vessels were sent to pick up the floating debris, including 97 mines which were taken to Portsmouth for disposal (Wendes 2006: 165).

3.4 Associated Vessels
The ships associated with the SS Eleanor on its final voyage include the German submarine combatant (UB-57), the escort vessels as well as the vessels that relayed the sole survivor to Poole.
UB-57
UB-57 was one of 96 commissioned Type UB-III vessels, a coastal torpedo attack boat class ordered in May 1916, launched in June 1917 and commissioned on 30 July 1917. Its career consisted of 11 patrols under two commanders (Kptlt. Otto Steinbrinck (Pour le Mérite) and Oblt. Johannes Lohs (Pour le Mérite)), in which time it sank 47 ships with a total of 129,173 tons and damaged a further 10 with a total of 58,990 tons. It was lost on 14 August 1918 when it contacted a mine off the Flanders coast with all hands. The bodies of Lohs and several other crewmembers washed ashore on 22 August 1918 (uboot.net).

La Parisienne
La Parisienne was a Lowestoft registered steam drifter (LT.213) of 85 grt built in 1913. The vessel was hired as a net vessel by the Admiralty in August 1915 and remained in service until 1919 running under Admiralty pennant 1835. It was armed with a single 6 pdr AA weapon (www.naval-history.net: La Parisienne).

Seaward Ho
Seaward Ho was a Hull registered trawler (H.312) of 331grt built in 1915. The vessel was hired by the Admiralty in May 1915 and remained in service until 1919 as a minesweeper, running under Admiralty pennant 1512. It was armed with a single 12pdr weapon and a single 7.5" BT. The vessel was renamed Attentive III in May 1918 (www.naval-history.net: Seaward Ho).

Lancer (II)
Initially Lancer, this military class Admiralty trawler (pennant 1151) was one of ten trawlers, of three different types, purchased while building for a total cost of £93,800 – six by order in December 1914, four by order in April 1915. It was launched 17th December 1914 from Smiths Dock, South Bank Middlesborough and completed 27 February 1915, displacing 276grt, with dimensions of 39.6 x 7 x 3.65m (130 x 23 x 12ft) and powered by a single thre cylinder triple expansion engine driving a single screw, with an armament of a single 3pdr gun. It was renamed Lancer II in July 1917 and sank on 18 July 1918 after a collision with HM Yacht Vagrant off the Brighton Light Vessel. As such, Lancer II is also one of the Forgotten Wrecks of the First World War (www.naval-history.net: Lancer).

Ben Torc
The Ben Torc was an Aberdeen registered trawler (A.604) of 199grt built in 1914. The vessel was hired by the Admiralty in May 1915 and served until 1919 as a minesweeper, running under Admiralty pennant 1571. It was armed with a single 6 pdr AA weapon (www.naval-history.net: Ben Torc).

Balfour
The Balfour (IMO 133388) was a Hull registered trawler (H.432) of 285 grt built in 1912 by Cochrane and Sons of Selby, with dimensions of 40.7 x 7 x 3.7 m (133ft 6” x 23ft x 12ft 2”) and powered by a single triple expansion engine driving a single shaft and screw for 65hp and 10 knts. The vessel was hired by the Admiralty in February 1915 (running under pennant 1228) and served as a minesweeper armed with a single 3pdr weapon. On 13 May 1918 Balfour sank after a collision with the Royal Sovereign Light Vessel. As such, Balfour is also one of the Forgotten Wrecks of the First World War (www.naval-history.net: Balfour).

Hene Castle
The Hene Castle was a Swansea registered trawler (SA.33) of 274 grt built in 1915. The vessel was hired by the Admiralty in December 1915 and served until 1919 as a minesweeper and then as a hydrophone vessel, running under Admiralty pennant 1975. It was armed with a single 12pdr weapon (www.naval-history.net: Hene Castle).
**SS Carronmore**

It has not been possible to find further information on this vessel (possibly due to the potential for misspelling the name).

