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The National Importance of Cargo Vessels

Tees Pilot

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Antony Firth, Director of Fjordr Limited and Peter Rowe, Archaeologist (Planning) of Tees Archaeology carried out the project and prepared this report. Additional assistance was provided by Ian Whitehead, Keeper of Maritime History at Tyne & Wear Archives & Museums.

This project relies heavily on the input of numerous people who have recorded ships wrecked off the Tees, including contributors to the Tees Archaeology Historic Environment Record, to HE's National Record of the Historic Environment, and to the website Wrecksite. These contributions are fundamental to recording cargo vessels and to considering their importance; we would like to gratefully acknowledge the effort of all such contributors over the years.

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Executive Summary

This project is intended to help identify and assess the significance of post-1840 cargo vessels, which are by far the most frequently encountered marine heritage asset as reflected in the National Record of the Historic Environment.

The project has developed a mechanism for identifying important cargo vessels through a pilot study off the Tees, from Blackhall Rocks to Staithes.

The intention of the mechanism is to identify cargo vessels that are of national importance and to facilitate the preparation of statements of significance. The mechanism works by providing a clear articulation between the physical fabric of individual cargo vessel wrecks and the overall context within which they were built, used and lost. The mechanism focuses on five sets of narratives that are key to understanding post-1840 cargo vessels, to communicating their importance to the public, and to selecting examples that might warrant a heritage management response. The five narratives are construction, motive power, trade, life on board and the relation to England's history, encompassing the entire spectrum from international to local.

From an initial dataset of 58 wrecks, 37 cargo vessel wrecks have been considered in detail in the course of this pilot. Of these, 16 were considered to be sufficient interest to warrant the preparation of Statements of Significance, of which seven have been prepared to accompany this methodological pilot.

The mechanism has been effective in discerning wrecks that *could* be nationally important, subject to field results. The selected wrecks represent and illustrate several key themes in cargo shipping both regionally and nationally; their significance is certainly sufficient to be taken into account in decision-making. At least some of the wrecks appear to have at least equal claim to national importance as otherwise comparable military, maritime, transport and industrial assets on land.

The lack of substantive consideration afforded to post-1840 cargo vessel wrecks as a type of heritage asset is difficult to justify given their importance to so many strands of England's history. This project has sought to tease out the multiple strands of significance relating to design and technology, shipbuilding, commerce, seafaring and total war. It is hoped that post-1840 cargo vessel wrecks will start to be regarded as distinct, individual assets that provide a tangible connection to the principal themes of the history of the nineteenth and twentieth centuries, rather than as anonymous multiples amongst a meaningless mass of dots.

The project has been carried out as a collaboration between Fjordr Limited and Tees Archaeology – with additional assistance form Tyne & Wear Archives & Museums – on behalf of Historic England.

The National Importance of Cargo Vessels:
Tees Pilot

Fjordr 16261 / HE 7051

1. Background

1.1. Initial Proposal

This project originated as a response to a Call for Proposals[1] from English Heritage (now Historic England, HE) relating to the National Importance (NI) Programme, to explore how a shared understanding and mechanism might be created to identify non-scheduled but nationally important sites. Accordingly, a proposal[2] was submitted for a pilot project to address mechanisms for distinguishing nationally important sites amongst the very large class of marine assets referred to as merchant vessels. The proposal was intended to draw upon local government archaeology service experience of coastal and marine contexts, focussing on heritage assets in the marine area from Blackhall Rocks to Staithes, encompassing the mouth of the Tees and the coasts of Hartlepool and Cleveland (Fig. 1).

The proposal was not accepted as part of the NI Programme, but HE responded to the effect that they would like to take the proposal forward under the National Heritage Protection Programme (NHPP) Activity 4H1 on submerged heritage assets and landscapes. A Project Design[3] was developed that was based on the earlier proposal but reflected the particular focus of NHPP Activity 4H1 and the need to inform work on post-1840 ships. The Project Design anticipated that elements of the project would feed back to the NI Programme in due course and that although concerned principally with non-designated assets, the project would also be capable of informing the selection of candidate assets for designation.

1.2. Non-Designated Heritage Assets

This project addresses non-designated heritage assets that may be of national importance. The marine historic environment is predominantly made up of non-designated assets in large numbers. Trying to understand the significance of these non-designated sites is central to heritage management, both from a curatorial point of view and from the perspective of developers and public authorities.

In the marine sphere, the UK Marine Policy Statement (UK MPS – HM Government 2010) – which is binding on all public authority decisions affecting the marine area – includes express policies on the historic environment. It states that heritage assets should be conserved 'in a manner appropriate and proportionate to their significance' (para. 2.6.6.3). It goes on to set out a specific policy on non-designated sites (para 2.6.6.5):

> Many heritage assets with archaeological interest in these areas are not currently designated as scheduled monuments or protected wreck sites but are demonstrably of equivalent significance. The absence of designation for such assets does not necessarily indicate lower significance and the marine

[1] English Heritage, National Heritage Protection Plan Call for Proposals. Project 6982: National Importance Programme Pilot Projects, May 2014.

[2] dated 23/05/14

[3] dated 05/02/15

plan authority should consider them subject to the same policy principles as designated heritage assets (including those outlined) based on information and advice from the relevant regulator and advisors.

Although the UK MPS sets out a clear policy for non-designated but nationally important assets, the questions as to how these sites are identified, who identifies them, where they are recorded and how information is accessed are all unresolved.

The situation with respect to non-designated but nationally important assets is perhaps more acute in the marine area than on land for a number of reasons:

- Very few heritage assets have been designated at sea, so non-designated assets form a bigger proportion of the total. The small number of designations and their management history – combined with a lack of programmatic approaches to designation in earlier decades – also makes it difficult to draw conclusions about importance based on previous practice.
- There have been no sustained attempts to develop 'Local Lists' of locally valued marine heritage assets through the marine planning system.
- The UK MPS applies not only to the Territorial Sea but to the UK Continental Shelf, beyond the area within which heritage assets can be designated. Throughout this vast area, the UK MPS policy on important non-designated assets is a key mechanism for offering protection to significant heritage assets.

1.3. Cargo Vessels

The focus on post-1840 cargo vessels has arisen because this is the largest class of marine heritage assets and is largely undifferentiated. To be clear, the purpose is not to develop an historical analysis of the development of merchant shipping, but to arrive at a mechanism that is capable of dealing with the most commonly encountered physical form of heritage asset on the seabed. Cargo vessels present a particular challenge: they are commonly encountered in casework; they are of central importance to understanding England's story; and they are so numerous that achieving reasoned distinctions relating to national importance has proven elusive.

This project combines two strands of previous work: the pioneering maritime record of the Tees Archaeology Historic Environment Record (HER); and earlier work that has been carried out on the issue of ascribing importance to maritime sites. These two strands are developed in the context of the maritime records maintained and enhanced by the National Record of the Historic Environment (NRHE) and the development of approaches to significance by HE, to ensure that the results of this locally-based pilot are capable of being applied to other local authority areas and the English Zone of the UK Marine Area generally.

The Tees Archaeology HER includes about 1550 records from the marine area between Blackhall Rocks and Staithes. About a thousand of these records are documentary references to vessels that have been lost but for which no physical remains have yet been found (known as documented losses or casualties); and about 450 are known seabed features whose physical character is unknown (fishermen's net fasteners and ambiguous 'wreckage'). This leaves about 100 known physical sites, of which about a half are vessels. Of these vessels, a preliminary review in the course of developing the Project Design indicated that about two thirds are cargo vessels or colliers. The broad representativeness of the Tees Archaeology HER of wider patterns is apparent from the reports of the project *Assessing Boats and Ships* (Wessex Archaeology Feb 2011), which included a quantification of known

wrecks classified as cargo vessels in the NRHE. In both the Tees Archaeology HER and the NRHE, cargo vessel wrecks are more numerous (almost by a factor of two) than the wrecks of all other single classes of vessel put together:

	No. of Known Wrecks	No. of Cargo Vessels	Percentage of Cargo Vessels
Tees Archaeology HER (May 2014)			
	51	34	66%
NRHE (May 2009)			
1860-1913	518	332	64%
1914-1938	1358	868	64%
1939-1950	861	389	45%
Totals	2737	1589	58%

Over the last few years, Historic England has published a *Designation Selection Guide for Ships and Boats* (English Heritage May 2012), supported by two *Introductions to Heritage Assets* for the periods prehistory to 1840 (English Heritage May 2012) and 1840 to 1950 (English Heritage May 2012), all underpinned by English Heritage's *Conservation Principles* (English Heritage April 2008). These documents provide a comprehensive overview of the character and chronology of ships and boats, and the specific considerations used for designating vessels as scheduled monuments or protected wrecks. Although these documents address cargo vessels, the detail that they can provide is necessarily limited given the overall range of shipping that they consider. Approaches to addressing national importance that regard cargo vessels as just one category amongst many are unlikely to properly reflect the overall importance of cargo ships as a component of the archaeological record; or to devote sufficient effort to appreciating specific forms, functions and narratives within this class.

Equally, previous designations do not provide a useful guide with respect to cargo vessels. The list of wrecks that have been designated is concentrated on earlier centuries; there are only a few instances from the mid-nineteenth to mid-twentieth century. Only the scheduled remains of the *Harriett*[4] (built primarily for inland waters) (LEN 1021451) and the protected Wheel Wreck[5] (which comprises cargo rather than the ship itself) (LEN 1000086) and Thorness Bay wreck[6] (a sailing ship) (LEN 1402103) might be said to represent cargo vessels in the period when they are most numerous in the archaeological record. None of them are comparable to the steam cargo vessels most commonly encountered.

1.4. Impact

This pilot project is intended provide a mechanism for identifying non-designated but nationally important sites at sea, which is relevant to a wide range of stakeholders. As well as having direct application to Historic England and DCMS in respect of heritage protection nationally, HE advises the Marine Management Organisation on plan-making and marine licensing, which are both subject to the UK MPS policy on non-designated assets.

[4] https://www.historicengland.org.uk/listing/the-list/list-entry/1021451

[5] https://www.historicengland.org.uk/listing/the-list/list-entry/1000086

[6] https://www.historicengland.org.uk/listing/the-list/list-entry/1402103

In parallel, marine developers have to anticipate the implementation of the UK MPS policy on non-designated but nationally important marine assets in preparing and assessing their own proposals. In turn, this means that archaeological consultants and contractors must routinely seek to distinguish which marine assets may be of national importance within a particular development footprint.

Under s. 58 of the Marine and Coastal Access Act (MCAA) 2009, decisions affecting the UK marine area by all public authorities must either accord with or have regard to the UK MPS. Consequently, a very wide range of agencies and organisations must also be able to apply the UK MPS policy relating to non-designated sites.

In nearshore areas, assets in intertidal areas and sub-tidal areas within local authority boundaries are of direct concern to local authorities themselves in implementing policies relating to the significance of non-designated assets in the National Planning Policy Framework (NPPF – para. 135).

The significance of non-designated assets is also a concern in respect of other locally-based marine management measures, such as the responsibilities of local-authority-affiliated Inshore Fisheries and Conservation Authorities (IFCAs) towards features of archaeological or historic interest by virtue of s. 186(1) of the Marine and Coastal Access Act 2009.

In sum, the question of non-designated but nationally important heritage assets in the marine sphere – especially for post-1840 cargo vessels – is both underdeveloped and highly relevant to decision-making by a wide range of organisations.

It should be noted that the mechanism developed for this project is built on the existing infrastructure for heritage information and is intended to be applicable beyond the geographical scope of the pilot, irrespective of local authority area. Although references are made to ‘recording and mapping’, these reflect the need for the mechanism to present a transparent evidence-base. The project has not sought to create or develop a separate permanent database.

2. Research Aims and Objectives

The aim of the project is to develop a mechanism for identifying, recording and mapping heritage assets that are of national importance amongst the broad class of assets referred to as cargo vessels dating from the post-1840 period.

The objectives of the project are as follows:

O1 To rapidly compile available data on the character of the population of marine heritage assets in the Study Area, focussing on known wrecks of cargo vessels.

O2 To review and correlate existing mechanisms for attributing importance to marine heritage assets in England, based on the *Designation Selection Guide – Ships and Boats: prehistory to present* (English Heritage May 2012).

O3 To apply the correlated mechanism to available data of the population of post-1840 cargo vessels and review the results in order to identify:
- whether the mechanism is effective in discerning nationally important non-designated assets;
- if there might be any barriers to transferring the mechanism to other circumstances;
- what sources of additional data would enhance the mechanism's effectiveness in identifying, recording and mapping nationally important assets.

O4 To report and disseminate the results of the pilot.

3. Preliminary Selection of Vessels

O1 To rapidly compile available data on the character of the population of marine heritage assets in the Study Area, focussing on known wrecks of cargo vessels.

The project is limited to 'cargo vessels' – vessels that carry goods – rather than 'merchant vessels', which is a term that also encompasses passenger ships such a passenger liners and ferries. In actual practice there is not a rigid distinction between the maritime transport of goods and of passengers, but this project focuses on the wrecks of those vessels whose principal use was in the transport of cargo.

In addition to the thematic criterion 'cargo vessels', two other criteria were used: one chronological – post-1840; and one geographical – the Study Area.

The use of a date criterion carries an implicit assumption that each wreck has been dated, which – in practical terms – means that only those wrecks that have been identified (i.e. where the wreck has been linked to a named loss) are within the scope of the assessment. In the absence of any other approach to dating – such as some kind of fieldwork – wrecks that are known but as-yet unidentified are, in effect, undated. Hence, wrecks that are known but unidentified fall outside the scope of this project, even though it is very likely that some – perhaps a clear majority – of these known but undated sites are in fact post-1840 cargo vessels, some of which might be of considerable importance.

Based on preliminary work, the Project Design anticipated 35 post-1840 cargo vessel wrecks in the Study Area.

Collation of HER and NRHE records generated an overall list of 58 wrecks, including some that had multiple identifiers where there was uncertainty over position, for example. The wrecks recorded in the NRHE and HER did not coincide completely: the HER had eight wrecks not in the NRHE; and the NRHE had 12 wrecks not in the HER.

The list of 58 wrecks formed a starting point but it was evident that the list could not be taken completely at face value. Consequently, the data was reviewed in a series of passes.

The first pass was to confirm the records against the scope. As this exercise was for post-1840 cargo vessels in the Study Area, then any vessels that had been selected without fulfilling these criteria were removed. The geographical criterion was provided through the GIS; only one wreck – *Vestra* -- was eliminated on this basis. However, four wrecks proved not to be cargo vessels as such:

- *Wallsend* (HER 3124 / 908832) – a tug;
- *Tees Hopper No. 3* (HER 3143 / NRHE 908853) – a hopper barge;
- HMS *Lochiel* (HER 3201 / NRHE 908824) – a requisitioned passenger ferry;
- *Afridi* (HER 3138 / NRHE 908848) – a decommissioned destroyer.

The tug *Wallsend* and *Tees Hopper No. 3* are best recorded using the maritime craft type Service Vessel not Cargo Vessel and it is suggested that their HER and NRHE records are amended accordingly.

Lochiel was being used as a patrol vessel when lost and is sometimes referred to as a trawler or as 'HMT'. However, *Lochiel* was built and used as a MacBrayne passenger ferry and mail boat in the Scottish islands before it was requisitioned. Although it had a small

forward hold it would be better to record it using the maritime craft type Passenger Vessel rather than Cargo Vessel in respect of its former use, and it is suggested that the HER and NRHE records are amended accordingly.

Afridi was a Tribal Class destroyer launched in 1907, serving throughout the First World War as part of the Dover Patrol. After the war *Afridi* was sold for scrap and was partly dismantled before being lost on the way to breaking. *Afridi* would be better recorded as maritime craft type Warship and Destroyer instead of Cargo Vessel. It is suggested that the HER and NRHE records are amended accordingly. The record for *Afridi* may warrant enhancement as a relatively rare survival of a Tribal Class destroyer, and in view of its active wartime role in the Dover Patrol.

All of the wrecks satisfied the post-1840 date criterion, but two further wrecks were excluded from the scope of the assessment on chronological grounds, as follows:

- *Guildford* (NRHE 1525223), built in 1953, sunk in collision in 1954 and dispersed to ground level (now charted only as foul)
- *Stora-Korsnas-Link-1* (NRHE 1525379), built in 1971 and lost in 1991 following a fire.

Although no end date was set for the scope of the project, it became apparent that the inclusion of vessels built after the Second World War would be exceptional to the rest of the cargo vessels under consideration. The wrecks of modern vessels are relatively rare and given the very great changes in construction and the shipping industry since 1945 it would have been difficult to incorporate these vessels within the assessment. It is certainly possible that the wrecks of cargo vessels built post-Second World War could be regarded as important, but it is suggested that such potential importance would be better gauged in relation to modern vessels – probably nationally in view of the low numbers – than in relation to those built in 1840-1945.

In summary, a total of seven wrecks (one outside the Study Area; four non-cargo vessels; two vessels built post-1945) was excluded as being out of scope during the first pass.

The second pass was to establish whether the records actually related to physical remains on the seabed. The query focussed on known wrecks rather than casualties (recorded losses) so it might be assumed that all of the vessels are represented by material on the seabed. However, on reading the descriptions it was clear that in some instances the presence of physical material was equivocal. In some instances, recorded losses that have been given credence in the past sometimes appear as wrecks rather than casualties. This may be because the UKHO includes some instances as wrecks that would normally be considered casualties in the NRHE, but UKHO records are usually credited with being confirmed features on the seabed. In other cases the survey history indicates that no material has survived or been identified, or that the wreck has been removed. In other cases, the apparent absence of physical material might be attributable to changing sediment levels or other processes, which do not preclude the possibility that material may still be present. Decisions about the presence of wrecks based on descriptions require the exercise of judgement, and in this case it was decided that 14 wrecks[7] were not sufficiently confirmed as comprising physical material that was capable of being assessed for its importance:

[7] A further cargo vessel wreck, additional to the list of 58, was noted at this stage, namely the *Guildford* lost in 1916 on South Gare (less than one nautical mile from the *Guildford* lost in 1954). The *Guildford* lost in 1916 was mostly salvaged at the time of loss. Although there was material present in 1929 it was not visible in air photographs in 1977, which is the latest reference (UKHO 66500).

Name	HER	NRHE	Reason for exclusion
Stockton Packet	2362	908835	Wooden frames reported in Oct 1927 - no further details
Rising Sun	2473		Last reference to stranded wreck in 1933
Bayadere	2690		Documentary reference only
Teesdale	3020	908181	Identification of wreck uncertain
Heckler	3119	908826	Documentary reference only
Eidsiva	3123	908831	Largely salvaged 1925-1932. Not visible 1977 (latest ref)
Motor Lighter	3133	908842	Last examined 1929 - reported clear
Stirling	3137	908847	Removed from charts 1920
Presto	3140		Documentary reference only
Margaret Sutton	3152	908862	Sank in harbour within dredged area - presumably removed
Flamina	3328		Documentary reference only
Doris	5082		Documentary reference only
Ilse		908859	Dispersed but considered foul in 1943. Foul no longer exists in 1975. After part of vessel was raised and repaired, but sunk by an E-boat off Sea Palling, Norfolk, in 1942.
Carl	3147	908857	Identification of wreck uncertain

The second pass, focussing on the presence of identified wreck material on the seabed, involved a number of iterations, considering first the HER data, then the NRHE data, and then external sources – notably Wrecksite[8]. Wrecksite records often incorporate two key sources of information relating to the presence of material on the seabed: first, the up-to-date UKHO survey history, which can include observations from relatively recent commercial hydrographic and geophysical surveys; second, observations added directly by divers. Although HER and NRHE records may contain observations derived from the UKHO survey history, such observations were often harvested at a point-in-time that is now rather dated (1992 in the case of the NRHE, for example). HER and NRHE records may also include diver reports, including reports made via the Receiver of Wreck, but Wrecksite has also benefitted from being one of the main tools used by divers on the North East coast in their particular efforts to identify local wrecks. Developing HERs and the NRHE to reflect more detailed and recent information of what is actually on the seabed is a priority both for the 'sifts' described here and – as will be noted below – for the assessment of importance.

