Hampshire & Wight Trust for MARITIME Archaeology

ENGLISH HERITAGE

Solent Marine Heritage Assets: Defining, investigating, monitoring and reporting 2008-2011

HMS *Invincible* Protected Wreck Site

March 2010

CONTENTS

LIST OF FIGURES

i. ACKNOWLEDGEMENTS

The Solent Marine Heritage Assets project was commissioned by English Heritage (EH) following a proposal from the Hampshire and Wight Trust for Maritime Archaeology (HWTMA). The project has been designed as a heritage partnership which promotes a mutually beneficial working relationship between EH and the HWTMA. The work undertaken, particularly the diving fieldwork is arranged in conjunction with other HWTMA research work, to allow most effective use of resources. The project also uses data and information gathered by the HWTMA over the past 18 years. The project results help fulfil the agendas of both EH and HWTMA.

The HWTMA would also like to acknowledge a range of funders who, through their support of work on the sites included within the Solent Marine Heritage Assets project and other complementary research have helped make this project possible. These include: Hampshire County Council, the Isle of Wight Council, Southampton City Council, English Heritage, Defra's Aggregates Levy Sustainability Fund, the Crown Estate, the Heritage Lottery Fund, the Gosling Foundation, Herapath Shenton Trust, Daisie Rich Charitable Trust, Aiken Foundation, D'Oyley Carte Trust, Roger Brookes Charitable Trust, John Coates Charitiable Trust and the Charlotte-Bonham Carter Charitable Trust. Additionally we would like to acknowledge the help and support of the wide range of organisations and individuals without whose help the HWTMA would not be able to achieve the results it has obtained.

The assistance provided by Mark Dunkley (now English Heritage Heritage Protection Team) and Alison Hamer of the English Heritage Maritime Team is gratefully acknowledged.

The HWTMA would also like to thank John Bingeman, Arthur Mack and Dan Pascoe for their invaluable assistance during this survey.

This report has been written by Victoria Millership and Brandon Mason, with Quality Assurance by Julie Satchell. The project has been managed by Julie Satchell.

ii. COPYRIGHT STATEMENT

iii. SUMMARY

The Solent has long been recognised for the importance of its marine heritage. The diversity and density of sites makes it one of the highest potential marine areas of England. As a result, the Solent Marine Heritage Assets project has provided funding to enable the Hampshire & Wight Trust

for Maritime Archaeology (HWTMA) to work together with English Heritage (EH) to target work on marine heritage assets to enable more effective regional management and also provide a possible model for cost-effective support for developing national structures.

This report particularly focuses on the site monitoring which was undertaken on the HMS *Invincible* protected wreck on 27th October 2009, in accordance with a Brief drafted by EH and agreed by the HWTMA. The site is located at a 100m radius from the point 50° 44.34' North, 01° 02.23' West (WGS84). The site is the wreck of the HMS *Invincible*, a 74 gun, third rate warship lost in 1758.

The survey methods used during the assessment of the HMS *Invincible* site were diver survey encompassing site photography and video. Taped measurements of observed archaeological features were recorded. Diving operations on site were undertaken on 27th October 2009.

The diver survey revealed that the HMS *Invincible* protected wreck site is relatively stable in terms of the structural remains extant on the seabed. These are subject to the degrading processes of seabed erosion and biological decay but there is limited alteration from season to season. Other objects recorded on the seabed are at higher risk, with vulnerable elements of cable/cordage observed deteriorating as they are revealed by seabed erosion. Smaller items such as the tankard/jug observed in the 2009 survey are at risk of removal through swell or tide. This leads to the conclusion that the risk can be assessed as **MEDIUM**. The installation of monitoring points may aid in the assessment of how fast seabed erosion is occurring, and regular monitoring of this site through diver survey would aid in allowing artefacts to be recorded as they are revealed by erosive processes. Further monitoring work will be undertaken in 2010 to help establish the stability of the site. The HWTMA may be able to combine this work with other planned fieldwork in 2010, through the Interreg IVA 'Archaeological Atlas of the 2 Seas' project.

1. PROJECT BACKGROUND

1.1 Introduction

The Solent has long been recognised for the importance of its marine heritage. The diversity and density of sites makes it one of the highest potential marine areas of England. The HWTMA are well placed to respond on a regional basis to sites and finds which require investigation and monitoring whether these are underwater or are in the intertidal zone. The Solent Marine Heritage Assets project has provided funding to enable the HWTMA to work together with EH to target work on marine heritage assets to enable more effective regional management and also provide a possible model for cost-effective support for developing national structures.

This report particularly focuses on the monitoring that was undertaken on the HMS *Invincible* protected wreck site on 27th October 2009, in accordance with a Brief for Archaeological Services provided by EH.

1.2 Site Location

The subject of this report is the HMS *Invincible* protected wreck site. The site is located at a 100m radius from the point 50° 44.34' North, 01° 02.23' West (WGS84). The site is the wreck of the HMS *Invincible*, a 74 gun, third rate warship lost in 1758.

1.3 Solent Heritage Assets Protect: Aims & Objectives

The overall aim of the Solent Marine Heritage Assets project is for HWTMA and EH to work together to target work on marine heritage assets.