### 3.5 People Associated with the *Eleanor*

As the sole survivor of the crew, Barton Hunter became a focal point for those requesting information, particularly relatives and family of those lost as they sought some form of closure in their loss. Personal letters requesting such information are held by the daughter of Barton Hunter, Mrs Jean Rudden, who kindly made them available to Dave Wendes and the Maritime Archaeology Trust (See Section 8.2). Those who died on *SS Eleanor* are remembered with pride on the Chatham, Portsmouth and Plymouth Naval memorials. It is clear from Barton Hunter’s reports of the attack of hearing shouts from other crew members that several others survived the attack and floated in or on wreckage for some time, but it seems they were unable, through cold, exhaustion or injury to survive in the water until the rescue vessels arrived.

Barton Hunter was 21 at the time of the attack and was the 2nd Mate/Officer of *Eleanor*, having previously served on ships such as the HM Trawler *Taranaki* in 1917. After the attack, sinking and rescue Hunter was afforded a week’s leave and then went back to sea, serving on convoys in the North Sea (pers. comm. Jean Rudden, Hunter’s daughter, D. Wendes collection).

Figure 3: Sub Lt Barton Hunter. July 1917 (courtesy Mrs Jean Rudden)

Figure 4: Barton Hunter (front right) and crew mates. HMT *Taranaki* 1917 (courtesy Mrs Jean Rudden)
He survived the war and continued a maritime career. He married in 1937.

In 1953 Barton Hunter took part in the Naval Review at Spithead on board MV *Falconer Birks*.
Barton Hunter retired from the sea in the early 1960s.

Little could be found relating to other members of *Eleanor’s* crew, though online reference was found to a Great War February 1918 casualty medal group awarded to Paymaster A.E. Morton, Royal Naval Reserve (Figure 8).

![Casualty Medal Group for Paymaster A.E. Morton](image)

**Figure 8: Casualty Medal Group for Paymaster A.E. Morton**

Kenneth Macaskill (Figure 9) from Stornoway is commemorated on the Chatham Memorial (panel 30) and on the Armistice Tribute webpage, Parish of Lochs.

![Kenneth Macaskill, RNR](image)

**Figure 9: Kenneth Macaskill, RNR**

The Forgotten Wrecks project has created a ‘community’ as part of the Lives of the First World War (LoFWW) digital memorial, to commemorate the crew of SS *Eleanor*. It can be found at: [https://livesofthefirstworldwar.org/community/1203](https://livesofthefirstworldwar.org/community/1203)

The Maritime Archaeology Trust wishes to gratefully acknowledge and thank David Wendes for access to his collection of research, papers and artefacts of the SS *Eleanor* and for their use in and contribution to the LoFWW Eleanor community and this report.

### 3.6 Post-loss Activity

Immediately upon notification of the loss, the Admiralty set about as much salvage as possible and some 97 mines were recovered from the wreck. These were taken to Portsmouth and destroyed (Wendes 2006).

In 1974 the site (believed at the time to be the combined sites of the *Ajax* and *Coquetdale*, both bombed in 1940) was swept clear at a depth of 30m with a least depth of 31.2m and general depth of
36.5m recorded, along with no scour and an approximate length of 122m, lying approx. 100/280 degrees.

By 2002 scour of 1.1m is reported and the wreck described as being in two main parts (58m x 33m and 60m x 35m).

4. Seabed Remains
4.1 Site Location and Environment
The wreck thought to be Eleanor lies approximately 10 miles south west of St Catherine’s Point, Isle of Wight (Figure 10). It lies upright at a depth of approximately 40m, standing 7m proud of the shingle seabed, abundant marine life is present, including a variety of fish, lobsters, crabs and conger eels.

![Figure 10: Location of the wreck of Eleanor](image)

4.2 Archaeological Methodology
The site assessment of the wreck of Eleanor included MAT dives which aimed to establish the nature and extent of surviving remains and:
- Undertake a photographic survey of the forward and aft cargo areas;
- Photograph and record identifiable features on the wreck, including boiler area; and
- Complete a measured survey of the site.