No attempt was made to resolve or improve wreck positions in the course of either the first or second pass. The focus of this assessment is on the importance of cargo vessel wrecks, not necessarily their position. It was considered sufficient for there to be reasonable certainty about the presence of a wreck and its identification in order to progress the assessment; discrepancies of tens or even hundreds of metres in the position of the wreck were unlikely to change their importance. Nonetheless, if further evidence came to light that undermined or changed the identification of a particular wreck with a particular ship – which could be a result of uncertainty in position[9] – then this would of course alter the assessment of its importance.

[8] http://wrecksite.eu/

[9] Several wrecks in the Study Area have 'changed identity' as a result of successive investigations; further changes may certainly occur.

The 14 wrecks excluded on the second pass together with the seven excluded on the first pass brought the number of wrecks for assessment down from 58 to 37. These 37 vessels are listed alphabetically below:

Name	HER	NRHE	
Adine	3151	908861	
Afrique	3202	909237	
Anboto Mendi	3168	909238	
Ardgantock	3079	908609	
Audax	3167	936953	
Birger	1848		
Burnhope	3145	908855	
Carlo	3128	908837	
Clavering	3131	908840	
Commercial	3193	908599	
Corsham	3141	908851	
Dimitris	5046	1525222	
Earl Percy	5091	908827	
Ellida	2559		
Empire Bay	3148	908858	
Enterprize	2124	908822	
Erich Lea	3163	909233	
Ernrix	3127	908836	
Harraton	3135	908845	
Hartley	2356	908825	
Harvest	3129	908838	
Hawkswood	3134	908843	
Hercules	2323	908593	
John Miles	3122	908830	
Kilkis	3150	908185	1458320
Lemnos	3125	908833	908834
Maindy Hill	3153	908863	
Mile End	2687	908187	908869
Montauban	3121	908829	
Moorwood	3118	908598	
Ocean	3155	908865	
Pandora	5092	1525202	
Patria	3156	908866	
Polanna	3191	908597	
Rutil	3197	908603	
Schladis	2096	936873	
Winga	3161	908860	908871

The third pass of these 37 records comprised an update of the HER records by Tees Archaeology to consolidate existing information from readily available sources, including NRHE Complete Monument Reports, Wrecksite and web-based resources. The enhanced records within the HER provided the basis for the assessment of importance, using a mechanism developed for this project.

4. The Development of a Mechanism for Identifying National Importance

O2 To review and correlate existing mechanisms for attributing importance to marine heritage assets in England, based on *Designation Selection Guide – Ships and Boats: prehistory to present*.

The intention of this part of the project was to develop a practical mechanism that would enable importance to be ascribed to cargo vessels. The Project Design indicated that the emphasis would be on a simple approach that can be applied using readily available data, is transferable to other circumstances and areas, and respects the different aspects of a vessel's biography (build, use, loss). The mechanism was to be robust and transparent, so that the evidence-base for decisions would be apparent.

The mechanism was to draw on current guidance relating to heritage assets at sea and on land, and also be informed by earlier projects considering the importance of ships, notably:

- *On the Importance of Shipwrecks* (EH 3767) (Wessex Archaeology April 2006);
- a draft Selection Guide on *Boats and Ships in Archaeological Contexts* (EH 5383) (Wessex Archaeology Feb 2008);
- *Assessing Boats and Ships 1860-1950* (EH 5693) (Wessex Archaeology Feb 2011).

Although informed by a review, the project was not intended to present a written account of the relevant documentation; but to concentrate on developing the new mechanism with references as appropriate to current or previous guidance.

4.1. Development of Mechanism

On the Importance of Shipwrecks advocated a biographical approach to ships that addressed the following five phases to a ship's biography, sometimes referred to as the BULSI model from the initial letters:

Build	the design and construction of the vessel, including rebuilds and modifications
Use	the history of the vessel's use, up to its final voyage
Loss	the causes and consequences of the vessel going out of use, typically through wrecking or abandonment
Survival	the natural and human processes that occur after loss, including clearance, salvage, collapse, burial etc.
Investigation	the processes through which the vessel becomes known again, through hydrographic survey, archaeological investigation, public engagement and so on.

These phases were not considered to form a strict sequence, noting that vessels can go through numerous phases of build and use, and indeed even loss, re-building and re-use. Nonetheless, importance was thought to be identifiable in each of these phases: from a vessel's build; from its use; from its loss; from its survival; or from its investigation. Importance was considered to be identifiable in one or more dimensions – e.g. local, national, international – where these dimensions were not exclusive nor ranked hierarchically. That is to say, a wreck might be important locally because of the circumstances of its loss whilst also being important nationally because of its build.

In reconciling the BULSI approach with current guidance it would appear that a slightly different approach is warranted. Build, Use and Loss can still be seen as phases because they encompass the key interpretative narratives to which importance can be ascribed. These key narratives will vary according to the type of heritage asset under consideration; in this case, there are key narratives relating to post-1840 cargo vessels that have a bearing on the importance of a wreck in respect of its build, use and/or loss. These key narratives are considered in further detail below, but the general relationship can be represented as follows:

	Key Narratives
Build	
Use	
Loss	

In contrast to the BULSI approach, however, it is suggested here that survival and investigation are not regarded as phases from which importance can arise in itself; rather, survival and investigation have a bearing on the importance that arises from narratives concerned with Build, Use and Loss. To elaborate, a wreck is not important simply because of its state of preservation, but because well-preserved features augment the importance attributable to its build, use or loss. Similarly, importance does not arise from an investigation (or the potential for investigation), but from the attributes of the wreck that have been investigated.

It might be argued that importance can arise from survival and investigation in their own right in some circumstances, from the presence of processes not seen elsewhere for example, or because an investigation was important for the development of the discipline. However, it seems unlikely that such importance would be sufficient to have protection outcomes – such as designation – unless the process or investigation can be related to narratives relating to the wreck itself.

The advantage of removing survival and investigation as phases is that they can be applied across Build, Use and Loss. That is to say the survival and investigation of evidence relating to build, to use, and to loss all become equal sources of importance.

	Key Narratives	Survival	Investigation
Build			
Use			
Loss			

4.2. Application of Existing Guidance

With this reorientation it is relatively straightforward to reconcile the build, use, loss approach with existing principles for selection for scheduled monuments (DCMS October 2013) and protected wreck sites (English Heritage 2010; May 2012):

	Key Narratives	Survival	Investigation
	Period; Rarity; Diversity; Group Value	Survival/Condition; Fragility/Vulnerability	Documentation/Finds; Potential
Build			
Use			
Loss			

Group Value is worth further consideration, because there is a difference between heritage assets on land – which are in locations that have been chosen by their users – and cargo vessels that were moveable in use and are often in a place as a result of unintended calamity. There are, of course, situations where wrecks are in a position that has been chosen (in the case of hulks or vessels employed as blockships, for example), but it might be tempting to consider the position of most wrecks – and any Group Value that results – as an accident of survival. However, even if the immediate location of a wreck is accidental to some degree, the general vicinity is a consequence of decisions made when the vessel was in use, relating to a shipping route or chosen course, for example. The position of the wreck may, therefore, have evidential or illustrative value relating to the vessel's use. Indeed, the place of loss may reflect broad patterns of use and the hazards facing such use, and/or choices taken by the master and crew in the face of calamity that say something about their perspectives and conduct (in running a vessel ashore to save the cargo, or in failures in seakeeping and attentiveness). In short, the position of a wreck is meaningful, and importance can arise from Group Value.

Although the *Principles of Selection for Listing Buildings* (DCMS March 2010) are framed differently, there is a great deal in the guidance that is relevant to cargo vessels. There are two statutory criteria, architectural interest and historical interest. Architectural interest arises from (*inter alia*) design and craftsmanship, and from important examples of types and techniques (displaying technological innovation and virtuosity) and significant plan forms. Historic interest arises where a building illustrates – in its physical fabric – important aspects of the nation's social, economic, cultural or military history, and/or close historical associations with nationally important people. The Secretary of State can also take into account group value and the desirability of protecting specific features. The general principles expand upon these criteria, making reference to age and rarity, aesthetic merits (noting that buildings that are technologically, socially or economically important may have little external visual quality); selectivity (representing particular historical types), and national interest (encompassing significant or distinctive regional traditions). State of repair is expressly excluded as a relevant consideration, noting that 'the Secretary of State will list a building that has been assessed as meeting the statutory criteria, irrespective of its state of repair'. In sum, the criteria and principles applicable to Listed Buildings – architectural, historical, group value, age/rarity, aesthetic, selectivity, national interest – broadly equate to period, rarity, diversity and group value for Scheduled Monuments and Protected Wrecks, mapped here as relating to Key Narratives[10].

As the principles of selection can be mapped to this approach, so too can the guidance provided in selection guides. Guidance relevant to cargo vessels includes not only the Ships and Boats selection guide but also the selection guides for Listing and Scheduling relating to Maritime and Naval (English Heritage April 2011; Feb 2013), Industrial (English Heritage April 2011; March 2013), Transport (English Heritage April 2011; May 2012) and Military Heritage (May 2011; March 2013).

The selection guides bring valuable practical advice to bear on ascribing importance to assets reflecting these themes, not least by providing the broad historical context within which these assets should be regarded. A further benefit from a maritime perspective is the opportunity to achieve coherence and consistency between assets at sea and on land, as

[10] Setting – the surroundings in which a heritage asset is experienced – is not a principle of selection, but it may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral (Historic England March 2015).

well as the recognition that the remains of cargo vessels are as integral to England's maritime, naval, industrial and transport history as those assets that were built on land.

Multiple selection guides are relevant to considering the importance of cargo vessels because each cargo vessel exhibits characteristics that are spread across different types of asset on land. Their maritime and transport character is self-evident, but they are also industrial structures both from the point of view of storing and handling goods, akin to mobile warehouses (see Storage and Distribution, LSG Industrial Structures pp. 13-14) and from the point of view of their machinery, for motive power, for navigation, and for handling their cargoes. They are also industrial places of work for their crews, whilst the crew's quarters are a form of industrial accommodation. In some cases, cargoes may represent manufactured goods, as will the ships equipment and crew's possessions. The military character of cargo vessels may not be immediately apparent, but the greatest losses are associated with the two world wars. They can be regarded as home front civilian structures subject to bomb damage and as sites of commemoration for those who lost their lives (LSG Military Structures: pp. 10-11). However, it should also be remembered that many wartime cargo vessels mounted military equipment for defence, especially defensive guns but also other equipment such as paravanes. There is, therefore, a parallel with other defensive structures such as coastal and anti-aircraft batteries (LSG Military Structures: pp. 8-9).

As well as providing the broad historical context within which the importance of cargo vessels is to be considered, the designation selection guides provide some useful concepts for considering the survival of marine assets, including factors such as completeness, intactness, legibility, 'process flows' (evidence relating to a core sequence of industrial activities), and evidence of rebuilding and repair. There is, therefore, a corpus of practical guidance that is relevant and available to considering the importance of cargo vessels, even if it is not expressed in those terms.

It is, however, historical context that is necessary to give effect to criteria and principles such as period, rarity and diversity. The Listing and Scheduling selection guides provide a starting point. So too does the designation selection guide for ships and boats, even though it is necessarily general because it covers a huge historical range (prehistory to present) and every function and theme. One of the steps taken by this project has been, therefore, to start to draw out the specific historical context of post-1840 cargo vessels by references to a series of 'key narratives'.

4.3. Identification of Key Narratives

Five key narratives have been identified, as follows:

- Construction
- Motive Power
- Trade
- Life on Board
- Relation to England's History

The first four key narratives have a particular relationship to the physical fabric of cargo vessels, as follows:

Construction	hull and superstructure
Motive power	engine, machinery, fittings, bunkers

Trade	cargo, cargo handling, holds
Life on board	domestic and workplace spaces and artefacts

The 'Relation to England's History' narrative encompasses wider national narratives, but may also be international, regional or local. Equally, the relation between a particular historical narrative that extends beyond ships and shipping may be evident in the physical fabric of the wreck at various points – hull; engine; cargo; domestic and so on.

To illustrate, many of the cargo vessel wrecks in the Study Area have a direct relation to the First World War, which is a national and international narrative that goes far beyond the wrecks themselves but in which the war over shipping is a critical component. The First World War may have a physical expression in the place of the wreck as a whole in the wider landscape, in the physical evidence of its sinking (damage from mines or torpedoes), and in adaptations to wartime conditions (defensive armament). Similarly, some of the wrecks in the Study Area were embroiled in the Second World War, which is again a narrative that extends well beyond the fabric of individual wrecks.

A further example of a broader relationship to England's history arises because many of the wrecks in the Study Area – both in wartime and peace – are linked to the export of coal from the region. Again the ships are integral to this critical regional, national and international narrative; and the narrative is also much wider than ships in terms of the communities and physical assets – collieries, pit villages, staithes etc. – that it encompasses. Similarly, the scale, innovation and global implications of North East shipbuilding in the post 1840 period is a narrative that has to be considered in terms of England's overall history, not just in terms of construction and motive power.

To return to the narratives tied more immediately to shipping – construction, motive power, trade and life on board – each narrative has numerous threads with various dynamics that provide a context for understanding the importance of each vessel, and the contribution that the wreck of each vessel can make to understanding and appreciating each narrative. The importance of cargo vessels of this period is augmented because there were so many radical changes underway under each heading, for example:

Construction	Motive Power	Trade	Life on Board
Material: wood; composite; iron; riveted steel; welded steel	Fuel: wind; coal; oil; diesel	Cargo: coal; metal ore; grain; stone; manufactured goods; timber; textiles; chemicals; etc.	Organisation and hierarchy
Production methods: craft; factory; standardisation; industrial relations	Propulsion: sailing rig; paddle; screw	Specialisation: tankers; refrigeration; livestock; fruit	Working conditions
Design; financing	Engine type: simple; compound; multiple expansion; turbine; internal combustion	Business: liners; tramps; coasters	Living conditions
Hull forms; Isherwood framing	Boiler type, construction material, working pressure	Capacity; Macgregor hatches; machinery; port facilities; port organisation; labour	Safety of life

Shipyard histories	Histories of mechanical engineering companies	Shipping lines and company histories	Relation to life ashore; seamen's missions

The intention here is just to demonstrate that highly significant changes were occurring in cargo shipping that were both part of wider changes in the nineteenth and twentieth centuries but which were also contributing to those changes. Cargo vessels exerted a 'pull' on technological development and innovation, but also provided a 'push' by making raw materials such as coal available round the country, by providing imports, and from the wealth that shipping generated, for example. It should also be noted that these developments were not natural evolutions: changes in construction material and motive power, for example, were achieved through a series of human choices, not an inherent inevitability. Such changes occurred at different times and places, indicating circumstances and reasoning that has to be understood in its own terms: the physical fabric of cargo vessels is both a manifestation of these changes, but also a key source of evidence for their better understanding.

These narratives provide for the elaboration of importance in relation to period, identity, diversity and group value which, as indicated above, can be related to build, use and loss:

	Key Narratives					Survival	Investigation
	Period; Rarity; Diversity; Group Value					Survival /Condition; Fragility /Vulnerability	Documentation /Finds; Potential
	Construc-tion (hull and super-structure)	Motive Power (engine, machinery, fittings)	Trade (cargo)	Life on Board (domestic / workplace)	England's History		
Build							
Use							
Loss							

The narratives (shown vertically) cut across the biographical attributes (shown horizontally) because each narrative may provide the context for the build (the circumstances and motivation of the vessels being created), for the use (often over several decades) and for the loss of each cargo vessel. Hence, this scheme provides a matrix that highlights the contribution of a wreck's physical fabric within which the importance of a particular cargo vessel can be elaborated. Further, the matrix draws attention to the survival of the physical fabric that gives rise to specific importance, and to the potential to investigate that fabric and any associated documentation in order to enhance the wreck's significance.

This matrix can also serve as a template for recording cargo vessels in order that information about the site can be framed in a way that facilitates the assessment of importance. Indeed, many of the recording fields used in HERs/NRHE can already be seen to fit with this matrix. That is to say, many wreck records already facilitate an assessment of importance that places the build, use and loss of a vessel within these narratives, either within structured fields or – through recording guidelines – in descriptive text.

Although enabling the organisation of existing records, this matrix also highlights some of the limitations of existing records from the point of view of assessing the importance of cargo vessels. Specifically, existing archaeological records tend to focus on the loss of vessels and a few details of their build, but generally little on their use (other than their last voyage). Equally, some details may be provided about the investigation of a wreck, but

usually in terms of the process of identifying the vessel rather than indicating the survival of elements that have a bearing on importance. This matrix can also serve, therefore, as a template for improving record structure and for record enhancement, indicating where particular recording effort may be required in order to enable importance to be assessed.

5. The Application of the Mechanism to Cargo Vessels in the Study Area

O3 To apply the correlated mechanism to available data of the population of post-1840 cargo vessels ...

The intention of the mechanism is to identify cargo vessels that are of national importance and to facilitate the preparation of statements of significance. The mechanism (Appendix I) works by providing a clear articulation between the physical fabric of individual cargo vessel wrecks and the overall context within which they were built, used and lost. The mechanism focuses on five sets of narratives that are key to understanding post-1840 cargo vessels, to communicating their importance to the public, and to selecting examples that might warrant a heritage management response. The five narratives are construction, motive power, trade, life on board and the relation to England's history, encompassing the entire spectrum from international to local.

Cargo vessels were intimately bound-up in radical changes that occurred in all five of these narratives. Many of these changes – which had global repercussions – were driven by what happened in the ports, shipyards and seaways of the North East. As a result, cargo vessel wrecks in the Study Area may manifest importance that is both local/regional and national/international.

This project has been framed as a locally-based pilot, so the mechanism outlined above has been applied by examining the recorded wrecks individually and as a spatially-bound local assemblage, with reference to secondary sources that are regional, national or international in outlook. No reference has been made to an England-wide assemblage of post-1840 wrecks, other than to relevant sections of the England-wide project A*ssessing Boats and Ships* (EH 5693). However, *Assessing Boats and Ships* addressed all forms of maritime craft, not just cargo vessels, and it was also limited by the structure and content of existing records. As a result, the account of cargo vessel wrecks in English waters set out in *Assessing Boats and Ships* is limited in the detail it can provide; such limitations being one of the motivations for the current project. In the absence of a national overview, considering cargo vessel wrecks individually and as a local assemblage has in fact proved very productive.

The mechanism has been applied by repeatedly reviewing the enhanced record for each source in conjunction with the records for the assemblage as a whole, informed by secondary (published) sources. This review has been framed in terms of build, use and loss and by the five key narratives, both to identify potentially important wrecks and to indicate gaps in knowledge and in recording practices. The records have been reviewed repeatedly because there is an inherently iterative aspect to the process. Relatively few of the cargo vessel wrecks in the Study Area stood out immediately as being important irrespective of the assemblage as a whole; and even if this were the case then a stand-out attribute with respect to one facet need not imply that it would also be exceptional in respect of other facets.

5.1. Physical Fabric

One area of the mechanism that is potentially contentious is the consideration of importance arising from factors collected together in the mechanism under the heading 'survival'; that is to say, the role of physical fabric. This has both a theoretical and a practical aspect.

DCMS's *Principles of Selection for Listing Buildings* (DCMS March 2010) are very clear that the state of repair of an asset is not a relevant consideration when deciding whether it meets the test of special interest (para. 16). However, the *Principles of Selection for Scheduled Monuments* (DCMS October 2013) and, by extension, for Protected Wrecks make it equally clear that the survival of a monument's significance, both above and below ground or underwater, is a particularly important consideration and should be assessed in relation to its present condition plus its surviving features. Further, the fragility and vulnerability of the physical fabric are also regarded as principles on which the case for scheduling can be advanced. At least part of an asset's potential – another principle upon which the special interest of a scheduled monument is based – also arises from the survival of physical fabric that is capable of being investigated. The theoretical aspect pertaining to the physical fabric of cargo vessel wrecks is, therefore, what weight to give in this mechanism to the presence and condition of the physical elements from which importance arises? Taking a lead from Listed Buildings, a wreck's poor state of repair would not detract from it being identified as having special interest; whilst the present condition of a wreck would have a direct bearing on its significance if viewed in the light of guidance on scheduling.

This theoretical complexity can be resolved to some extent by stepping back to the heritage values identified in the conservation principles that underpin Historic England's advice. The *Conservation Principles* (English Heritage April 2008) set out four forms of heritage value: evidential; historical; aesthetic and communal. In very broad terms, the evidential and aesthetic values of cargo vessel wrecks are more dependent on physical fabric than their historical and communal values. That is to say, a wreck may still be valued for illustrating an aspect of merchant shipping or because it has an association with a notable person or event even if the physical remains survive in only poor condition. Equally, the commemorative, symbolic, social and spiritual values associated with a wreck may not require much in the way of physical survival for them still to be perceived as important communally. However, for the wreck to have value as physical evidence, then those aspects of significance that could arise from its investigation have to be physically present in reasonable condition. For a cargo vessel wreck to have aesthetic value also implies the physical survival of its design, or the survival of wreck elements in a form that generates fortuitous aesthetic value as underwater 'scenery'.

With reference to the five key narratives, the emphasis to be placed on the survival of the physical fabric of a cargo vessel wreck depends on the degree to which the link between wreck and narrative is based on historical or communal values on the one hand, or evidential and aesthetic values on the other. By way of example, a wreck could have considerable value communally because of loss of life during its loss, or historically from its connection to events in the First World War, even if its remains are fragmentary. An equally fragmentary wreck might be unlikely to be capable of rendering evidential or aesthetic value. However, a more substantial wreck that might have evidential or aesthetic value may not have any great illustrative, associational or communal value.

As the importance of a cargo vessel wreck is multifaceted, as indicated by the five key narratives, then evidential, historical, aesthetic and communal values may all be present in respect of one or more narratives. The issue of physical survival does not place a wreck in – or out of – a particular box. However, this elaboration does suggest that the survival and condition of physical fabric can be assessed according to different thresholds depending on the heritage values associated with the wreck.

This theoretical elaboration is important for practical reasons because the condition of wrecks in the Study Area varies considerably and because reliable information about wreck condition is a major data gap.

Assuming that the information about wreck condition is reliable, then the Study Area includes wrecks that range from being relatively intact to almost wholly broken up. The reasons for this variety are complex, encompassing environmental and human factors that interweave from a vessel first coming to grief and its immediate wrecking process, its subsequent history of clearance and salvage, and the ongoing effects of storms, currents and corrosion.

Although variety in state of repair is likely, an overall assessment of wreck survival in the Study Area is not possible because the available information is not necessarily reliable. Information on condition is inconsistent both in terms of the coverage of each wreck and the terms or thresholds that apply. Observations on the presence of material on the seabed are derived overwhelmingly from UKHO survey history and from divers. The UKHO survey history is usually based on soundings, wire sweeps, notes of actions and observations by others, and occasionally on geophysical survey (sidescan; magnetometer). Diver observations are of limited detail as a result of environmental constraints such as overall time on site, underwater visibility, and the presence of masking material such as lost fishing gear. The observations are predominantly by non-archaeological divers, though they are very useful in the absence of systematic archaeological survey. All in all, the availability of reliable information on physical fabric is a major data gap. This data gap has a practical bearing on the degree to which condition and survival can inform the assessment of importance irrespective of the theoretical issues concerning physical fabric that were outlined above.

One consequence of the overall lack of reliable information on condition and survival is that the assessment of importance here is based predominantly on documentary records relating to the history and loss of cargo vessels, rather than archaeological records relating to the presence of material on the seabed. Effort to capture further seabed observations would be very welcome, using either indirect (i.e. geophysical) or direct (i.e. diver or ROV-based) methods.

The recourse to documentary records in the course of this project reflects a broader tendency in maritime recording to rely on documentary sources, which appears in turn to have affected recording structures and practices. In short, existing maritime records appear to favour documentary sources, lacking the fields and terms that might encourage a greater focus on recording what is present on the seabed. Additional effort may be required to incorporate recording structures and practices that focus on field observations within HERs/NRHE, particularly in terms of field observations that have a bearing on the assessment of importance.

The problem raised by recording practices attuned to documentary sources is that a reliance on documentary sources may result in assessments of importance that reinforce and confirm existing document-based narratives, rather than the archaeological record challenging those narratives.

In sum, the physical fabric of cargo vessels is an important strand for consideration that encompasses the following:

- the theoretical role of fabric as a medium for special interest;
- the practical absence of reliable information on physical fabric in many cases;

- recording structures and practices that appear to favour documentary sources over archaeological investigation of the physical material;
- the in-combination effect of these issues relating to physical fabric on ascribing importance in a way that may simply reinforce existing narratives under each of the five headings rather than challenging them.

5.2. Practical Application of the Mechanism

The enhanced records of the 37 cargo vessels were set out in a spreadsheet form. With a small amount of data cleaning and the addition of some classifications it was possible to use spreadsheet functions to review the assemblage as a whole to identify patterns, sequences, clusters, absences and so on. These patterns indicated relationships between each individual wreck and the Study Area assemblage and – by reference to secondary sources – broader characteristics of cargo shipping in the period. It is perhaps worth emphasising again that this approach to ascribing importance is based on a regional assemblage and documentary records, rather than on an England-wide assessment of the physical resource (though England is in itself problematic as a framework for considering English shipping – see below).

Patterning in particular fields is particularly relevant to the question of importance of post 1840-cargo vessels, so these were highlighted and used as a form of indicator. These were as follows:

Build
Construction material
Engine
Number of boilers
When Built (year)
Where Built
Builders
Tonnage
Length
Hull Form

Use
Departure
Destination
Cargo
Owner
Nationality

Loss
Date Lost (year)
Manner Lost
Crew lost

To be clear, these attributes are not an inherent, universal source of importance – the importance attributed to a date of build, construction material and engine type may vary according to where a vessel was built, for example – but they serve as reasonable indices of where importance might arise.

Columns were added to the spreadsheet to make a note, for each wreck, of the attributes that could give rise to importance. Three columns were added for the build, use and loss

phase respectively (see Appendix II). Within each phase cell, importance was related to the relevant narrative, hence the importance associated with these narratives could arise in multiple phases. For example, the fact that a vessel was *lost* in the Second World War would also indicate importance from the vessel being in *use* in the Second World War. This is a critical distinction because the use of cargo vessels in the Second World War (for example) is a source of importance in its own right, additional and to some degree separable to the importance that arises from a fraction of those vessels in use that were also sunk. To amplify the point, some wrecks may be important for their use in the First World War, even though they survived only to be sunk in a subsequent period (e.g. *Mile End* and *Maindy Hill*). Part of the importance of the *Pandora*, lost in 1951, may arise from its service as the *Icewhale* in the Second World War.

Columns were also added for importance relating to survival and to investigation (Appendix II), again being populated with notes about the presence of physical fabric (if recorded) or the existence of documents or artefactual assemblages that might have potential for further research or public engagement. As attributes relating to survival and investigation are generally poorly recorded, the notes in these columns are very tentative; but they have again been flagged in relation to the relevant narrative. In particular, where a reference has been made to material having been recovered which might be capable of research or engagement, it should be borne in mind that the material may not be accessible as it is in private hands. Indeed most of the references to recovered material relate to non-ferrous items recovered by recreational divers.

Where importance was noted in these columns, it was on the basis that the vessel itself had a direct relation to a key narrative in one or other phases, not simply that the vessel could be important to some or other narrative at some point. As a result, not all vessels were ascribed importance. This need not mean that importance might not arise in relation to a narrative which has not been identified here. For example, a foreign-built vessel might be highly important in terms of a foreign shipbuilding narrative. But in order to ascribe importance it is necessary to have a frame of reference, and the frame for this exercise has been focussed particularly on narratives pertaining to the North East of England. Clearly, this approach favours wrecks that are linked to the North East and potentially downplays vessels whose importance might arise from connections to different regions, which is a consideration to take into account with respect to the effectiveness as the mechanism as a whole (see below).

As well as flagging importance relating to construction, motive power, trade and life on board, relationships with broader narratives pertaining to England's History have also been flagged. As indicated above, these are principally the role of the North East in shipbuilding, in the export of coal, and in the First and Second World Wars. These narratives encompass aspects of construction and trade, for example, but they also contribute to a wider canvas. Identifying a direct relationship with a key narrative relating to England's history is not, however, the same as ascribing 'national importance'. Simply having a relationship to a national narrative does not mean that a particular wreck automatically crosses a threshold of being special: it could have a relationship to a national narrative but be a mundane example. Equally, a wreck could have attributes relating to a more technical narrative such as motive power (illustrating the development of the triple expansion engine, for example) that elevate it to national importance. In short, relationships to nationally-important narratives such as the World Wars, North East shipbuilding and the export of coal does not intrinsically result in cargo vessel wrecks being regarded as of national importance themselves; and national importance can also arise from the relationship of wrecks to key narratives relating to construction, motive power, trade and life on board.

The identification for each wreck of attributes that give rise to importance in relation to specific narratives, both national and more technical, was followed by adding a further flag for those wrecks that appeared to warrant the preparation of formal statements of significance. The notes in the columns provide the kernel of such statements, but not every vessel was considered to warrant their preparation. A qualitative threshold or 'sift' can be applied to the spreadsheet that indicates that a wreck has sufficient importance to warrant elaboration in a statement, though it does not imply that the wrecks so flagged have met a threshold of national importance. The sift is qualitative because the selection was made across a range of attributes and relationships to key narratives, not by a more mechanical reference to one or other attribute. Although it could have been possible to add a quantitative element by adding indices or scores to attributes (as has been applied in other instances) this was not felt to be helpful.

Sixteen of the 37 wrecks were flagged as warranting the preparation of statements of significance, as follows:

HER#	Name
1848	*Birger*
2096	*Schaldis ?*
2687	*Mile End*
3118	*Moorwood*
3127	*Ernrix*
3129	*Harvest*
3141	*Corsham*
3145	*Burnhope*
3148	*Empire Bay*
3153	*Maindy Hill*
3156	*Patria*
3161	*Winga*
3167	*Audax*
5046	*Dimitris*
5091	*Earl Percy*
5092	*Pandora*

As part of the flagging process, the wrecks were reviewed alongside the patterns identified above to ensure that they were fully represented. The process of considering the flagged wrecks relative to the assemblage is both a means of characterising the overall assemblage and of identifying the relationship between wreck and context from which importance arises.

Statements of Significance have been prepared for seven of the 16 wrecks (*Birger*; *Corsham*; *Dimitris*; *Earl Percy*; *Harvest*; *Moorwood*; *Pandora*) as part of this pilot project. The Statements of Significance are structured according to the Build-Use-Loss approach and summarise significance with reference to the heritage values set out in Historic England's *Conservation Principles*. Gaps in understanding the significance of each wreck are also highlighted. The Statements of Significance form Appendix V of this report.

None of the wrecks have been flagged as being of national importance but this is a reflection of the availability of data, especially field data. The lack of field data about cargo vessel

wrecks on the seabed may be a barrier to concluding that the mechanism has been completely effective in discerning nationally important non-designated assets. Nonetheless, the mechanism has certainly been effective in discerning wrecks that *could* be nationally important, subject to field results. In the light of the selection guides for otherwise comparable military, maritime, transport and industrial assets on land, at least some of the wrecks appear to have at least equal claim to national importance.

The mechanism has been developed for and applied to a reasonably large assemblage of wrecks. Attention has focussed on achieving a relatively straightforward approach for multiple wrecks that articulates relationships between individual wrecks and patterns in the overall assemblage, based on readily available data. This is evident in the use of a worksheet format for attributing significance (Appendix II).

However, the mechanism is also capable of being applied wreck by wreck in table format, as indicated in Appendix III. In contrast to the worksheet approach, the table format is probably better suited to wrecks for which more information is already available, or where additional investigations (documentary or field-based) are being contemplated. The table format acts as a prompt to identifying the kinds of information that might be sought in gauging the importance of a wreck, rather than simply making best use of available data for an assemblage. Appendix IV shows how this table format can be elaborated into a series of questions that could be addressed in seeking to better understand or convey the significance of a single wreck.

The worksheet used in the course of the project is attached as Appendix VI. The list of Field Names (Columns) is set out in Appendix VII.

6. Cargo Vessel Wrecks and their Context

The physical assemblage of wrecks in the Study Area corresponds to predominantly document-based narratives but is also at variance from them at some points. The consideration of wrecks relative to their context also highlights further issues with the availability of information and with recording practices.

6.1. Build

In brief, the physical assemblage comprises overwhelmingly metal-hulled screw steam ships, many of which were built in the North East (defined here as the River Humber to the River Blyth) and many of which were sunk in the First World War, predominantly by torpedo in 1917-1918.

Many of the wrecks are of colliers, either carrying coal or in ballast, plus a smaller group carrying iron ore or iron products. Most of the ships were departing from or bound for ports within the region; relatively few were only transiting through the region when lost.

Most of the vessels are small to medium in size. The largest is 5250 gross register tonnage (grt) in a period when vessels were commonly up to 8-10,000 grt. This probably reflects the fact that most of the wrecks are of ships engaged in coasting and short-sea trades to and from other places in the UK or continental Europe. None of the wrecks are of vessels engaged in oceanic voyages at the time of loss. This raises an interesting point about categorising the cargo vessels wrecked in the Study Area. Although difficult to define, coasters are typically less than 250 ft (76.2 m) in length, which equates to about 1500 grt. Although involved in coasting and short-sea voyages, 17 of the 37 wrecks are larger than coasters defined in this way. Larger vessels are commonly divided between tramps and cargo liners, reflecting differences in how they were used operationally: liners operate on a fixed route and timetable, whereas tramps operate according to the demand for individual cargoes. There are physical differences between tramps and liners too, relating to speed and cargo handling equipment, for example. Both tramps and liners are typically ocean-going vessels of commensurate size: tramps above 1500 grt and liners of 4000-8000 grt. Accordingly, the majority of vessels over 1500 grt in the Study Area might be regarded as tramps; only three are over 4000 grt. However, it is not straightforward to establish whether any of the vessels – irrespective of size – were acting as liners on fixed schedules. Certainly, smaller liners were active on the east coast. Armstrong and Stevenson (1997) report on the Wilson Line's liner service using coasters between Hull and Liverpool from 1884 to 1914, which was at least monthly and sometimes fortnightly or even weekly, and commercially viable over this period despite the much shorter rail link between these two ports. Consequently, coasters and liners overlap at least in terms of operation if not also in terms of physical adaptations (to include greater number of passengers for example). A further layer of complexity is introduced through the term collier, which might refer to a vessel adapted for carrying coal but might also be applied to a general coaster or tramp that is carrying coal on a particular voyage.

It is plainly desirable to be able to identify these different categories of cargo vessel to ensure that the different builds and uses are reflected and represented in the consideration of importance. However, current archaeological records and recording practices do not appear to be attuned to these distinctions. For example, 'tramp' and 'cargo liner' are not included as terms in the Maritime Craft thesaurus, and the scope note for the term 'collier' does not indicate whether it applies only to vessels designed or adapted for carrying coal, rather than to all those used for carrying coal. Equally, the categories used by National Historic Ships UK are attuned to the types of vessel that make up the fleet of vessels in

preservation which – in respect of cargo vessels – is dominated by barges, narrow boats and other wooden and/or sailing vessels. The variety of vessels discussed here would all fall within the categorisation cargo – coastal – steam (National Historic Ships UK March 2014), which allows for little differentiation. In considering the importance of cargo vessels it would, therefore, be preferable to have additional specific terms available, and for recording practices to give effect to these distinctions.

The list of wrecks in the Study Area does not appear to include any larger tramps or cargo liners, or examples of more specialised vessels such as tankers, bulk cargo carriers, refrigerated vessels, or livestock carriers. All of these types were built in the North East and were of tremendous importance to the story of merchant shipping generally. Their absence amongst wrecks in this Study Area is probably a product of the general pattern of use and loss in this particular region and such types are likely to occur in assemblages from elsewhere around the UK.

Perhaps most surprisingly, the wreck of only one sailing cargo vessel wreck – the *Birger* – has been identified in the Study Area. This is intriguing because sail would have been a very important component of merchant shipping in the Study Area until at least the end of the First World War, encompassing reasonably large vessels as well as smaller boats. The apparent absence of the wrecks of sailing vessels is likely to reflect a bias in existing records of confirmed wrecks towards upstanding metal hulls and/or major components such as boilers and engines, which has arisen from records' reliance on hydrographic records. It is therefore likely that there are examples of sailing cargo vessel wrecks in the region that have yet to be found or confirmed.

The presence and importance of post-1840 sailing cargo vessels may warrant specific attention by Historic England in future to complement this pilot, which has – by virtue of the record – concentrated on steam cargo vessels. Depending on the overall quantity of confirmed wrecks of post-1840 sailing cargo vessels, it may be appropriate to take a national rather than regional overview. It may be valuable to consider not only the record of known wrecks, but also to examine spatial and chronological patterns of use and loss relative to steam cargo vessels through NRHE casualty data and other relevant sources.

Although there has been no specific overview of post-1840 sailing cargo vessels to help gauge their importance, it is worth noting that there are at least two examples that have already been designated: the Thorness Bay wreck (LEN 1402103), a mid to late nineteenth century merchant sailing ship designated under the Protection of Wrecks Act 1973[11]; and the *Harriett* (LEN 1021451), a broad beam sailing barge built in 1900 designated under the Ancient Monuments and Archaeological Areas Act 1979[12]. A further example – GAD 23 (the Bowsprit Wreck), a mid to late nineteenth century merchant sailing trip operating in the coal trade (Wessex Archaeology February 2012) – is being considered for designation[13].

Post-1840 sailing cargo vessels also appear to have faired better in preservation than steam cargo vessels. A query to the online National Historic Ships UK database[14] returns 55 results,

[11] http://historicengland.org.uk/listing/the-list/list-entry/1402103

[12] https://www.historicengland.org.uk/listing/the-list/list-entry/1021451; see also http://www.nationalhistoricships.org.uk/register/2347/harriett.