4.3 Description of Surviving Vessel Remains
Sidescan survey data from the Navitus Bay Wind Park project (Figure 11) provides a useful overview of the site, which can be seen to be in two main parts, bow to the west, stern to the east, covering an area approximately 107 x 39m. It looks as if the vessel broke its back as a result of the torpedo attack. The two boilers and engine can clearly be seen to the east of the forward section and substantial heaps of cargo are apparent immediately forward of the boilers and in most of the aft section of the wreck. Extant hull plating can be seen on the starboard side of both forward and aft sections and the steering quadrant can be seen, standing proud of the seabed at the stern.
The dive team, visiting the site in 2014 found conditions of extremely limited visibility. Considerable amounts of ship structure and cargo survive in both sections of wreckage, which were recorded in more detail during dives in 2017.

**Figure 11: Sidescan sonar images of NB1046 (Navitus Bay Wind Park 2013)**

### 4.3.1 Forward/west section of wreck

The mid-section break was identified, the forward section containing the boilers and engine (at the eastern end) and a pile, standing approximately 6-7m proud of the seabed, comprising spherical mines and depth charges (Figure 12 & 13): part of *Eleanor’s* cargo. The outer casings of the mines and depth charges are corroded, broken and show signs of concretion in places. The explosives having washed away long ago.

**Figure 12: Mines photographed with powerful lights, corrosion of the munitions is evident ©Michael Pitts**
Conditions were such that it was not possible to take measurements which might have enabled identification of the type of mine (B.E. or Naval Spherical Mk III – see Section 3.3).

In Figure 13, two depth charges can be seen lying next to each other and some spherical mines. Only the end (right side) of the outer cylindrical canister of the depth charges survives, revealing an inner tapered cylinder which held the charge.

The measured site plan (Figure 14) produced following the dives in extremely low visibility in 2014 shows a simplified representation of site layout.

In the forward section of the wreck there are piles of collapsed hull plating with rivet holes. A bulkhead survives, approximately 19m forward of the boilers and the hull plating on the starboard side of the vessel is still vertical in places (Figure 14).
4.3.2 Boilers
The two single-end, three-furnace Scotch boilers are intact and well-preserved, lying side by side at the eastern end of the forward section of the wreck (Figure 15).

![Figure 15: Forward end of boilers](image)

In the forward end of each boiler, the end of the stays, tubes and three furnace fronts can be seen. A jumble of ship structure and machinery is piled up immediately forward of the port boiler. The central and left furnace fronts and fire/furnace-doors are no longer attached (Figure 16).

![Figure 16: Forward end of port boiler](image)

On the starboard boiler (Figure 17), the central furnace front with fire/furnace-door has broken off but lies immediately in front of the central ash-pit, with coal from Eleanor’s final voyage visible inside. The furnace front (left of Figure 17) is missing its fire/furnace-door.
The riveted construction of the boilers can clearly be seen (Figure 18).

And both boilers are still seated on their cradles (Figure 19).
In the top of the starboard boiler, towards the aft end, the boiler manhole can be seen: a circular hole, with surrounding riveted reinforcement plate (Figure 20).

Forward of the riveted mid-join of the same boiler, is the fitting for the boiler’s safety valve (Figure 21).
Eleanor’s engine, leaning to port, lies immediately aft of the boilers (Figure 22).

The engine is a three-cylinder triple expansion built by J. P. Reynolds and Son of South Shields. The cylinder heads have collapsed over and lie upside down on the starboard side of the crankshaft. The underside of the engine’s cylinders are now uppermost. High-pressure cylinder nearest to the boiler is shown in Figure 23. The connecting rods on the high-pressure and intermediate cylinders are no
longer attached but in the case of the low-pressure cylinder (aft) the connecting rod is still attached to both crankshaft and cylinder, the rod being bent over (Figure 22 to 24).