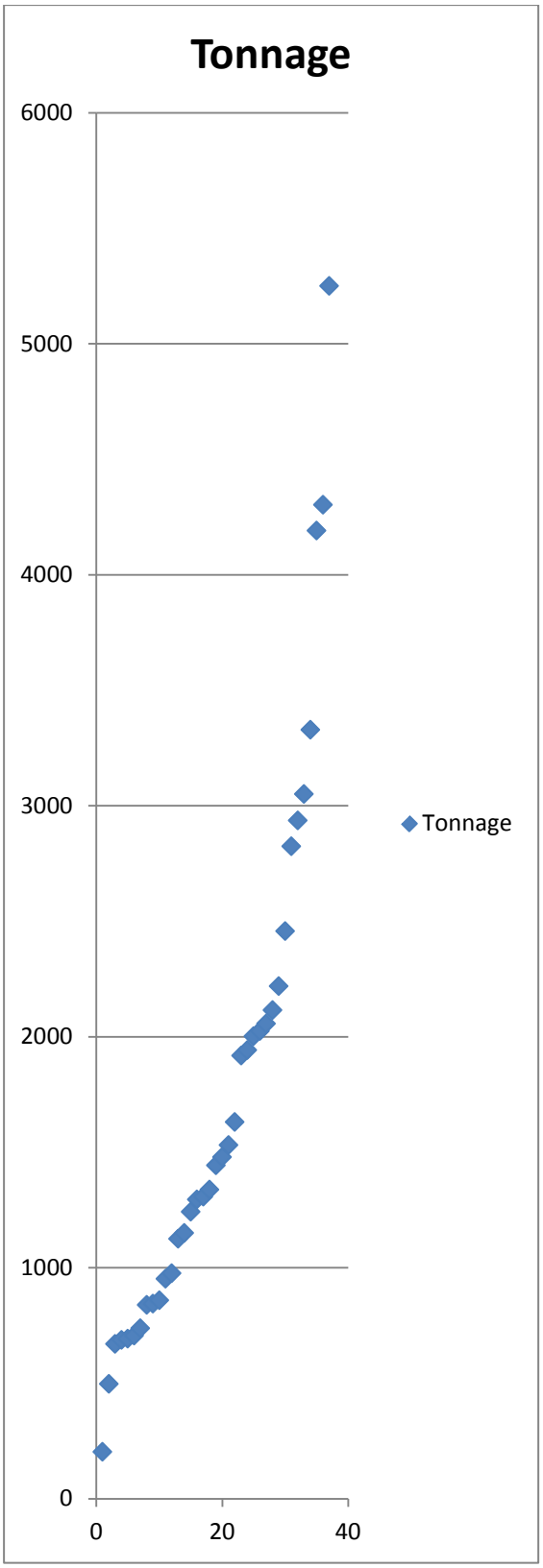
[13] Three other designated wrecks might be regarded as relevant here. The Wheel Wreck in the Scillies (LEN 1000086) is also thought to be post-1850 but no vessel structure has yet been identified. The Iona II, lost 1864, (LEN 1000051) is an iron hulled paddle steamer, but built as a passenger ferry rather than as cargo vessel.

[14] http://www.nationalhistoricships.org.uk/advanced_search.php

including various sailing barges, keels, wherries, ketches, schooners, sloops, barques and the clipper *Cutty Sark*.

Given the importance and increasing dominance of steam cargo vessels in the post-1840 period, it seems paradoxical that sailing vessels are better represented in designations and in preservation. Various reasons can no doubt be advanced, ranging from the hard economics of metal scrap value when vessels came to the end of their lives to a possible halo effect around wooden sailing vessels. This project may help draw attention to steam cargo vessels as an otherwise underrepresented class of heritage assets.

Returning to the matter of size, the apparent homogeneity of small to medium metal-hulled screw steamers does encompass some finer-scaled distinctions. For example, the gross registered tonnage of the 37 wrecks forms five distinct groups as follows:



HER #	Name	F [15]	Tonnage Group	Tonn-age
5092	Pandora	x	<500	203
3193	Commercial		<500	496
3135	Harraton		600-1700	669
3122	John Miles		600-1700	687
3127	Ernrix	x	600-1700	692
3197	Rutil		600-1700	706
1848	Birger	x	600-1700	737
3156	Patria	x	600-1700	838
3079	Ardgantock		600-1700	844
2687	Mile End	x	600-1700	859
5091	Earl Percy	x	600-1700	952
3167	Audax	x	600-1700	975
2559	Ellida		600-1700	1124
2356	Hartley		600-1700	1150
2096	Schaldis ?	x	600-1700	1241
2323	Hercules		600-1700	1295
3128	Carlo		600-1700	1307
3129	Harvest	x	600-1700	1338
3155	Ocean		600-1700	1442
3161	Winga	x	600-1700	1478
3125	Lemnos		600-1700	1530
3163	Erich Lea		600-1700	1630
3153	Maindy Hill	x	1900-2500	1918
3145	Burnhope	x	1900-2500	1941
2124	Enterprize		1900-2500	2002
3134	Hawkwood		1900-2500	2024
3118	Moorwood	x	1900-2500	2056
3168	Anboto Mendi		1900-2500	2114
3151	Adine		1900-2500	2218
3202	Afrique		1900-2500	2457
3148	Empire Bay	x	2800-3500	2824
3191	Polanna		2800-3500	2936
3141	Corsham	x	2800-3500	3050
3131	Clavering		2800-3500	3328
3121	Montauban		>4100	4191
3150	Kilkis		>4100	4302
5046	Dimitris	x	>4100	5250

[15] 'x' indicates that the wreck was flagged as warranting a Statement of Significance, showing that selected wrecks represents range of vessel sizes.

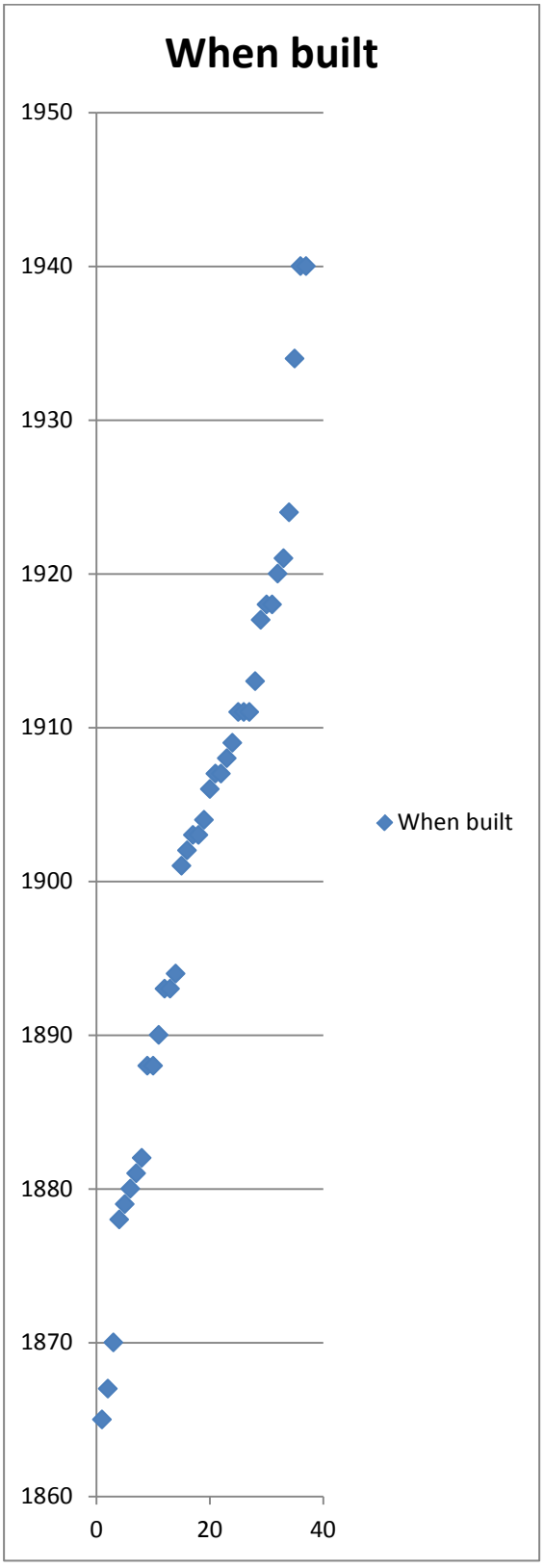
The largest group – more than half – has a tonnage from 600 to 1700 grt, encompassing and slightly exceeding the definition of a coaster as having a maximum tonnage of about 1500 grt.

When Built	HER#	Name	Tonnage
1865	5091	Earl Percy	952
1867	3135	Harraton	669
1870	1848	Birger	737
1878	2096	Schaldis ?	1241
1879	3128	Carlo	1307
1880	3125	Lemnos	1530
1881	3129	Harvest	1338
1882	3156	Patria	838
1888	2124	Enterprize	2002
1888	3131	Clavering	3328
1890	3151	Adine	2218
1893	5092	Pandora	203
1893	3191	Polanna	2936
1894	3155	Ocean	1442
1901	2559	Ellida	1124
1902	3193	Commercial	496
1903	3167	Audax	975
1903	2356	Hartley	1150
1904	3163	Erich Lea	1630
1906	3150	Kilkis	4302
1907	3145	Burnhope	1941
1907	3168	Anboto Mendi	2114
1908	3122	John Miles	687
1909	2323	Hercules	1295
1911	2687	Mile End	859
1911	3153	Maindy Hill	1918
1911	3202	Afrique	2457
1913	3197	Rutil	706
1917	3079	Ardgantock	844
1918	3141	Corsham	3050
1918	5046	Dimitris	5250
1920	3121	Montauban	4191
1921	3127	Ernrix	692
1924	3161	Winga	1478
1934	3134	Hawkwood	2024
1940	3118	Moorwood	2056
1940	3148	Empire Bay	2824

It should be noted that in these figures, tonnage does not appear to develop chronologically as there is a mix of tonnages across the different build dates. However, there is a general historical trend for vessels to become larger; the predominance of coastwise and short-sea ships working between the relatively shallow water ports of the North Sea is likely to account

for the absence of larger vessels wrecks that would reflect the general historical trend (Whitehead pers. comm.).

Turning to chronology more generally, the assemblage of wrecks from the Study Area exhibits clear groups in construction:



HER#	Name	F	When built
5091	Earl Percy	x	1865
3135	Harraton		1867
1848	Birger	x	1870
2096	Schaldis ?	x	1878
3128	Carlo		1879
3125	Lemnos		1880
3129	Harvest	x	1881
3156	Patria	x	1882
2124	Enterprize		1888
3131	Clavering		1888
3151	Adine		1890
5092	Pandora	x	1893
3191	Polanna		1893
3155	Ocean		1894
2559	Ellida		1901
3193	Commercial		1902
3167	Audax	x	1903
2356	Hartley		1903
3163	Erich Lea		1904
3150	Kilkis		1906
3145	Burnhope	x	1907
3168	Anboto Mendi		1907
3122	John Miles		1908
2323	Hercules		1909
2687	Mile End	x	1911
3153	Maindy Hill	x	1911
3202	Afrique		1911
3197	Rutil		1913
3079	Ardgantock		1917
3141	Corsham	x	1918
5046	Dimitris	x	1918
3121	Montauban		1920
3127	Ernrix	x	1921
3161	Winga	x	1924
3134	Hawkwood		1934
3118	Moorwood	x	1940
3148	Empire Bay	x	1940

Six groups are apparent with notable hiatus between them, as follows:

to 1870
1878-1882
1888-1897
1901-1913
1917-1924
1934-1940

The 1901-1913 period is the most numerous with 14 wrecks. The episodic character of the build dates reflects actual patterns in the demand for ships and shipbuilding, which were notoriously variable (see e.g. Dougan 1968 pp.118-124; Clarke 1997 Part 1. pp. 181-204; Buxton, I., Fenton, R. and Murphy, H., 2015).

There is clearly a relationship between the date of build and the fundamental technology of cargo vessels, with key innovations being the switch to steel hulls and the introduction of triple expansion engines – itself related to the advent of higher boiler pressures – in the late 1880s[16]:

[16] The detailed history of innovation in construction materials and motive power in the post-1840 period is not elaborated here because of its complexity (see Further Reading). It should be noted that time elapsed between theoretical developments, practical experiments and a new technology becoming economically attractive. Economic attractiveness varied according to different forms of shipping, which had a mutual relationship with the regions, yards and owners that addressed those markets. The predominantly coastal and short-sea ships present in the Study Area would not necessarily have been 'early adopters', hence it is not a case of searching for global firsts. The assemblage of wrecks in the Study Area draw attention to the ways in which the extraordinary innovations of the period took effect across the sector – and their implications for shipping and society – rather than how they were first manifested.

HER #	Name	Built	F	Mate-rial	Eng-ine
5091	Earl Percy	1865	x	Iron	2-Cyl
3135	Harraton	1867		Iron	2-Cyl
1848	Birger	1870	x	Plank	n/a
2096	Schaldis ?	1878	x	Iron	2-Cyl
3128	Carlo	1879		Iron	2-Cyl
3125	Lemnos	1880		Iron	2-Cyl
3129	Harvest	1881	x	Iron	2-Cyl
3156	Patria	1882	x	Iron	2-Cyl
2124	Enterprize	1888		Steel	Triple
3131	Clavering	1888		Iron	Triple
3151	Adine	1890		Steel	Triple
5092	Pandora	1893	x	Iron	2-Cyl
3191	Polanna	1893		Steel	Triple
3155	Ocean	1894		Steel	Triple
2559	Ellida	1901		Steel	Triple
3193	Commercial	1902		Steel	Triple
3167	Audax	1903	x	Steel	Triple
2356	Hartley	1903		Steel	Triple
3163	Erich Lea	1904		Steel	Triple
3150	Kilkis	1906		Steel	Triple
3145	Burnhope	1907	x	Steel	Triple
3168	Anboto Mendi	1907		Steel	Triple
3122	John Miles	1908		Steel	Triple
2323	Hercules	1909		Steel	Triple
2687	Mile End	1911	x	Steel	Triple
3153	Maindy Hill	1911	x	Steel	Triple
3202	Afrique	1911		Steel	Triple
3197	Rutil	1913		Steel	Triple
3079	Ardgantock	1917		Steel	Triple
3141	Corsham	1918	x	Steel	Triple
5046	Dimitris	1918	x	Steel	Triple
3121	Montauban	1920		Steel	Triple
3127	Ernrix	1921	x	Steel	Triple
3161	Winga	1924	x	Steel	Triple
3134	Hawkwood	1934		Steel	Triple
3118	Moorwood	1940	x	Steel	Triple
3148	Empire Bay	1940	x	Steel	Triple

In this configuration it can be seen that *Enterprize*, built in 1888, is the earliest example of both a steel hulled and triple expansion powered cargo vessel – coinciding with the start of the 1888-1897 group of build dates – whilst *Pandora* is a relatively late built example (1893) of a cargo vessel with an iron-hull and two-cylinder compound engine. It should be noted that the number of boilers is linked to the size of the vessel rather than its age: the Study

Area includes wrecks with a single boiler built in the 1920s, but also a two-boiler vessel built in 1880. Although not captured in the HER records, boilers were as important for technological development as the engines themselves, especially through the introduction of higher working pressures and greater efficiency.

Although the basic attributes of vessels are recorded in the HER and NRHE such as hull material and motive power, there is surprisingly little information on the different forms of vessels. Again, this reflects a gap in recording practices and, to some extent, the sources normally accessed; but also a gap in recording systems and terminology. It is especially surprising because classifying monument forms – whether of barrows, buildings or bridges – is usually a central concern of archaeological recording.

The form of cargo vessels varies through a number of different types, reflecting different aspects of anticipated use. It might be expected that different cargo vessel forms would have received attention because of the history they convey or illustrate, yet these forms appear to have been largely ignored in the course of recording. Key aspects of hull form are the position of machinery and the position of the wheelhouse: both might be placed aft, or amidships where they give rise to the 'three-island' form. There are also cargo vessels with machinery aft but the wheelhouse amidships, and various approaches to obtaining the best cargo space taking into account the need to maintain longitudinal trim especially in ballast, optimising access for loading and unloading, and different rates and tariffs. Greater reference to well decks, shelter decks, extended quarterdecks and bridge decks might therefore be expected in archaeological records, providing a basis for elaboration when considering importance (see in particular Waine and Fenton 1994).

Other aspects of hull form such as the shape of bow and stern, might also be expected, plus specific innovations such as examples of turret decked ships, associated particularly with Doxford of Sunderland. For instance, the *Maindy Hill* is referred to in Lloyds Register as having corrugated sides, comprising bulges that 'were claimed to improve cubic capacity and also sea kindliness' but which added to the cost of repairs (Greenway 1994 p. 52).

Recording cargo vessel form, understanding its implications and reflecting this in assigning importance are all of central importance in taking forward the results of this project. The potential role of form is especially key given that vessel form is often observable on the seabed by recreational divers, and sometimes in the results of geophysical surveys.

Most of the vessels were built in the North East (Humber – Blyth), with substantial groups from Scotland and various points on the Continent. This seems to be a reasonably accurate representation given the dominance of North East shipbuilding not only nationally but internationally. In 1892, for example, almost 42% of all tonnage globally was launched in the North East (Dougan 1968 p. 119). Many of the most famous and prolific yards of the North East are represented by ships wrecked in the Study Area but, equally, there are important yards that are not represented. Further work could be done to draw out the particular distinctiveness and chronologies of regions, towns and yards in terms of the wrecks that represent them; this is potentially a rich vein for exploring the importance of cargo vessel wrecks within a community archaeology context.

Row Labels	Count of Name	Count of Flag
1 NE	**21**	**11**
Newcastle	**5**	**3**
Palmer's Shipbuilding & Iron Co.	1	1
Palmer's Shipbuilding & Iron Co. Ltd.	1	
William Dobson & Co.	1	1
Wood, Skinner & Co.	1	
Wood, Skinner & Co. Ltd	1	1
Selby	**1**	**1**
Cochrane & Sons Ltd.	1	1
Sunderland	**11**	**3**
Austin Pickersgill	1	1
Austin, S. P. & Son Ltd.	2	1
J. L. Thompson & Son	1	
John Priestman & Co. Ltd.	1	
Laing James & Sons Ltd	1	
Osbourne, Graham & Co. Ltd.	1	1
S.P.Austin & Co.	1	
S.P.Austin & Son	1	
Short Brothers	1	
Sunderland Shipbuilding Co. Ltd.	1	
Wallsend	**1**	**1**
Schlesinger Davis & Co.	1	1
West Hartlepool	**2**	**2**
Irvine & Co.	1	1
William Gray & Co. Ltd.	1	1
Whitby	**1**	**1**
Turnbull Thomas & Sons	1	1
2 Scot	**6**	**2**
Alloa	**1**	
Forth Shipbuilding & Engineering Co.	1	
Glasgow	**2**	
Ferguson Brothers	1	
Robert Duncan & Co. Ltd.	1	
Greenock	**1**	**1**
Caird & Co.	1	1
Paisley	**1**	
Fullerton J. & Co. Ltd.	1	
Port Glasgow	**1**	**1**
Murdoch & Murray	1	1
3 NI	**1**	
Belfast	**1**	
Workman, Clark & Co. Ltd	1	
4 Cont	**9**	**3**
Bergen	**2**	
Bergens Mekaniske Verksteder A/S - BMV	1	
Bergens Mekaniske Verksteder	1	
Bilbao	**1**	
Compaina Euskalduna	1	
Dunkirk	**1**	
Ateliers Et Chantiers De France	1	
Hamburg	**1**	
Blohm & Voss	1	
Oslo	**1**	
Aker Mekaniske Verksted	1	
Pateniemi, Finland	**1**	**1**
(blank)	1	1
Schiedam	**1**	**1**
New Waterway Shipbuilding Co.	1	1
Vlissingen	**1**	**1**
Koninklijke Maatschappij De Schelde	1	1
Grand Total	**37**	**16**

6.2. Use

Most of the wrecks in the Study Area are British. There is also a significant component from Norway:

Nationality, Port of Registration and Ownership	Count
Belgium	**1**
Unknown	**1**
See description	1
British	**23**
Beaumaris	**1**
Merchinson Steamship Co. Ltd., Edinburgh	1
Cardiff	**1**
Rhonda Steamship Co. Ltd.	1
Dundee	**1**

Nationality, Port of Registration and Ownership	Count
Lawside Shipping Co.	1
London	**1**
Cory Colliers Ltd., London	1
Methil	**1**
Matthew Taylor, Methil, Fife	1
Newcastle	**1**
Tyne Steam Shipbuilding Co.	1
Unknown	**17**
H Smurthwaite, Middlesbrough	1
Ardgantock Coasters Ltd, Greenock	1
Burnett Steamship Co. Ltd., Newcastle	2
Carr L.S., Newcastle	1
Clyde Shipping Co. Ltd., Glasgow	1
Clydesdale Shipowners Ltd., Glasgow	1
Commercial Gas Co. Ltd., London	2
Cory Colliers Ltd., London	1
H. T. Morton, Earl of Durham, Sunderland	1
Humber Steam Coasters, Hull	1
Ministry of War Transport, London	1
Nippon Yusen Kaisha Line, Tokyo	1
Stephenson Clarke Co., Newcastle	1
Tyne & Wear Shipping, London	2
Finland	**1**
Rauma, Finland	**1**
B. Ekroth, Rauma, Finland	1
France	**2**
Unknown	**2**
Cie de Bateaux a Vapeur du Nor	1
Delmas Freres	1
Greece	**2**
Andros	**1**
Bogiazides Bros.	1
Unknown	**1**
Bistise & Hadzikriako Piraeus	1
Norway	**6**
Bergen	**2**
Bergen Lloyd	1
Montauk Steamship Co.	1
Unknown	**4**
Dampsk, A.S. Lloyd, I. Oslo	1
Halvorsen, Adolph	1
Skibs, Akiers Adelante	1
(blank)	1
Russia	**1**
Wasa	**1**
Wasa Nordso Angf Aktieb	1
Spain	**1**
Unknown	**1**
Sota y Aznar	1
Grand Total	**37**

As with the shipyards where they were built, there is an opportunity to explore the history of many of the key ship-owning companies through the physical remains presented by wrecks in the Study Area. It is worth noting, however, that the place where the shipowner was based may be more important in considering the context of a ship in its use phase than the Port of Registration.

As noted above, coal was the main cargo at time of loss, and most vessels were departing from or destined for ports in the North East:

Cargo, Departure	Count
Ballast	**7**
Boulogne	1
Caen, France	1
London	3
Rouen	2
Coal	**15**
Blyth	1
Granton, Edinburgh	1
Hartlepool	2
Jarrow	1
Leith	1
Methil	1
Newcastle	1
South Shields	1
Sunderland	1
Tyne	4
Wallsend	1
Coke	**1**
Tyne	1
Coke and/or iron ore	**1**
Tyne	1
Copper Ingots, clay pipes	**1**
Newcastle	1
Iron ore	**5**
Almeria	1
Bilbao	2
Bona, Algeria	1
Sandander, Spain	1
Iron ore/Oranges	**1**
Sagunto	1
Navigation Bouys	**1**
Purfleet	1
Pig Iron	**1**
Middlesbrough	1
Pig Iron, Pitch	**1**
Middlesbrough	1

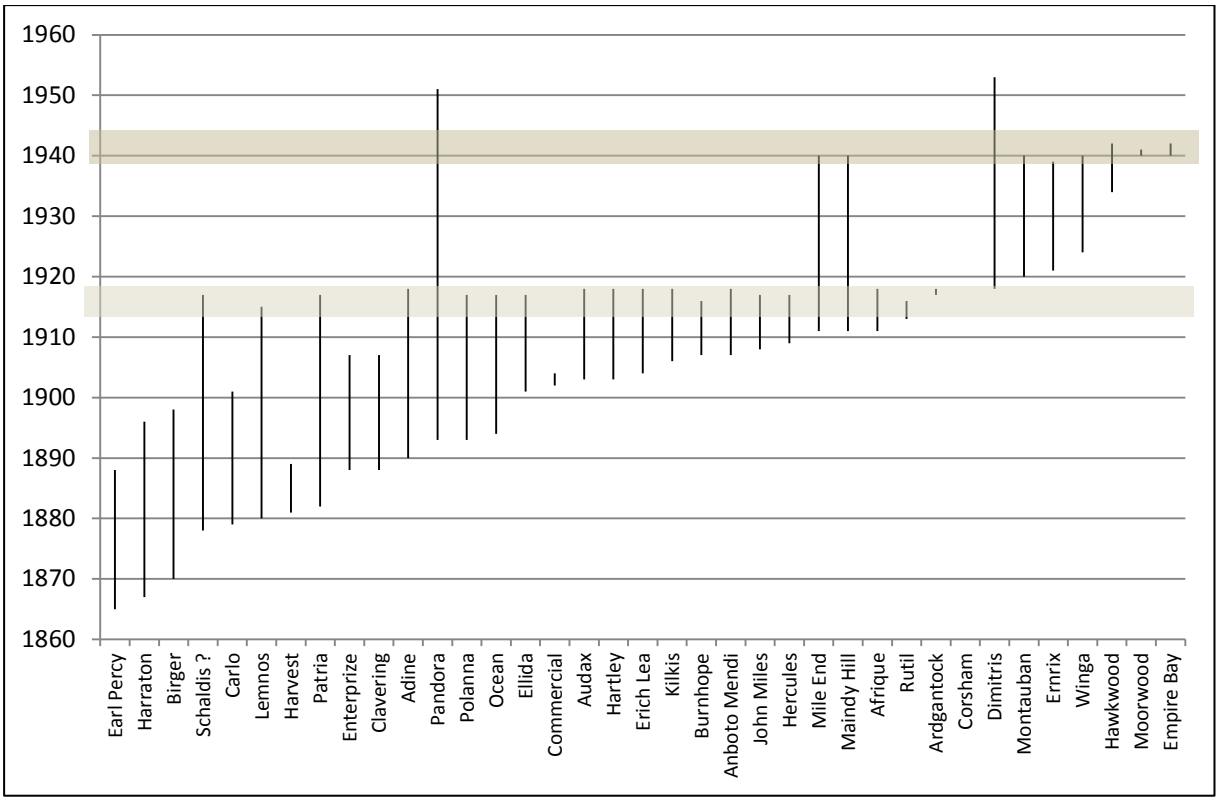
Cargo, Departure	Count
Salt	**1**
San Felieu de Guixols, Spain	1
Wheat	**1**
Hull	1
Whinstone chips	**1**
Newburgh	1
Grand Total	**37**

Cargo, Destination	Count
Ballast	**7**
Blyth	1
Newcastle	2
Sunderland	1
Tyne	3
Coal	**15**
Bayonne	1
Caen?	1
Dunkirk	1
London	6
Marseille	1
Newhaven	1
Rotterdam	1
Rouen	2
Shoreham	1
Coke	**1**

Cargo, Destination	Count
Calais	1
Coke and/or iron ore	**1**
Treport	1
Copper Ingots, clay pipes	**1**
Rotterdam	1
Iron ore	**5**
Middlesbrough	3
Newcastle	2
Iron ore/Oranges	**1**
Middlesbrough	1
Navigation Bouys	**1**
Inverness	1
Pig Iron	**1**
Szczecin, Poland	1
Pig Iron, Pitch	**1**
Japan	1
Salt	**1**
Abo, Finland	1
Wheat	**1**
Thornaby	1
Whinstone chips	**1**
Hull	1
Grand Total	**37**

Coal is predominantly departing from the Rivers Blyth, Tyne, Wear and Tees, but from the Firth of Forth also; and it is bound for the south of England and France. Vessels in ballast bound for the North East are assumed also to be engaged in transporting coal, returning empty for new cargoes. The export of iron ore from Spain and Algeria for the Tees is also notable, matched by exports of pig iron from Middlesborough. Other than a cargo of wheat and of navigational buoys – which is probably an operational rather than trading shipment – foodstuffs and manufactured goods are barely represented.

One thing that all these cargo vessels have in common is that their last voyage was unsuccessful. The assemblage of cargo vessels in the Study Area is heavily shaped by the First World War when the region was traversed by the War Channels, which was the principal focus for German attacks on merchant vessels. The impact of the First and to some extent the Second World War are noteworthy in themselves, but it is also worth considering their effect on cargo vessel longevity.



The cargo vessels wrecked in the Study Area look as though they would have been good for a career of 20-30 years or more if those careers had not been cut short, especially by losses in 1917-1918. The *Pandora* had an especially long career, approaching 60 years and encompassing both World Wars. Several had very short careers, mostly coinciding with the wars. Even outside of wartime, the hazards of seafaring could simply cut a vessel's career short: the *Commercial*, for example, capsized in heavy seas just two years after being built.

A further point worth noting is that some of the vessels wrecked in the Study Area were in service during the World Wars but were not necessarily sunk by them. This underlines the point that wartime service – and all it implies – is an aspect of a cargo vessel's use rather than its loss; and if a vessel is lost in wartime this is a further dimension of its importance. This is an important correction to considering the importance of vessels only in terms of their loss phase. It is also a correction to considering the impact and importance of wartime only for those vessels – and seafarers – that were lost, because the overwhelming number of vessels and seafarers endured and survived these conflicts, and their narratives need to be represented also.

More effort needs to be directed to investigating and recording the use phase of cargo vessels that have been wrecked. For the majority of wrecks this was by far the longest phase of their biographies, yet build and loss phases usually receive greater attention. In order to understand importance it is necessary to elaborate the histories of vessels in use, and to examine how this use is reflected in or represented by their physical remains.

6.3. Loss

The impact of enemy action in the First World War, especially in 1917 and 1918, is clearly apparent in the assemblage of cargo vessels off the Tees. Losses to bomber aircraft in the Second World War reflect the character of that conflict also. Other causes also resulted in losses in wartime, but these appear to be consistent with losses attributable to other causes

in peacetime. Losses attributable to collisions in 1940 are a possible exception to the general trend of 'peaceful' causes of loss, noting that the possibility of collision was exacerbated by wartime conditions. Despite circumstances such as the removal and dimming of navigation aids and lights, ships being confined to narrow channels and sudden evasive action being required, collision was usually regarded as 'Maritime Peril' even in wartime. It is notable, therefore that the loss of the *Ardgantock* – attributable to a collision with the destroyer HMS *Tartar* in 1918 – resulted in a court case that recognised the cause to be a result of 'War Risk'.

Counts Year	Bombed	Collision	Found-ered	Lost	Mined	Stranded	Torped-oed	Wrecked	Grand Total
1888		1							1
1889								1	1
1896								1	1
1898								1	1
1901						1			1
1904			1						1
1907								2	2
1915								1	1
1916				1	1				2
1917							7		7
1918		1					8		9
1939			1						1
1940		3				1			4
1941	1								1
1942	1					1			2
1951			1						1
1953								1	1
Grand Total	2	5	3	1	1	3	15	7	37

It is worth considering the proportion of crew lost, as well as the number of crew lost in absolute terms. In the case of many of the wrecks in the Study Area, all the crew were saved. To a degree, this also reflects the wartime conditions common to many of the wrecks in the Study Area, when there were many vessels in attendance that could offer assistance despite the suddenness of a torpedo strike, for example.

Details are incomplete, but almost a third of the wrecks suffered casualties of a third or more, and in several instances the entire crew was lost. In terms of importance – whether it is an individual or an entire crew – the loss of life may give rise to commemorative value. Importance may also arise from attempts at lifesaving by the RNLI and others, whether they were successful or not, both in view of the extreme hazard in which individuals volunteered themselves to try to achieve a rescue, and in terms of the local history of coastal communities in which lifesaving often holds a central place.

The human casualties of a wreck provide a further opportunity to address the importance of a cargo vessel wreck insofar as individual names and other details may have been recorded. This is especially true of losses to enemy action because members of the mercantile marine lost in these circumstances are regarded as 'war dead' and are recorded in a relatively accessible form by the Commonwealth War Graves Commission. However, mercantile marine casualties arising from collision in wartime appear not to be regarded as war dead and are not recorded. Where recorded, the name, rank and next of kin address can be examined to provide insight into the crewing of the ship; though clearly this encompasses only those who died and will – except where all were lost – be only partial. Identifying human casualties from wrecks using the CWGC is not entirely straightforward; it has not proved practical to

collate human casualty data for all those lost amongst the wartime wrecks in the Study Area. However, some details have come to light through other projects – notably East Coast War Channels (6971) – that indicate further lines of enquiry into the importance of cargo vessel wrecks. Specifically, the *Hercules* and the *Audax* are examples of vessels on which Asian seamen were lost, drawing to attention the little-recognised role of Asian seafarers in English coastwise shipping. It is likely that further work on human casualties would provide insisight into the importance of shipping – and the potential for commemorative value – in a range of coastal communities around the UK and overseas. Although related to the loss phase, it should be recognised that the characteristics of the crew at time of loss are really a facet of the vessel in its use phase, with loss being merely the calamity that has caused these details to be recorded[17].

A further point that arises because of the influence of wartime losses is that the principal grouping or association between certain wrecks in the Study Area (beyond the general geographical correspondence between ships, shipbuilding and coal) is their association with the War Channel. Six wrecks (*Patria*, *Adine*, *Polanna*, *Ocean*, *Ellida* and *Corsham*) are referred to as sailing in the War Channels at the time they were lost. Further documentary research is likely to indicate that several others were also in the War Channels when lost. However, an association with the War Channels does not necessarily equate to a close spatial relationship either with other similarly associated wrecks or with the War Channels themselves. The War Channels were extensive – long linear features across the entire Study Area – and they changed both within each war and between them. Also, even if the initial strike occurred within the War Channels, the wreck may have come to rest on the seabed at some distance, depending on the speed of sinking and attempts at rescuing the vessel. Irrespective of spatial correlation, the association of a wreck with the War Channels may contribute to the wreck's importance.

Beyond the broad regional associations and the role of the War Channels – and the basic demands of navigation in the approach to ports, for example – there are no clearly apparent groupings or associations among the wrecks examined in the study area. Even the broadly proximate wrecks seem not to share any common history with each other or their surroundings, other than coincidental misfortune. Navigational hazards such as reefs and sandbanks have played relatively little role in the sinking of the wrecks discussed here, so this has not given rise to groups of wrecks. Group value could, in principle, occur in respect of cargo vessel wrecks in other circumstances and regions, relating to any of the key narratives identified above: construction; motive power; trade; life on board; and/or England's history. This potential needs to be borne in mind.

The above discussion illustrates how individual cargo vessel wrecks and their importance can be productively considered in the light of an overall assemblage. It demonstrates that the relationship between an individual wreck and its context is worth considering iteratively, and adds confidence both in the mechanism used in discerning importance generally, and in the results for individual wrecks.

[17] In principle, considerable detail is available on the composition of cargo vessel crews in their use phase through crew lists. These have rarely been available in readily accessible forms. However, there are various initiatives underway that are providing digital access to merchant seamen crew lists, so this is an area in which approaches to importance may develop. See http://nationalarchives.gov.uk/first-world-war/search-merchant-navy-1915-crew-lists/; http://www.crewlist.org.uk/index.html.

7. Review of the Mechanism

O3 ...and review the results in order to identify:
- whether the mechanism is effective in discerning nationally important non-designated assets;
- if there might be any barriers to transferring the mechanism to other circumstances;
- what sources of additional data would enhance the mechanism's effectiveness in identifying, recording and mapping nationally important assets.

7.1. Effectiveness

As the previous section has demonstrated, the mechanism is effective in differentiating between cargo vessel wrecks in terms of the principal features that give rise to importance. This differentiation pays due regard to each of the main phases of a vessel's biography: build, use and loss. This differentiation is also directly related to the key narratives identified in respect of cargo vessels, namely their construction, motive power, trade, life on board and their relation to England's history. A distinction has been made between the more technical narratives that relate to the development of ships and shipping (construction, motive power, trade, life on board), and the broader narratives to which cargo vessels are central, notably shipbuilding in the North East, coal, and the First and Second World Wars. It should be underlined that the identification of 'England's history' as a key narrative is not intended to restrict the identification of importance to the national level: narratives of England's history such as North East shipbuilding or the First World War are simultaneously local, regional and international, as well as national. As has been shown, each of these key narratives can be broken down into finer-scaled narratives – such as change from iron to steel – to which the importance of individual wrecks can be directly related. Although not exhaustive, it is anticipated that most narratives relating to the wrecks of post-1840 cargo vessels can be accommodated within the key narratives and the mechanism as a whole.

The effectiveness of the mechanism is increased by separating questions of survival and investigation from the key narratives and phases. This separation addresses the different ways in which the physical fabric of a wreck can give rise to value, as set out in the Conservation Principles. That is to say, the physical fabric of a wreck plays a different role according to whether heritage value is evidential, aesthetic, historical or communal. Extensive survival of physical fabric need not be as critical to the importance of a wreck that is valued for historical or communal reasons; whereas if the value is evidential or aesthetic then a higher degree of survival might be required for the wreck to be regarded as important. As framed here, survival and investigation (that is, the potential for deriving further knowledge, understanding and/or appreciation) have always to be related back to the narrative that gives rise to importance. This means that a wreck in 'good condition' is not intrinsically important; its importance must be articulated by reference to a narrative. Equally, a wreck in 'poor condition' is not intrinsically unimportant; there may be a narrative that lends importance even to fragmentary remains.

The mechanism encourages relevant narratives to be recorded for each wreck that has been assessed, but not all wrecks will necessarily warrant the preparation of Statements of Significance. A degree of differentiation has been achieved in identifying 16 of 37 wrecks that warrant the preparation of Statements, through a process that is iterative and qualitative rather than quantitative. A qualitative approach is necessary because the importance of cargo vessels – across different phases and narratives – is multivariate.

Importance arises on multiple axes so there can be no simple or single threshold: no two wrecks are alike in every respect.

The frame of reference for this differentiation has been the assemblage for the Study Area as a whole combined with secondary sources, noting that the physical record should be expected to challenge documentary sources as well as representing them. It would certainly be interesting to conduct a similar exercise for individual wrecks relative to the overall England-wide assemblage of cargo vessel wrecks, but this would be a very extensive undertaking and would probably give rise to major issues over the completeness and comparability of records. Moreover, this pilot indicates that cargo vessel wrecks have a degree of regional specificity – such as in the sizes and types of vessels – that might be lost in a homogenising England-wide review. A better approach might be to conduct equivalent locally-focussed projects in different regions to see how patterns concur with or differ from those observed here, and to consider the implications of these regional differences on the question of importance.