Figure 23: Engine from port side. Centre foreground: crankshaft bearing for the low pressure cylinder. The connecting rod is still attached to the cylinder. The cylinders lie upside down in background.

Figure 24: Engine from starboard side, cylinders bent over so the top of the cylinders are now on the seabed. HP cylinder to right/forward. Boiler in background to the right.

Between the bow and stern sections of the wreck, is a relatively flat area comprising mostly sandy seabed, with scattered cargo and parts of ship structure (Figure 25). This is presumably around the position of number three hatchway, where the torpedo hit the ship in 1918 (see Section 3.3).
In the stern section of the wreck, parts of the hull and deck are relatively intact, in places sections of hull plating have collapsed inwards onto the deck (Figure 26).

On the port side, aft of the boilers, a pair of double bitt inclined bollards survive (Figure 27).
Parts of *Eleanor’s* decking are well preserved in this area (Figure 28).

Under the deck, beneath the bollards, metal bars with a circular cross-section are stacked (Figure 29), these possibly relate to *Eleanor’s* cargo of firing levers or mine pistols (see Section 3.3).
Figure 29: Metal bars stored below deck in forward section of wreck, possibly firing levers or mine pistols

A deck winch survives approximately amidships in the aft section of the wreck (Figure 30).

Figure 30: Winch, amidships in the aft section of the wreck

In the area close to the winch, considerable sections of deck survive (Figure 31).
And where the deck is missing, the prop shaft can be seen running down the centreline of the ship (Figure 32).

Another area in the aft section of the wreck is packed with smaller items of cargo (Figure 33).
At the stern of the wreck, a prominent unidentified feature protrudes from a pile of cargo stacked in this area of the ship (Figure 34). Significant amounts of hull plating survives in this area (Figure 35).
In the stern of the wreck, piles, comprising considerable numbers of square boxes with holes in, are visible. In some cases the box casing has corroded away and an internal reel wound with line/cable (possibly rope or chain) can be seen (Figure 36).
Figure 36: On the left a relatively intact box, centre: a reel wound with cable inside a damaged box

The boxes are of metal construction, with bolts or rivets apparent around the edges (Figure 37). Approximate dimensions of the boxes are 65cm x 65cm x 50cm (Figure 38).
They are found in large concentrations at the stern of the ship, being some of the 600 Mark VI mine sinkers, recorded in *Eleanor’s* cargo manifest (see Section 3.3, Figure 2, 39 & 40).
While sometimes appearing to be in disorganised piles, in places the cargo can be seen to be stacked (at least 3 layers deep in places) and arranged within the ship structure (Figure 41 - 43).
Amongst the cargo are sections of metal bar, circular cross-section, possibly related to the firing levers or pistols for mines listed in *Eleanor’s* cargo manifest (Figure 44).
5. Recovered Artefacts
Artefacts listed on Pastscape as having been reported to the Receiver of Wreck during the wreck amnesty 2001 included:

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<th>Position</th>
<th>Recovered artefacts</th>
<th>Droit Number</th>
</tr>
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<tr>
<td>10 miles from the Needles lighthouse</td>
<td>A lamp, a valve and steering indicator, recovered from this wreck</td>
<td>Droit A/932</td>
</tr>
<tr>
<td>50 30.04N 001 40.35W</td>
<td>A brass stand with an internally threaded mount on top and tripod base, &quot;PB Ltd.&quot; embossed on the top</td>
<td>Droit 222/04</td>
</tr>
<tr>
<td>50 30.110N 001 40.427W</td>
<td>An unidentified brass &quot;tripod&quot;, possibly a component part of WWI mine</td>
<td>Droit 332/07</td>
</tr>
<tr>
<td>Wreck of Eleanor (2011)</td>
<td>A porthole</td>
<td>Droit 201/11</td>
</tr>
</tbody>
</table>

Photographs of three of these artefacts were obtained during the project (Figure 45).
The artefacts identified as having been recovered from the wreck of *Eleanor* include typical ship fixtures and fittings (porthole, steering indicator), the oil lamp is a particularly fine example of shipboard light technology of the period. Other artefacts relate to the military cargo of mines and depth charges. Further study of both categories could provide information on steamship technology, fixtures, fittings and materials used in the years leading up to and during the First World War. In
addition, comparison of these artefacts with material from other wrecks could help with the identification of currently unidentified sites.