As the pilot has focussed on differentiating between cargo vessel wrecks based on readily available data for an assemblage, the mechanism has been applied in a worksheet format with one row per wreck. However, the mechanism is also capable of being applied in a table format for single wrecks, which might be useful in prompting further research and data gathering. The mechanism is certainly capable of elaboration into a series of questions that could be addressed in seeking to better understand or convey the significance of a single wreck.

The main limitations on the effectiveness of the mechanism can be attributed to data, recording systems, recording practices and the use of sources. The most significant limitation arises from the generally poor record of cargo vessel wrecks as they are on the seabed. This is not really a question of survival and condition, which – as noted above – do not intrinsically determine importance. Rather, it is a question of what features are present, which will indicate the narratives to which the vessel's remains may contribute. The uncertainty and unreliability of information of what is actually present may extend to the wreck as a whole, such that one cannot always be confident even of the presence or identification of a wreck. Improving the record of cargo vessel wrecks on the seabed also entails the development of recording systems and practices that systematically capture what is present. This need not be resource heavy for Historic England: some of the best descriptions of wrecks in the Study Area are by recreational divers; and high resolution data geophysical surveys by third parties have considerable scope for archaeological re-use in wreck recording.

The addition of field data – whether acquired archaeologically or through the use of other governmental, industrial or recreational sources – would add confidence about the degree to which narratives are represented by actual material in the seabed. Undoubtedly, the physical fabric of many of the wrecks in the Study Area has been adversely affected by the wrecking process itself, but especially by subsequent clearance activities and to some extent salvage, which will have impacted the 'standing' remains above seabed level. Although the loss of standing elements might be considered to diminish significance when viewed through the prism of national importance as applied to listed buildings, it is far from unusual for assets that were originally upstanding to have been scheduled because of elements that are now at or below ground level. Moreover, experience suggests that wrecks can prove to be more coherent and 'legible' than geophysical results or diver observations first indicate.

Further, the potential importance of cargo vessel wrecks of the types considered in this pilot has to take into account the near absence of any other surviving physical remains. There is a contrast between cargo vessels and other forms of contemporary transport heritage – steam trains, traction engines, motor vehicles, aircraft – which survive in preservation. There is also a contrast between metal-hulled steam cargo vessels and other forms of boats and ships, which are also reasonably well represented in preservation: smaller craft, sailing vessels, wooden hulled vessels, and military ships. Steam cargo ships are largely unrepresented, a search of the registers of National Historic Ships UK shows only the SS *Robin*, built on the Thames in 1890: 'the sole surviving British-built steam coaster'[18], but at only 366 grt not especially representative of the assemblage assessed in the course of this pilot. Other relevant vessels in preservation are the *Kyles*[19], built 1872 (122 grt); and the *Basuto*[20], a Clyde puffer built 1902 (64 grt). *Shieldhall* is a larger steam vessel at 1792 grt but it is a sludge disposal vessel rather than a cargo vessel, built in 1955. In short, Britain's heritage of shipbuilding and the mercantile marine – which were so important to England's story post-1840 – is represented almost uniquely by wrecks lying on the seabed. The mechanism set out here has successfully drawn out this importance, not only in the technical terms of ship evolution but also in respect of the human effort embedded in the ships and their cargoes; and with reference not just to an assemblage of vessels that were lost but to the much greater volume of ships that were built and used and of which there is now no trace.

The lack of field data about cargo vessel wrecks on the seabed may be a barrier to concluding that the mechanism has been completely effective in discerning nationally important non-designated assets, as set out in the project objective. Nonetheless, the mechanism has certainly been effective in discerning wrecks that *could* be nationally important, subject to field results. That is to say, considering the results of this pilot in the light of the selection guides for otherwise comparable military, maritime, transport and industrial assets on land, at least some of the wrecks appear to have at least equal claim to national importance – either individually or representing groups of assets. There is an extraordinary and unaccountable imbalance between the importance recognised in post-1840 military, maritime, transport and industrial assets on land, and those that happen to be ships underwater. For example, Dunston Staiths on the Tyne is designated as both a Scheduled Monument (LEN[21] 1005898) and a Listed Building (LEN 1248994), noting that it is 'of historic importance as a relic of the trade which first brought prosperity to Tyneside'[22]. No such importance has been recognised amongst the vessels for which this staithe was actually built. Similarly, the post-1905 'Hammerhead' Crane at the former works of the North East Marine Engineering Company is a II* Listed Building (LEN 1253566); but no examples of the shipboard engines and boilers that they manufactured have been identified as nationally important. More broadly, given that the shipyards and related facilities that made the North East such an innovative and powerful centre for shipbuilding globally have now largely gone, the national importance of the wrecks of vessels built in the region should come to the fore.

[18] http://www.nationalhistoricships.org.uk/register/1794/ss-robin

[19] http://www.nationalhistoricships.org.uk/register/473/kyles

[20] http://www.nationalhistoricships.org.uk/register/11/basuto

[21] LEN – List Entry Number – the unique reference number used for designated heritage assets in the National Heritage List for England https://historicengland.org.uk/listing/the-list/.

[22] See also Coal Staithe at Wearmouth Colliery (LEN 1218456) LB II.

7.2. Application to Other Regions and Circumstances

The mechanism developed for this pilot has been framed in such a way that there is no inherent barrier in transferring it to other circumstances, such as to another region. The mechanism is also sufficiently flexible to be applied to other thematic or period-based assemblages of wrecks, though it is likely that particular key narratives would need to be revised.

If applied in a different region, then it is likely that the patterning of wrecks across the assemblage – and the types of wreck that are picked out – would vary from this pilot off the Tees. Coal is likely to be a dominant cargo across the whole of the east coast, whilst the First and Second World War are likely to feature strongly around the whole coast of England – perhaps even more intensely than off the Tees. Off north west and south west England, a similar exercise might be expected to encompass larger, ocean-going cargo vessels including bigger tramps and cargo liners. Examples of more specialised vessels might also be expected: tankers; bulk carriers; refrigerated vessels, fruit ships and livestock carriers, for example. Similar variety might be anticipated on the south coast, bearing in mind the importance of London and Southampton in ocean-going trades. Given its overall dominance in English shipbuilding in the post-1840 period, then many of the ships in the west and south (as well as the east) are likely to have been built in the North East; a substantial proportion of vessels built on the Clyde might also be expected. Being able to discern such variations in different places around England's coast – and selecting important cargo vessels wrecks accordingly – is a key advantage of the mechanism developed here.

It should be noted that although it has many advantages, a regional approach is likely to favour attributes important to that specific region, and there may be wrecks that would be considered highly important in a different context – built or used in different regions or abroad – that are barely recognised in regional terms. This is a particular hazard with gauging the importance of heritage assets that are intrinsically movable, especially over such large distances. Carrying out regional projects and comparing the results is one way to sensitise the mechanism to 'out of region' importance; but further steps may be required in considering the wrecks of ships built or used in other parts of the UK and further afield.

As indicated above, the mechanism should be entirely capable of dealing with periods and themes other than post-1840 cargo vessels, though the key narratives would have to be tailored accordingly. As post-1840 cargo vessels are so numerous then a local/regional approach as practised here has been appropriate, but for smaller 'populations' of wrecks then it might be preferable to approach other periods and themes on a wider, perhaps national basis. For example, the presence of only one sailing cargo vessel in the Study Area was quite surprising; post-1840 sailing cargo vessels might warrant an assessment in their own right, but across a wider area. Passenger vessels and service vessels might equally be subject to assessment along these lines, to distinguish important wrecks. Equally, fishing vessels could be approached in a similar way. Fishing vessels are quite numerous as a class of wrecks nationally, especially if fishing vessels used as minor warships are included. The radical changes on fishing wrought by industrialisation – in building materials and propulsion, but also in the impact of the railways and the growth of urban populations on the available market – warrant the identification of fishing vessel wrecks that represent the importance of fishing to England's story. This mechanism, adapted to reflect the key narratives that apply to fishing, would provide a sound basis for such an exercise.

7.3. Sources of Additional Data

Several comments have already been made about sources of additional data that would enhance the mechanism's effectiveness. Particular emphasis has been laid on the need for field data – from geophysics and direct observation (diver / ROV) – to confirm what is actually present on the seabed. Such field data could be acquired principally for archaeological purposes, but there is also considerable potential to use geophysical data acquired by other government agencies or by developers. Giving further thought as to how such third party data could be systematically incorporated within archaeological records and in the assessment of importance should be a priority. Equally, greater use might be made of observations by recreational divers, especially as these observations are increasingly accompanied by high resolution still and video imagery. Again, further consideration needs to be given to how such observations are harvested from the diving public, and to what guidance might be provided to direct these observations towards the kinds of information that are of value to wreck records and the ascription of importance.

As noted above, there is a surprising lack of attention to cargo vessel hull form in archaeological records, given that form is often a principal source of categorisation in other branches of archaeology. The positioning of machinery and wheelhouses, and the configuration of decks, are key attributes of cargo vessels, which might be expected to be recorded as a matter of course. This weakness needs to be addressed in the selection of sources, in recording practices, in terminology and potentially in recording structures.

Also as noted above, thesauri for recording cargo vessels warrant elaboration so that key terms such as cargo liner and tramp can be distinguished.

Another area that warrants further consideration is how to encompass information relating to the effort and experience of building cargo ships. Shipbuilding was such a major component of the North East's economy and society that it should be reflected in the way that archaeologists record wrecks and ascribe importance to them. Thinking about wrecks in terms of the effort embedded within them (including the effort embedded in their cargoes and in their operation) is very necessary but is not easily accommodated in the way that wrecks are traditionally recorded. It requires that construction is not considered only in terms of design and shipyard ownership, but also in terms of labour and skills. As on wooden ships, field recording could be sensitised to marks and features that indicate the practices of shipbuilding. Where documentary sources allow, reference could be made to the duration of a ship's construction (which is noted in Lloyd's List), the number of people employed, references to disputes and so on.

The points about the human effort embedded within the wreck of a cargo vessel also apply to all those involved in the production of the cargoes they contain, and to all those involved in loading and discharging those cargoes. These points also apply to the seafarers aboard ship, from the bridge to the bunkers. The wrecks of post-1840 cargo vessels embody the experience of industrialisation and globalisation in a way that few other heritage assets can. In collieries, at staithes, in cargo holds and stoking furnaces, the changes occurring to England in the Nineteenth and Twentieth Centuries would have been grittily present. The fact that shipboard communities were often diverse, drawn from around the world, should also factor more prominently. In practical terms, recording could encompass names of crew – even photographs and documents – where these are available from newspaper reports, crew lists, and lists of casualties, for example. In the field, evidence of living and working

conditions, of different trades, hierarchies, cultural diversity and of women aboard ship[23] could all add to value of records of cargo vessel wrecks.

Archaeological recording often tends to focus on the circumstances leading up to the loss of a vessel, which can be used to some extent to extrapolate the use of the vessel up to that point. That is to say, details of departure, intended destination, cargo and ownership at time of loss do provide an indication of earlier use; but it seems relatively unusual for a fuller history of the use of a vessel to be recorded. Clearly this has a bearing on how the narratives associated with use phases can be incorporated into the assessment of importance. The loss of a vessel only represents a fraction of its career; more information on vessel use prior to loss – cargoes, routes, changes in ownership and so on – would provide a firmer basis for ascribing importance. In particular, it would be interesting to use cargo vessel wrecks to develop a much better understanding and representation of the history of shipping lines in English waters, to again reflect the global dominance and domestic importance of Britain's mercantile trade in this period.

It is worth underlining that the identification of further sources of data must be accompanied by attention to gaps in recording structures and practices, so that additional data can be readily incorporated in a way that facilitates its use in the assessment of importance. Attention to recording structures and practices is also necessary to stimulate archaeological recording, so that it fully reflects the biographies of cargo vessels, rather than focussing on selected aspects of their construction and loss.

[23] A cabin girl was killed when the SS *Patria* was torpedoed in December 1917. The captain's wife and daughter were taken off the SS *Enterprize* before it was wrecked in 1907. It seems likely that there are more instances of women aboard ship, but unrecorded, amongst the wrecks considered in this assessment.

8. Dissemination

O4 To report and disseminate the results of the pilot.

The principal form of dissemination for this pilot anticipated in the Project Design is this report. Interim results were also presented directly to Historic England staff at a meeting on 29 October 2015. Suggestions about further dissemination – including potentially the preparation of an 'Introduction to Heritage Assets' on cargo vessels – are included in the Conclusions and Recommendations, below.

9. Conclusion and Recommendations

This pilot project has successfully developed and demonstrated a mechanism that can be used to ascribe importance to post-1840 cargo vessel wrecks, which are the most numerous class of marine heritage assets. The mechanism is consistent with and builds upon current Historic England guidance and previous projects. It can be used to differentiate between cargo vessels in a variety of circumstances, including in the course of assessments for designation purposes or to inform marine planning and licensing. Statements of significance of the sort prepared in this pilot could also be appended to national and local records to help draw public attention to the importance of maritime heritage lying just off the local coast.

From an initial dataset of 58 wrecks, 37 cargo vessel wrecks have been considered in detail in the course of this pilot. Of these, 16 were considered to be sufficient interest to warrant the preparation of Statements of Significance, of which seven have been prepared to accompany this methodological pilot. The selected wrecks represent and illustrate several key themes in cargo shipping both regionally and nationally; their significance is certainly sufficient to be taken into account in decision-making. The mechanism has been effective in discerning wrecks that *could* be nationally important, subject to field results. In the light of the selection guides for otherwise comparable military, maritime, transport and industrial assets on land, at least some of the wrecks appear to have at least equal claim to national importance. There is an extraordinary and unaccountable imbalance between the importance recognised in post-1840 military, maritime, transport and industrial assets on land, and those that happen to be ships underwater.

The lack of substantive consideration afforded to post-1840 cargo vessel wrecks as a type of heritage asset is difficult to justify given their importance to so many strands of England's history. This project has sought to tease out the multiple strands of significance relating to design and technology, shipbuilding, commerce, seafaring and total war. It is hoped that post-1840 cargo vessel wrecks will start to be regarded as distinct, individual assets that provide a tangible connection to the principal themes of the history of the nineteenth and twentieth centuries, rather than as anonymous multiples amongst a meaningless mass of dots.

In order for the importance of post-1840 cargo vessel wrecks to be drawn out, it is clear from this pilot that changes need to be made to the way in which they are investigated and recorded. Effort is required to substantially improve field data, which also means improving the recording structures, practices and lexicons that frame field investigation. This pilot has been based on existing records, which has required reliance on a combination of documentary sources and field observations by recreational divers. There is nothing intrinsically wrong in this – in fact it provides a good model for data enhancement – but past information gathering has been relatively unstructured. There is a high degree of uncertainty not only in respect of information about specific wrecks, but even in the identification of some wrecks. Wrecks that have yet to be identified by name are not susceptible to having their importance teased out in the manner elaborated by this pilot, which means that some potentially significant wrecks are unrecognised. The correct identification of wrecks on the seabed is a priority therefore, as is developing a corpus of information that can enable still unnamed cargo vessel wrecks to be assessed on the basis of – for example – their apparent date and form. The increasing availability of high-resolution geophysical surveys from marine development and from public initiatives such as the Civil Hydrography Programme provides a great opportunity to advance the identification and characterisation of post-1840 cargo vessel wrecks. Greater effort to capture further seabed observations is also very important, and the increasing availability of underwater still and video photography – via recreational divers, professional archaeologists, and commercial diver and ROV teams – again presents

an important opportunity. However, such opportunities will be wasted if HERs and the NRHE do not develop in order to be able to reflect more detailed and recent information of what is actually on the seabed.

A further reason for substantially improving information about wrecks on the seabed is that the condition of wrecks considered in the pilot appears to vary considerably, even though reliable information about wreck condition is in itself a major data gap. The role of condition in determining importance is ambiguous because of differences in approach between Listing and Scheduling, and accordingly it has been suggested here that if the value of the wreck is evidential (or aesthetic), a higher threshold might apply to physical survival than if the value is historical or communal. Whatever the case, much better information on physical survival is necessary in order to gauge the contribution of condition to importance.

As noted above, this project has relied on documentary records relating to the history and loss of cargo vessels, rather than on archaeological records relating to the character of material on the seabed. This seems to be true of maritime recording more generally and appears to have affected recording structures and practices. Existing maritime records lack the fields and terms that might encourage a greater focus on recording what is present on the seabed. A key recommendation of this pilot is, therefore, that there is a need to incorporate recording structures and practices that focus on field observations within HERs/NRHE, particularly in terms of field observations that have a bearing on the assessment of importance.

Maritime recording has tended to focus on the last voyage and loss of ships, rather than their entire biography. This pilot has adopted a broader perspective, helped by the 'Build-Use-Loss' model developed in earlier projects. Greater attention to the build phase would be helpful in elaborating and recording the hull form of cargo vessels, which is a key factor in understanding remains on the seabed but also in relating vessels to their context and to other wrecks with which they might be compared. Further work could also be done to draw out the particular distinctiveness and chronologies of regions, towns and yards in terms of the wrecks that represent them, which is a potentially rich vein for exploring the importance of cargo vessel wrecks within a community archaeology context.

The relation between wrecks and shipbuilding prompts another concern. The point has been made that post-1840 steam cargo vessels are largely absent from the fleet of ships in preservation, hence wrecks present the only substantial surviving assemblage of this highly significant facet of England's history. In contrast to the Royal Naval Dockyards which have been well-studied and are represented by numerous designated heritage assets, the historic environment of civil shipbuilding – and of the use of private yards in warship construction – in England appears to have been largely ignored. In many cases, above-ground heritage relating to civil shipbuilding has been completely erased, with very few designated assets surviving. This seems difficult to justify given the importance of civil shipbuilding at every level: locally; regionally; nationally; and internationally. It is also in stark contrast to the attention and resulting protection that has been afforded to other aspects of nineteenth and twentieth century heritage. This amounts to an inexplicable imbalance in how England's heritage is safeguarded, which needs to be addressed[24].

[24] For comparison, Historic Environment Scotland is developing an innovative approach to understanding the importance of Clyde shipbuilding through the wrecks of ships built in the Clyde. See Cotswold Archaeology April 2015.

Arguably, the land-based heritage of cargo vessel usage has been better served than civil shipbuilding. There are instances of wharves and staithes that are designated in the North East, and undoubtedly there are designated examples of waterfronts and warehouses that were the exact counterparts to post-1840 cargo vessels elsewhere in England. However, more could be done to articulate the relationship between the acknowledged importance of shipping-related heritage on land, and the importance of the remains of the ships themselves. As with shipyards, there is an opportunity to explore the history of many key ship-owning companies through the physical remains presented by wrecks, as well as through their physical legacy on land – whether it be their offices and facilities or the more monumental products of profitable times.

With respect to the further dissemination of the results of this pilot, and building greater awareness of the importance of post-1840 wrecks, then a key recommendation of this project is to prepare an *Introduction to Heritage Assets* on post-1840 (steam) cargo vessels. This would complement the existing IHA on ships and boats 1840-1950[25] and the *Designation Selection Guide for Ships and Boats*[26], which are understandably broad-brush because they cover the full range of shipping types. Publication of an IHA on post-1840 steam cargo vessels would be an effective way of delivering the necessary background information to enable assessments of importance in the course of marine planning and licensing as required by the UK Marine Policy Statement. An *Introduction to Heritage Assets* on this subject would support Historic England's advice to the MMO and developers, and help inform developer's own consideration of asset importance in the course of licence applications and environmental assessment.

As noted above, virtually all of the information about cargo vessel wrecks on the seabed in the Study Area has been derived from observations by recreational divers. This is very valuable and offers opportunities for further record enhancement in future. It would be helpful to structure and guide observations by recreational divers by providing some form of support, such as a handbook on cargo vessel wrecks. Such a handbook could describe the main features of different forms of cargo vessels and the type of equipment and other artefactual material that might be observed. The intention would be to improve the quality and utility of observations without resorting to a system of recording forms that requires additional support and training. Although likely to be of great value to Historic England, HE may prefer to develop such an initiative in partnership with third parties such as the Council for British Archaeology or British Sub-Aqua Club.

This locally-based pilot project has worked very well as a basis for developing and trialling the mechanism for ascribing importance to post-1840 cargo vessels. A pilot off the Tees has been especially helpful in drawing out larger themes relating to the role of the North East in shipbuilding, in the transport of coal, and in the impact of the First and Second World War on shipping. Although the mechanism could be applied equally to other regions it is worth emphasising that other key narratives might emerge. It is not the case that the results of this pilot can be immediately scaled-up to a national account of the importance of post-1840 cargo vessels, because different themes are likely to affect the identification of importance in other regions. For instance, examples of larger and more specialised vessels might be present in regions traversed by more ocean-going cargo vessels than the predominantly coastal/short-sea vessels examined in the North East. Associations with shipbuilding areas, ports of departure/destination, cargoes and ownership are all likely to have a distinctive regional component also.

[25] http://www.english-heritage.org.uk/publications/iha-ships-boats-1840-1950/130104-ships-boats-1840-1950.pdf

[26] http://www.english-heritage.org.uk/publications/dsg-ships-boats/ships-boats-sg.pdf

In order to develop a national assessment of the importance of cargo vessels, the best approach would be to conduct locally-focussed pilots in one or more other regions and to compare the results. As well as providing further feedback on the effectiveness of the mechanism, similarities and differences between the local pilots would contribute to an overall picture that conveys patterns that concur nationally but is also sensitive to what is important locally.

The mechanism is applicable to other types of wrecks and could be further strengthened by pilots on, for example, fishing vessel wrecks and sailing cargo vessels. As with cargo vessel wrecks in other regions, the same basic framework is likely to lead to different narratives coming to the fore amongst the assemblage of wrecks that is addressed. In the case of both fishing vessels and sailing cargo vessels the numbers of known wrecks will be much smaller than for steam cargo vessels, so a national exercise might be appropriate. Patterns of building, use and loss are likely to be quite distinct from those observed in respect of steam cargo vessels off the Tees.

Finally, it is worth commenting on the partnership approach adopted in this project, combining the work of Fjordr with Tees Archaeology and with substantive input also from Tyne & Wear Archives & Museums. The combination of different expertise and perspectives – encompassing consultancy, local authority planning, and museums – has been a strength in developing an approach that is robust, applicable in different contexts, and outward looking. There is a pressing need to reconnect wrecks on the seabed with their local context and with the plethora of documentary and other historical sources that are becoming available. The perspectives on importance that have arisen are, as a result, relevant and recognisable to different heritage management roles and – we hope – to a broader public. This bodes well for reintroducing our most common marine heritage asset – and everything that these assets represent and embody – back into England's history.

10. Further Reading

10.1. Secondary Sources

Armstrong, J. and Stevenson, J., 1997, 'Liverpool to Hull - By Sea?', *The Mariner's Mirror* 83, 2: 150-168.

Buxton, I., Fenton, R. and Murphy, H., 2015, 'Measuring Britain's Merchant Shipbuilding Output in the Twentieth Century', *The Mariner's Mirror*, 101,3: 304-322.

Clarke, J.F., 1997, *Building Ships on the North East Coast: a Labour of Love, Risk and Pain. Part 1. c. 1640-1914*. Whitley Bay: Bewick Press.

Clarke, J.F., 1997, *Building Ships on the North East Coast: a Labour of Love, Risk and Pain. Part 2. c. 1914-1980*. Whitley Bay: Bewick Press.

Cotswold Archaeology, April 2015, Clyde-Built: A Study of the Clyde Shipbuilding Industry as Represented by Shipwrecks within the Clyde River and Estuary. CA Project No.: 770001. CA Report No.: 15133.

Craig, R., 1980, *The Ship: Steam Tramps and Cargo Liners 1850-1950*. National Maritime Museum. London: HMSO.

Dougan, D., 1968, *The History of North East Shipbuilding*. London: Allen and Unwin.

Fenton, R., 2016, 'Refining the Steam Coaster: Scotland's Contribution', *The Mariner's Mirror* 102,1: 14-33.

Flagg, A.C., 1979, *Notes on the History of Shipbuilding in South Shields 1746-1946*. South Tyneside Borough Council Library Service.

Greenhill, B. (ed.), 1992, *The Advent of Steam: The Merchant Steamship Before 1900*. London: Conway Maritime Press.

Greenway, A. (ed.), 1994, *Golden Age of Shipping: Classic Merchant Ship 1900-1960*. London: Conway Maritime Press.

MacRae, J.A. and Waine, C.V., 1990, *The Steam Collier Fleets*. Wolverhampton: Waine Research.

Middlemiss, N.L., 1993, *British Shipbuilding Yards. Volume 1: North-East Coast*. Newcastle: Shield Publications.

Pollard, S. and Robertson, P., 1979, *The British Shipbuilding Industry, 1870-1914*. Cambridge, Mass.: Harvard University Press.

Slaven, A., 2013, *British Shipbuilding 1500-2010*. Lancaster: Crucible Books.

Smith, J.W. and Holden, T.S., 1953, *Where Ships are Born – Sunderland 1346-1946 (and later years): A History of Shipbuilding on the River Wear*. Sunderland: Thomas Reed.

Waine, C.V. and Fenton, R.S., 1994, *Steam Coasters and Short Sea Traders*. Third Edn. Wolverhampton: Waine Research.

10.2. Policy, Guidance and Related Studies

General

DCMS, March 2010, *Principles of Selection for Listing Buildings*. DCMS. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/137695/Principles_Selection_Listing_1_.pdf.

DCMS, October 2013, *Scheduled Monuments and Nationally Important but Non-Scheduled Monuments*. DCMS. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/249695/SM_policy_statement_10-2013__2_.pdf

English Heritage, April 2008, *Conservation Principles, Policies and Guidance. English Heritage*. https://www.historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic-environment/

HM Government 2010, *UK Marine Policy Statement*. TSO. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf

Historic England, March 2015, The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning 3. Historic England. https://www.historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/

National Historic Ships UK, March 2014, *Review of the National Historic Fleet and Assessment Methodology: consultation report*. National Historic Ships UK. http://www.nationalhistoricships.org.uk/data/files/Consultation_Report_Final_Version.pdf

Ships; boats; wrecks

English Heritage, 2010, *Protected Wreck Sites: moving towards a new way of managing England's historic environment*. English Heritage. https://www.historicengland.org.uk/images-books/publications/protected-wreck-sites/

English Heritage, April 2012, *Introductions to Heritage Assets – Ships and Boats: Prehistory to 1840*. English Heritage. https://historicengland.org.uk/images-books/publications/iha-ships-boats/

English Heritage, December 2012, *Introductions to Heritage Assets – Ships and Boats: 1840 to 1950*. English Heritage. https://historicengland.org.uk/images-books/publications/iha-ships-boats-1840-1950/

English Heritage, May 2012, *Designation Selection Guide -- Ships and Boats: Prehistory to Present. English Heritage*. https://historicengland.org.uk/images-books/publications/dsg-ships-boats/

Wessex Archaeology, April 2006, *On the Importance of Shipwrecks. Vol. 1. Unpublished report for English Heritage*. WA Ref: 58591.02a; EH 3767. http://archaeologydataservice.ac.uk/archives/view/shipwrecks_eh_2006/

Wessex Archaeology, February 2008, *Marine Class Descriptions and Principles of Selection in Aggregate Areas*. Review Draft. WA Ref: 67040.02; EH 5383. http://archaeologydataservice.ac.uk/archives/view/marinemcd_eh_2008/index.cfm

Wessex Archaeology, February 2008, *Selection Guide: Boats and Ships in Archaeological Contexts*. Review Draft. WA Ref: 67040; EH 5383. http://archaeologydataservice.ac.uk/archives/view/marinemcd_eh_2008/index.cfm

Wessex Archaeology, February 2011, *Assessing Boats and Ships 1860-1913*. WA Ref.: 70861.01; EH 5693. http://archaeologydataservice.ac.uk/archives/view/boatsandships_eh_2011/

Wessex Archaeology, February 2011, *Assessing Boats and Ships 1914-1938*. WA Ref.: 70861.02; EH 5693. http://archaeologydataservice.ac.uk/archives/view/boatsandships_eh_2011/

Wessex Archaeology, February 2011, *Assessing Boats and Ships 1939-1950*. WA Ref.: 70861.03; EH 5693. http://archaeologydataservice.ac.uk/archives/view/boatsandships_eh_2011/

Wessex Archaeology, February 2011, *Assessing Boats and Ships 1860-1950: Methodology Report*. WA Ref.: 70861.04; EH 5693. http://archaeologydataservice.ac.uk/archives/view/boatsandships_eh_2011/

Wessex Archaeology, February 2012, GAD 23 (the Bowsprit Wreck), Goodwin Sands, Kent: undesignated site assessment. WA ref. 53111.02k-25.

Maritime and Naval

English Heritage, April 2011, *Listing Selection Guide: Maritime and Naval Buildings*. English Heritage. https://www.historicengland.org.uk/images-books/publications/dlsg-maritime-naval-buildings/

English Heritage, February 2013, *Scheduling Selection Guide: Maritime and Naval*. English Heritage. https://www.historicengland.org.uk/images-books/publications/dssg-maritime-naval/

Industrial

English Heritage, April 2011, *Listing Selection Guide: Industrial Structures*. English Heritage. https://www.historicengland.org.uk/images-books/publications/dlsg-industrial/

English Heritage, March 2013, *Scheduling Selection Guide: Industrial Sites*. English Heritage. https://www.historicengland.org.uk/images-books/publications/dssg-industrial-sites/

Transport

English Heritage, April 2011, *Listing Selection Guide: Transport Buildings*. English Heritage. https://www.historicengland.org.uk/images-books/publications/dlsg-transport-buildings/

English Heritage, May 2012, *Scheduling Selection Guide: Transport Sites*. English Heritage. https://www.historicengland.org.uk/images-books/publications/dssg-transport-sites/

Military

English Heritage, May 2011, *Listing Selection Guide: Military Structures*. English Heritage. https://www.historicengland.org.uk/images-books/publications/dlsg-military/

English Heritage, March 2013, *Scheduling Selection Guide: Military Sites Post 1500*. English Heritage. https://historicengland.org.uk/images-books/publications/dssg-military-post1500/

Appendices

Appendix I: A mechanism for identifying national importance

	Key Narratives					**Survival**	**Investigation**
	Period; Rarity; Diversity; Group Value					Survival /Condition; Fragility /Vulnerability	Documentation /Finds; Potential
	Construction (hull and super-structure)	**Motive Power** (engine, machinery, fittings)	**Trade** (cargo)	**Life on Board** (domestic / workplace)	**England's History**		
Build							
Use							
Loss							

Appendix II: Mechanism applied in worksheet format

(one row per wreck; selection of wrecks only)

HER#	Name	Flag	Key narratives: build phase	Key narratives: use phase	Key narratives: loss phase	Survival	Investigation
3079	Ardgantock			**England's History**: First World War	**England's History**: FWW loss; court case over 'War Risk' **Life on Board**: collision	Well broken-up wreck. Holds have collapsed; bow intact (**Construction**) Single boiler easily discernible (**Motive Power)** Possible explosives present (**Trade**)	Bell, portholes etc. recovered (**Construction**) Whistle, telegraph, steering pedestal. recovered (**Motive Power**)
1848	Birger	x	**Motive Power**: Only sailing vessel		**Life on Board**: 13 lost **Life on Board**: lifesaving	Some survival Wooden keel with brass sheathing; capstan; windlass (**Construction**)	Rigging elements in museum (**Motive Power**) Anchor recovered (**Construction**) Query over identification of elements on Coatham Sands
3163	Erich Lea			**England's History**: coal/ballast **England's History**: First World War **Trade**: local departure	**England's History**: FWW loss; U-boat war; linked to convoy	Largely intact' (UKHO - Wrecksite)	
3150	Kilkis		**England's History**: NE build	**England's History**: First World War **Trade**: local destination **Trade**: iron ore	**England's History**: FWW loss; U-boat war	Intact but disintegrating; query over ID Upright but centre section collapsed (**Construction**) Engine and boilers present (**Motive Power**)	
5046	Dimitris	x	**Construction**: Standard A Class	**England's History**: long duration in use **Trade**: local destination	**Life on Board**: life saving	Upright, broken Mast (**Construction**) Boilers, spare prop, prop tunnel (**Motive Power)**	'Lots to see'

Appendix III: Potential application of mechanism in table format

(selected wrecks only)

3079 Ardgantock

	Key Narratives					Survival	Investigation
	Period; Rarity; Diversity; Group Value					Survival /Condition; Fragility /Vulnerability	Documentation /Finds; Potential
	Construction (hull and super-structure)	**Motive Power** (engine, machinery, fittings)	**Trade** (cargo)	**Life on Board** (domestic / workplace)	**England's History**		
Build						Holds have collapsed; bow intact (**Construction**) Well broken-up wreck (**Construction**) Single boiler easily discernible (**Motive Power**) Possible explosives present (**Trade**)	Bell, portholes etc. recovered (**Construction**) Whistle, telegraph, steering pedestal. recovered (**Motive Power**)
Use					First World War		
Loss				collision	FWW loss; court case over 'War Risk'		

5046 Dimitris

	Key Narratives					Survival	Investigation
	Period; Rarity; Diversity; Group Value					Survival /Condition; Fragility /Vulnerability	Documentation /Finds; Potential
	Construction (hull and super-structure)	**Motive Power** (engine, machinery, fittings)	**Trade** (cargo)	**Life on Board** (domestic / workplace)	**England's History**		
Build	Standard A Class					Mast (**Construction**) Boilers, spare prop, prop tunnel (**Motive Power)** Upright, broken	'Lots to see'
Use			Local destination		Long duration in use		
Loss							

Appendix IV: Potential elaboration of mechanism in table format

	Key Narratives					**Survival**	**Investigation**
	Period; Rarity; Diversity; Group Value					Survival /Condition; Fragility /Vulnerability	Documentation /Finds; Potential
	Construction (hull and super-structure)	**Motive Power** (engine, machinery, fittings)	**Trade** (cargo)	**Life on Board** (domestic / workplace)	**England's History**		
Build	How does the vessel reflect the development and adoption of ship design and approaches to construction?	How does the vessel's engine, machinery, fittings reflect the development and adoption of motive power?	How does the ship's build reflect or influence specific cargoes, routes, forms of trading?	What aspects of the vessel's build provide insights into working and living aboard ships?	How was building the vessel related to broader aspects of England's history?	What physical material survives relating to the narratives? What is its apparent trajectory?	How could investigation of the ship, its assemblage and related documentation inform and engage people about the narratives?
Use	How did anticipated use affect construction? What variety/changes of use did the vessel undergo?	How did motive power affect use? Was motive power adapted / changed?	How did the use of the vessel reflect or influence specific cargoes, routes, forms of trading?	How did working and living arrangements consolidate or change in the course of the vessel's use?	How was the vessel's use related to broader aspects of England's history?		
Loss	Is there a relationship between construction and loss?	Did motive power contribute to loss?	Was there a relationship between trade (route; shipping line) and loss? How did cargo affect loss?	What role did crew play in the vessel's loss? How did they (and others) deal with incident?	How is the individual loss related to broader aspects of England's history?		

Appendix V: Statements of Significance for Selected Cargo Vessels

Birger
Corsham
Dimitris
Earl Percy
Harvest
Moorwood
Pandora

Statement of Significance: Birger [1870-1898].

Tees HER No. 1848 **NRHE No.** 936592

Location: Saltscar Rocks, Redcar

Lat. 54 37.70 **Long.** 001 02.90

Summary: Wreckage of a Finnish wooden sailing vessel with a well documented and tragic story.

Build

The Birger was a Finnish built and owned barque of 737 tons. Despite sailing vessels being an important part of merchant shipping in the area, the Birger is the only known, post 1840, wreck of this type off the Cleveland coast.

Sea bed wreckage identified as the remains of the Birger includes an iron capstan, remains of a windlass, an Admiralty pattern anchor and a section of keel with brass sheathing. Several items have been recovered from the wreckage including capstans and dead-eyes and are on display in the local Zetland Lifeboat Museum. A second anchor was raised from the sea-bed and now stands in a prominent location on the sea-front as a memorial to the crew.

Use

The Birger had a relatively long life for a wooden sailing vessel and was involved with international trade. During her time she visited New York, Liverpool, Havana, New Orleans, Hamburg and Philadelphia. At the time of her loss the vessel was carrying a cargo of salt.

Loss

The loss of the vessel was prolonged and is very well-documented in local newspaper accounts. It was witnessed by thousands of people along the north-east coast as the event unfolded.

On 18th October 1898 the vessel was on passage from San Felieu de Guixols, Spain to Abo, Finland with a crew of 15 including the Master Karl Oscar Nordling. The vessel had been driven back from the approach to Norway by gale force winds. The ship sprung a leak and narrowly missed being wrecked at Grimsby, Scarborough, Robin Hoods Bay, Whitby and Saltburn.

On the afternoon, watched by thousands of onlookers the vessel struck the rocky outcrop at Saltscar. The Captain and his Mate were killed by falling masts and the crew were swept to sea as the ship broke in two. The vessel could not be reached by rockets or by the two lifeboats that were launched. The bow section is said to have sank. A large section of wreckage with three crew clinging to it smashed through Coatham Pier that moments before had been packed with onlookers. One crewman was rescued from the remains of the pier by lowering ropes. There was only one other survivor. Some of the crew are buried locally at Coatham Church at Redcar and St. Germain's Church at Marske. Five bodies washed up at Seaton Carew were buried there at Holy Trinity Church.

Significance

The Birger has **historical value** as a well-researched vessel. The history of the vessel and its wreck represent an important document of trade, peril at sea, seamanship, and life-saving. Accounts survive of her build and ownership. The vessel has international links. The names of all of the crew, including the survivors are known and photographs of them survive. Archive material is held by the Finnish National Maritime Museum.

The fragile sea-bed remains may have **evidential value** in advancing our understanding of the vessel and illustrating the story of the wreck.

The wreck of the Birger has **communal value**. It is commemorated locally, both in museum interpretation and in a sea-front memorial. The remains of the vessel form a popular dive site. The majority of the crew are buried locally. The places of burial, the site of the wreck, the ruin of the pier and the existing memorials represent a salient group of relevant 'places' that illustrate this tragic story.

These places, including the dive site can be appreciated for their **aesthetic value**. Along with objects from the wreck on display locally they present educational and recreational opportunities that give them **instrumental value**.

Gaps in Understanding Significance

Further baseline data on the extent, composition and character of the remains of the Birger on the seabed are required to clarify the evidential value of the wreck.