6. Site Significance & Potential Further Research

In 2011, Wessex Archaeology undertook an archaeological desk-based assessment of boats and ships (surviving and wrecks) dating from 1914-1938 (Wessex Archaeology 2011). The report identified in the whole of England dataset, only 17 of 868 cargo vessel wrecks with an auxiliary military role. SS Eleanor is one of these wrecks and therefore represents a rare example. This fact, combined with the significant loss of life and unusual nature of the cargo, makes the Eleanor a site of particular archaeological interest and significance.

Further study could contribute to knowledge of arms and explosives, ship technology and adaptations for military use and how such cargoes were carried on board.

Eleanor’s cargo is of great interest, providing rare and in some cases unique examples of fittings and devices essential to the anti-submarine activities in the First World War. There were more than 1,400 mines amongst the cargo at a time when 6,800 British mines were being laid a month (Friedman 2011), plus devices and mechanisms that were at the forefront of the rapidly developing ASW technology during the First World War. Obtaining measurements of the spherical mines, should enable the distinguishing of B.E. from the Standard Naval mines. The cargo includes hundreds of Mark VI mine sinkers, some relatively intact, others with the external box missing, providing a unique opportunity to examine the internal arrangements. Detailed recording of the cargo and comparison with Eleanor’s cargo manifest, could greatly enhance the knowledgebase in this area.

7. Bibliography

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http://www.graptolite.net/vapeur/Eleanor.html


http://www.minerals.net/mineral/sal_ammoniac.aspx

www.navitusbaywindpark.co.uk/sites/default/files/users/shared/pei3_ch14_offshorearchaeology.pdf


Books & Documents


Lloyd’s Register of Ships 1916/17


The National Archives, ADM 137/1475 – Report on the loss of SS Eleanor

The National Archives, ADM53/44157 - Hene Castle (escorting trawler) log extract

The National Archives, MT25/26 - Eleanor cargo manifest


8. Appendices

8.1 Video relating to Eleanor:

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<th>Publisher</th>
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<td>Hamish Morrison</td>
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<td>Standard YouTube License</td>
<td>Dive footage</td>
</tr>
</tbody>
</table>

A 30 minute dive on the aft section of the wreck in very dark conditions.

00:12 possible crank pit from engine
00:34 ships machinery
00:55 possible inner workings of depth charge/mine & possible mine-anchoring devices

8.2 Letters received by Barton Hunter following the loss of Eleanor

The following collection of letters was kindly provided by Mrs Jean Rudden, daughter of Barton Hunter, the sole survivor of the sinking of Eleanor.
37 Dollar Buildings

Shadwell

E.1.

March 3rd 1918.

Dear Sir,

Having by the kindness of the Admiralty received your name and address, I must first of all congratulate you on your fortunate escape from death when the "Ticonder" was torpedoed. I as wife of one of the crew, James Howard Richard Horley, A.B., would be grateful for a few lines from one who was presumably the last living person to see my husband alive.

I remain,

Your Faithfully,

S.A. Horley.

W.B. Sander
2nd Mate, M.B.
Go Admiralty.
5/3/18

Mr. Hunter

Dear Sir,

Could you oblige with any information regarding the death of my brother A.C. [illegible] which ship we understand was torpedoed on the 12th [illegible] t a four name was given as a survivor.

His death came as a great shock to us and any news regarding same would be most thankfully received.

Apologising for any undue liberty taken in thus addressing you yours faithfully

H. R. Hunt
14, Orange Street
Swansea
13-3-18

B. Hunter
Dear Sir,

After a delay, I have your address from the Admiralty and will take it as a great favor if you can give me any particular facts as to how my Dear Son Albert, R. Backwall's, the cabin boy of the ill-famed, met his death.