Statement of Significance: Corsham [1918]

Tees HER No. 3141 **NRHE No.** 908851

Location: Offshore at Saltburn

Lat. 54 39.975 **Long.** 000 57.699

Summary: The seabed remains of a steel steamship that sank following a torpedo attack by a German submarine.

Build

The Corsham is a North East built steel steamship (3050 grt). The ship was built in 1918 by Austin, S.P. & Son Ltd, Sunderland (Est. 1879; closed 1954). She was fitted with a steam triple expansion engine with two boilers by Richardson Westgarth, a notable engineering company who operated throughout the North-East. The vessel was an armed merchantman fitted with a 4.7inch gun.

The vessel structure is reported by recreational divers to be very substantial and although broken into four sections is complete and legible.

Use

The vessel was part of a fleet owned by Cory Colliers (Est. 1896) who were principally concerned with the north-east to London coal trade but also involved with commercial waste transport. The company is still solvent (Cory Environmental) and provides waste management for local authorities.

During World War I the Government requisitioned much of Cory's fleet for the Royal Navy. Cory encouraged most of his workers to enlist and they formed an entire company of the 6th Battalion, The Royal East Kent Regiment as a 'pals' unit.

Loss

On the 8th March 1918 the Corsham was north bound from London to the Tyne in ballast. The Master, Daniel Mcalister, was keeping to the war channel with a lookout posted on the bridge and a gunner on station on the stern. Neither saw the torpedo launched by UC-40 that struck the ship on the starboard side. The ship sank in 3 minutes and there was little time to abandon. Of the 26 hands nine died from the effects of exposure and immersion. Twelve men made it to the on-board lifeboat and the rest were picked up by patrol boats in the area.

Significance

The vessel is a local example of a built-for-purpose collier employed as part of a company fleet serving the North-East coal trade. Built during wartime the vessel had a very short life and has **historical value** demonstrating the risks of conflict at sea and particularly the threat from the German U-boats in the east coast war channel. The historical value of the vessel and its wreck represent an important document of trade, industry navigation, technology, life-saving and conflict during World War I.

Evidential value is apparent as the organisation of the vessel is legible in its wreck and can shed light on its domestic and cargo arrangements, use of technology, military equipment and general life of board. The cause of loss may be legible in its remains.

The wreck holds **communal value** to those interested in World War I conflict and the remains are a popular dive site.

Gaps in Understanding Significance

Further baseline data on the extent, composition and character of the remains of the Corsham on the seabed are required to clarify the **evidential value** of the wreck.

The loss of the vessel is well-documented, but is open to further research. Further information on the crew members, both those who survived and those lost would increase the **communal value** of the site.

Opportunities may exist to promote the story of the vessel for educational purposes, including recreations diving, to enhance its **instrumental value**.

Statement of Significance: Dimitris [1918-1953].

Tees HER No. 5046 **NRHE No.** 1525222

Location: Offshore at Redcar

Lat. 54 37.450 **Long.** 000 44.250

Summary: The well preserved remains of an iron steamship that ran aground on East Scar, Redcar.

Build

The Dimitris is a Clyde built steamship (5250 grt). The vessel was built in 1918 by Caird & Co. Ltd. (Est. 1828) at Greenock and was powered by a 3-cylinder triple expansion engine. Caird & Co. Ltd were taken over by Harland & Wolf in 1915 with the Caird name remaining in use until 1922 making the Dimitris one of its later orders.

The vessel structure is reported by recreational divers to lie upright but is extensively broken due to salvaging. The boilers are still present and the prop tunnel can be swum through. The mast and a boiler can be seen above water at low tide.

Use

Dimitris was built as a Standard 'A' Class cargo vessel named the 'War Malayan' for The Shipping Controller. Completed just after the end of the war she was sold to Embiricos, G.M. & Sons, Andros, Greece and was renamed as the 'Michael L. Embiricos'.

The ship was in service for over 30 years and survived the Second World War. In 1952 she was sold to new Greek owners, Bogiazides Brothers & N.D. Rallias and re-named 'Dimitris'.

Loss

The loss of the vessel is well-documented in local newspapers and oral accounts of the crew. On 13th December 1953 the vessel was on passage from the port of Bona, Algeria to Middlesbrough with a cargo of iron ore. At around 9:30p.m., in good visibility and with the moon shining, the vessel inexplicably crashed onto the East Scar Rocks. The Redcar Lifeboat 'City of Leeds' rescued 22 of the 36 strong crew with the remainder brought ashore in fishing boats.

The ship was found to be in poor condition when boarded at daylight and could not be refloated. Extensive salvage operations took place the following year.

Significance

Built during World War I, the Dimitris is remarkable for its long duration of use, including its survival of World War II. The **historical value** of the vessel and its wreck represent an important document of trade, industry navigation and technology in the first half of the 20th century. The late date of the wreck is significant with very few post-World War II losses documented off the North-East coast.

Although salvaged and dispersed the wreck still has **evidential value**. The organisation of the vessel is legible in its wreck and can shed light on its domestic and cargo arrangements, use of technology and general life of board.

The wreck is regularly visited by recreational divers as a novice dive and is partly visible to the general public at low tide providing **communal value**.

Gaps in Understanding Significance

Further baseline data on the extent, composition and character of the remains of the Dimitris on the seabed are required to clarify the **evidential value** of the wreck.

The loss of the vessel is well-documented, but is open to further research. Further information on the crew members, both those who survived and those lost would increase the **communal value** of the site, particularly given its relatively recent date of loss.

Opportunities may exist to promote the story of the vessel for educational purposes, including recreations diving, to enhance its **instrumental value**.

Statement of Significance: Earl Percy [1865-1888].

Tees HER No. 5091 **NRHE No.** 908827

Location: Offshore NW of Whitby

Lat. 54 37.450 **Long.** 000 44.250

Summary: The well preserved remains of an iron built steamship that sank following collision in 1888.

Build

The Earl Percy is a North East built iron screw steamship (952 grt). The vessel was built in 1865 and is an early local example from Palmer's Shipbuilding and Iron Co. Ltd, Newcastle (Est. 1851). Palmer's had famously launched the first screw driven steam collier in 1852.

At the time of loss Earl Percy was fit with an aft steam 1 x 2 cylinder compound engine by R. W. Hawthorn, Newcastle (Est. 1885), an early example of the company's work. Hawthorn's was later acquired by Swan, Hunter & Wigham Richardson Ltd who had an international reputation and remained a major employer in the region until 1986.

The vessel includes the first production example of a steam turbine generator, installed in 1885 to power the ship's lights. The turbine generator had been invented in 1884 by Charles Parsons. The prototype machine is displayed in the Science Museum.

The vessel structure is reported by recreational divers to be well preserved. Diver accounts report survival of two small scotch boilers, a donkey boiler and a large compound engine. The organisation of the vessel remains legible with the boilers aft with a steering engine block located between the two cargo holds suggesting that the bridge was amidships. The forecastle part of the bow is said to be standing.

Use

The Earl Percy was locally owned by the Tyne Steam Shipbuilding Co. and was a coaster providing both cargo and passenger transport.

Diver accounts of the cargo holds describe clay pipes in the rear hold with part of the forward hold containing copper ingots in the shape of paving slabs.

Crockery recovered from the ship is stamped with the company flag and letters 'TSSC' (Tyne Steam Ship. Co.).

Loss

The loss of the vessel is well-documented in local newspaper accounts. On 15th September 1888 the vessel was on passage from Newcastle to Rotterdam with 7 passengers, a crew of 18 and a general cargo of about 300 tons. The vessel ran into dense fog approximately 10-12 miles off Whitby and collided with the steamship WEAR. The vessel was calmly abandoned without loss of life.

The Earl Percy was taken into tow by the steamer POPLAR and the steam tug HELGA and proceeded towards the Tees. The ship had not been towed long when the water pressure burst the aft bulkhead causing her to sink stern first.

Significance

The Earl Percy is a well-preserved example of a once common type of locally built and owned cargo and passenger vessel with high **evidential value**. Its remains are legible and can provide information on the early work of two renowned shipyards in the form of its construction and motive power. The vessel contains a 'World's First' in its steam turbine generator. The organisation of the vessel is legible in its wreck and can shed light on its domestic and cargo arrangements, use of technology and general life of board. The cause of loss may also be legible within the wreckage.

The vessel has **historical value** and its wreck represents an important document of trade, industry navigation and technology, at a crucial point in England's industrial expansion.

The vessel has **communal value** and is regularly dived by local clubs. It's connection to notable shipyards makes it of interest to their researchers and former workers.

Gaps in Understanding Significance

The loss of the vessel is well-documented, but open to further research. Particular emphasis could be placed on the crew and the role of life-saving in the story of the wreck.

Opportunities may exist to promote the story of the vessel for educational purposes, including recreations diving, to enhance its **instrumental value**.

Statement of Significance: Harvest [1889]

Tees HER No. 3129 **NRHE No.** 908838

Location: Offshore at Teesmouth

Lat. 54 38 57 **Long.** 001 07 47

Summary: The seabed remains of an iron steamship that sank following a collision.

Build

The Harvest is a North East built iron steamship (1338 grt). The ship was built in 1881 by Irvine & Co. of West Hartlepool (Est. 1864; closed 1930). She was fitted with a compound engine with one screw by T. Richardson & Sons, West Hartlepool (Est. 1847; closed 1900). Both the builders and engine makers were notable local companies and major employers.

The site of the wreck was reported as 'clear' for much of the 20th century but in recent years a large amount of wreckage has been reported by recreational divers. This includes the steering quadrant, rudder post, prop-shaft and engine block, all lying in relation to each other. The pig-iron cargo is visible as a legible mound.

Use

The vessel was built for and owned by English & Co., Middlesbrough. At the time of loss it was carrying a cargo of pig iron from Middlesbrough to Szczecin, Poland.

Loss

On the 12th September 1889, the Harvest had departed from Middlesbrough with her cargo of 1750 tons of pig iron when she was involved in a serious collision at the mouth of the Tees. The Harvest was struck on her port side, in fine weather, by the screw steamer 'Regent' suffering considerable damage and sank immediately. The captain and 17 crew were saved by the steam tug 'Ryhope'. The Regent suffered considerable damage but was able to proceed to Middlesbrough for repairs. Attempts were made to lift the Harvest but were unsuccessful.

Significance

The vessel is an example of a locally built and ordered vessel involved in continental trade. The vessel had a very short life and has **historical value** demonstrating the risks of navigational error. The historical value of the vessel and its wreck represent an important document of trade, industry, technology and life-saving during the late 19th century.

Evidential value is apparent as the organisation of the vessel is legible in its wreck and can shed light on its cargo arrangements, use of technology and general life on board. The cause of loss may be legible in its remains with the prop-shaft casing reported as being holed in places.

The wreck holds **communal value** to those interested in local shipping and the remains are a popular novice dive site with various local clubs.

Gaps in Understanding Significance

Further baseline data on the extent, composition and character of the remains of the Harvest on the seabed are required to clarify the **evidential value** of the wreck.

The loss of the vessel is well-documented, but is open to further research. Further information on the activities of the owners and crew members could increase the **communal value** of the site.

Opportunities may exist to promote the story of the vessel for educational purposes, including recreational diving, to enhance its **instrumental value**.

Statement of Significance: Moorwood [1940-1941].

Tees HER No. 3118 **NRHE No.** 908598

Location: Offshore at Skinningrove

Lat. 54 37.00 **Long.** 000 52.02

Summary: The seabed remains of a steel steamship that sank following a torpedo attack by German aircraft.

Build

The Moorwood is a North East built steel steamship (2056 grt). The ship was locally built in 1940 by Austin, S.P. & Son Ltd, Sunderland (Est. 1879; closed 1954). She was fitted with a steam triple expansion engine with two super-heated boilers and a single shaft by North Eastern Marine Engineering Co, Sunderland. The vessel was an armed merchantman fitted with a degaussing coil.

The vessel structure is reported by recreational divers to be broken-up but legible. Diver accounts report survival of the engine and two boilers. The wreck lies to starboard . The cargo holds and bow have collapsed but are still in line. The degaussing cable and wheelhouse have also been reported and a telegraph has been recovered.

Use

The vessel was owned by Tyne & Wear Shipping – Wm. France, Fenwick & Co. who were principally concerned with the north-east to London coal trade but also involved with Baltic trade, returning with timber.

Loss

On the 11th June 1941 the Moorwood was on passage from London to Blyth in ballast. The vessel foundered and was lost after being torpedoed by German aircraft. The crew of 19 and 3 gunners were all saved.

Significance

The vessel has **historical value** as a local example of a built-for-purpose tramp employed as part of a company fleet serving the North-East coal trade. Built during wartime the vessel had a very short life and demonstrates the risks of conflict at sea and particularly the threat from the German airforce. The history of the vessel and its wreck represent an important document of trade, industry navigation, technology life-saving and conflict during World War II.

The wreck itself has **evidential value**. Its remains are legible and can provide information on its construction and motive power. The organisation of the vessel is legible in its wreck and can shed light on its domestic and cargo arrangements, use of technology, military equipment and general life of board. The cause of loss may also be legible within the wreckage.

The vessel has **communal value** and is regularly dived by local clubs. It's connection to notable shipyards and owners makes it of interest to their researchers and former workers.

Gaps in Understanding Significance

Further baseline data on the extent, composition and character of the remains of the Moorwood on the seabed are required to clarify the **evidential value** of the wreck.

The loss of the vessel is not well-documented and is open to further research. Further research could target the crew of the vessel and the German aircraft involved to increase the **communal and historical value** of the remains.

Opportunities may exist to promote the story of the vessel for educational purposes, including recreations diving, to enhance its **instrumental value**.

Statement of Significance: Pandora [1951]

Tees HER No. 5092 **NRHE No.** 1525202

Location: Offshore near Runswick

Lat. 54 34.25 **Long.** 001 41.30

Summary: The seabed remains of a small intact iron steamship that sank in rough seas. All hands were lost following several heroic but failed rescue attempts.

Build

The Pandora is a North East built iron steamship (203 grt). The ship was built in 1893 by Schlesinger Davis & Co. of Wallsend (Est. 1863; acquired 1893 by Swan, Hunter and Wigham Richardson Ltd.). Schlesinger was a former apprentice of Robert Stephenson 's works at Newcastle. The Pandora was fitted with a compound engine with single boiler and one screw by Headley and Boyd Engineers, North Shields.

The vessel is an interesting example of a late iron cargo ship with a late example of a compound engine. Diver reports suggest the wreck is legible and is upright with the bows seaward. The aft section is still fully decked and has the remains of the wheel house in place. Superstructure still covers her machinery but there is access to the compound engine, and to the back of the single boiler. There is an open hatch to small aft store room. The one forward cargo hold is full of stone (whinstone chips) which is mostly covered in silt . The forward mast has fallen back and across the hold with the bell bracket still fixed on. At the bow the forecastle is complete, with winches and a toilet on the post side. Accommodation is visible and a hatch provides access to the inner bow area. The rudder and propeller are still in place with some damage from the wreck event.

Local divers have recovered the bell, the ship's binoculars, engine maker's plate and a Walker's Mk III ship's log.

Use

The vessel has a long history of use, including requisition as an anti-submarine vessel in World War II. It has the following ownership history:-

1893-1903 Leith & Montrose Shipping Co., Montrose, Scotland

1903-1947 Anglesey Shipping Co. - Baron Penrhyn, Bangor (Wales)

1941-1947 British Royal Navy - Admiralty - RN, London (known as SS Icewhale)

1947-1948 Ormiston, John D., Edinburgh

1948-1951 Merchinson Steamship Co. Ltd, Edinburgh

Loss

On the 22nd October 1951 the Pandora was travelling from Newburgh to Hull with a cargo of Whinstone chips. During a fierce NNE gale the Pandora fired a distress rocket from a small

coaster. The alarm was raised by the Staithes Coastguard but the raging sea prevented the Whitby, Runswick and Redcar lifeboats from being launched.

The steamer Gripfast, later renamed Pitsa, was nearby and approached the stricken vessel to find the Pandora labouring badly and shipping heavy seas. At 7.30am the Gripfast came alongside and the crew of the Pandora launched a small lifeboat on the lee-side, this capsized and sank. They tried to launch another boat on the windward side but this too proved impossible. The master of the Gripfast had oil poured on to the water to ease the fury of the sea, the idea was for the crew to jump into the sea, but no one would jump. In the next attempt the Gripfast came close alongside and lines where thrown on to the Pandora. Two of these were caught, but the men who caught them were so distressed and exhausted that they could not hold on.

The two vessels were side by side for only a few minutes and as they drifted apart, the Pandora slipped slowly aft around the port quarter of the Gripfast colliding with the aft end and damaging her propeller and thrust block. Helplessly the crew watched as the Pandora listed to port and settled down with the seas and sank. Men were seen in the water drifting with the wreckage but the Gripfast was too damaged to manoeuvre and they could not be saved. The weather was getting worse and the Gripfast radioed for a tug to tow her to Hartlepool.

A body and a good deal of wreckage from the Pandora were washed ashore at Saltwick Nab the following day. Three more bodies, including that of the Captain, came ashore to the east of Whitby soon after. Two others were never found. A local controversy raged for many months afterwards. An inquiry was held into the decision made by the lifeboat service and this resulted in much bitterness between crews, forcing the closure of the Runswick Station and a mass resignation of the Whitby crew.

Significance

The vessel is an example of a locally built and ordered vessel involved in continental trade. The vessel had a long service and has **historical value** demonstrating the risks of perils at sea. The historical value of the vessel and its wreck represent an important document of trade, industry, war service, technology and life-saving during the late 19th and first half of the 20th century.

Evidential value is apparent as the wreck is largely complete and can shed light on its cargo arrangements, use of technology and general life on board. The cause of loss may be legible in its remains with propeller reported as damage during the failed rescue attempt.

The wreck holds **communal value** to those interested in local shipping and the remains are a popular with various local clubs.

Gaps in Understanding Significance

Further baseline data on the extent, composition and character of the remains of the Pandora on the seabed are required to clarify the **evidential value** of the wreck.

The loss of the vessel is well-documented, but is open to further research. Further information on the activities of the owners and crew members could increase the **communal value** of the site.

Opportunities may exist to promote the story of the vessel for educational purposes, including recreational diving, to enhance its **instrumental value**.

Appendix VI: Gazetteer of Cargo Vessels in the Study Area

See Attached Worksheet

Appendix VII: Fields (Columns) used in wreck worksheet

HER#
Name
Flag
Key narratives: build phase
Key narratives: use phase
Key narratives: loss phase
Survival
Investigation
Site Type
Vessel Type
Classification
Construction
Engine
Boilers
Propulsion
Machinery Position
Wheelhouse Position
Hull
Period Built
Built Group
Built Order
When Built
Where Group
Where Built
Builders
Tonnage Group
Tonnage Order
Tonnage
Relative Tonnage
Tonnage Qualifier
Class
Length
Breadth
Depth of hold
Nationality
POR [Port of Registration]
Sailed from
Bound for
Cargo Quantity
Cargo
Owner
Master
Crew
Date Lost Day
Date Lost Mth
Date Lost Yr
Wartime
Manner Lost
Crew lost
Percentage
Crew proportion
Defined Location
Description
References
Evidence
Condition
Legal Status
Other id system
County
District
Easting
Northing
Latitude
Longitude
Km100
NGRE
NGRN
NGRQ
Chart No
Map
Depth
Method of find/fix
Compiled By
Date Compiled
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Date Edited

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