I may say that I am a seafaring man myself and on behalf of my wife (the boys broken-hearted mother) we would like to know that he had suffred no pain. You will understand I enclose our address.

Thanking you in anticipation for same and trusting that you are all right again yourself.

Believe me to be

Yours affectionately

J.R. Backwall's
From: L. Theresa Morton, 25 Kingsthorpe Road, Sydenham, London SE26
Dated: Feb. 28th

Dear Mr. Hunter,

Pardon the liberty I am taking in writing you, but I have heard from a reliable source that you were the only survivor of the disaster which overtook H.M.S. Eleanor on Feb. 12th. As possibly you know my husband Paymaster A. C. Morton was serving on that ship. The Admiralty give one no details, and I thought perhaps if you were able after such a terrible experience, to give us a few, you would be kind enough to do so. I think it would ease his poor old Dad’s sorrow a little. How splendid you all were, I realized when I wished him a last goodbye. It seemed to me then that the possibility of certain death was very very near, knowing what a dreadful cargo /you
COPY LETTER

Letter from L. Theresa Morton (Contd.)

you carried. But still I hoped all would be well.

Thanking you in anticipation,

I remain, Yours truly,

L. Theresa Morton

From: Mr. & Mrs. Daniels, Warren Cottage, Cromer, Norfolk

Dated: March 4th, 1918

Mr. H. Hunter

Dear Sir,

I hope you will pardon me writing to you, but receiving the very sad news of our dear son, Ernest John Daniels, E.R.A. who lost his life through the sinking of H.M. E.A. "Eleanor", we should be thankful for any information of him, as far as you are able to tell us. It came as a great blow to us, only receiving a letter from him two days before. We truly sympathise with all others who have lost their loved ones and we trust you are recovering from the awful shock it must have given you.

May God bless and comfort you,

From his sorrowing Father & Mother,

Mr. & Mrs. Daniels
From: Margaret Henderson, "Woodend", 125 Sussex Road, Southport
Dated: March 6th, 1918

Dear Mr. Hunter,

I am Sig. Donald Rose's fiance and I feel I would like to write and thank you for the information you gave his brother yesterday.

It is too terrible to realize that I will never see him again but I'm glad to say I was with him all the time you were in Grimsby.

If ever you are in Liverpool or anywhere near Southport I would very much like you to come and see me as I feel I would like to see you very much seeing you were really the last person to see him alive.

If I had felt at all able I would have come North to have seen you but hope someday I may see you here.

I hope you may have the very, very best of luck on all your future voyages.

With every good wish,

Yours sincerely,

Margaret Henderson
G. D. Greenwood

From 191.

MINISTRY OF SHIPPING,
ST. JAMES'S PARK,
LONDON, S.W.1.

Dr. W. Hunter,

By a strange coincidence I was
receiving your address when your letter of the 17
regarding the loss of ships reached me.

My department only deals with merchant ships,
but I am putting your letter in the right channels.

You will probably recognise by the name
that my brother was 1st Steward on the "Olive"
and while we feel there is little or no hope,
I am writing to ask if you can give me any
news, however small.

I already know where the ship was sunk
but if you could tell me anything further, I
should be extremely grateful.

Also if you come to Yarmouth, would you give
me a call.

Thanking you in advance
Your faithfully
G. Greenwood
COPY LETTERS


Dear Mr. Hunter,

By a strange coincidence I was requiring your address when your letter of the 19th regarding the loss of effects reached me.

My department only deals with Mercantile ratings, but I am putting your letter in the right channels.

You will probably recognise by the name that my brother was Asst. Steward on the "Eleanor" and while we feel there is little or no hope, I am writing to ask if you can give me any news, however bad.

I already know where the ship was sunk, but if you could tell me anything further, I should be extremely grateful.

Also if you come to Town, would you give me a call.

Thanking you in advance,

Yours faithfully,

G. D. Greenwood