The project allows for the flexible targeting of site investigation, monitoring and reporting. It is supporting:

- Work on Solent Designated Historic Wreck Sites;
- Investigation and monitoring on non-designated wreck sites; and
- Investigation and monitoring of non-wreck sites.

The objectives comprise:

- To undertake investigation and monitoring of marine heritage assets to address specific management and/ or protection issues
- To involve students and volunteer divers in the investigation of marine heritage assets;
- To report on condition of a range of marine heritage assets to relevant regional and national curators and advisory bodies;
- To provide locally based, reactive, ability to investigate submerged heritage assets in fulfilment of aims and priorities of both the HWTMA and EH; and
- To assess the effectiveness of the project as a model for the support of locally based investigation, monitoring and reporting for marine heritage assets.

1.3.1 The HMS Invincible *Objectives*

The overall objective was to reach recording Level 2a as defined by EH.

Level	Character	Scope
2a	Non-intrusive	A limited record based on investigations that might include light cleaning, probing and spot sampling, but without bulk removal of plant growth, soil, debris etc.

The specific tasks were to:

- Undertake survey of the site, identifying and recording in detail any vulnerable elements of the structure, with particular emphasis on the conditions of the sandbags and any exposed material.
- Produce a structured record of field observations. Key elements are to be subject to detailed examination and recording (position by diver survey, taped measurements, photographs and video and written database entries).
- Undertake a Risk Assessment with reference to English Heritage's *Risk Management Handbook* (November 2008).

2. THE HMS *INVINCIBLE* SITE

The Invincible archive has been subject to a large digital archiving project that has been undertaken in 2008 and 2009 with support from the Heritage Lottery Fund. This section has drawn heavily on text produced for that project, the results of which are summarised in the final report submitted to the HLF, '*Archiving the Historic Shipwreck Site of HMS Invincible: ensuring long-term public access to the archaeological archive of a nationally important heritage asset* – Final Report' (HWTMA, 2010).

2.1 Site History and Significance

Invincible was to herald a revolutionary advancement in the design and development of the 18th century warship (Figure 1). Built by the French at Rochefort in 1741 and launched in 1744, *L'Invincible* was one three new vessels that emerged from a school of naval architecture, employing a scientific, as opposed to a commonly conservative, basis for their design. At a time when colonial expansion was at the fore, the ability to protect convoys travelling to far flung interests with fast and manoeuvrable all-purpose naval warships gave the French a sudden tactical advantage.

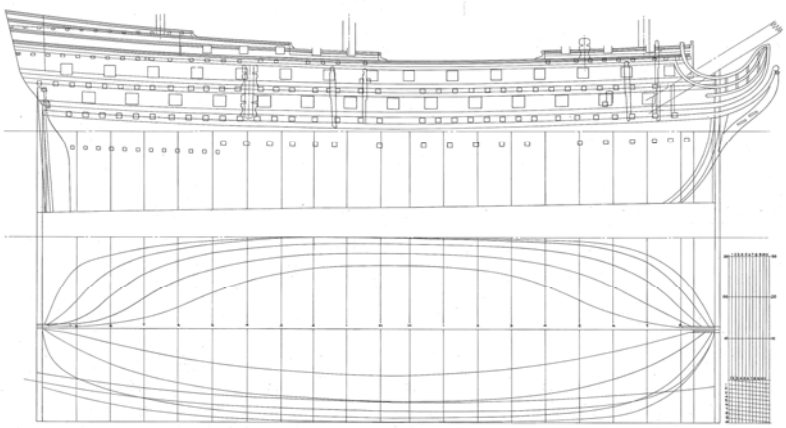

Figure 1 – Invincible lines, with permission of the Invincible (1758) Committee

With 74 guns arrayed over two decks, and a weight of shot that could outmatch all but the largest though more lumbering three-deckers, this great new potential was not lost on the British who first encountered *L'Invincible* off Cuba in 1745. Here the French warship was able to fend off three British attackers of similar size though of an entirely inferior class.

Bad weather kept *L'Invincible* from escorting other similar convoys until early 1747 when a French fleet embarked for the East Indies. This time the British, under the command of Vice-Admiral Anson, were well prepared and intercepted the French convoy off Cape Finisterre, north-west Spain. As the convoy fled*, L'Invincible* held the rear-guard and was engaged by every British warship in turn as they hauled down the escaping merchantmen (Figure 2). Despite this, *L'Invincible* was the last of the French vessels to strike its colours, doing so as Anson finally brought the guns to bear in his flagship, the second-rate *Prince George*.

Figure 2 - L'Invincible *holds the rear-guard. Painting by John R. Terry, with permission of the Invincible (1758) Committee*

Using his influence with the Admiralty, Anson was able to keep *Invincible* in service in the British fleet, despite more than £26,000 being awarded in prize money. This was roughly twice the cost of building a contemporary third rate warship according to the 1741 Establishments, and is a reflection of the fact that, in Anson's view, the cost to the British Navy of losing such a radical design template would be immeasurable (Lavery 1988).

Experimentation would be the watch-word for this ship, not only in the fundamental design, but also in the technologies invested it. These included iron knees and some of the earliest use of copper sheathing yet known (at least three years earlier than that described in official sources), as well as lesser firsts; the first iron hearth to ever replace the centuries old brick built galley; rudder position indicators; flint lock firing mechanisms fitted to the great guns (Lavery 1988). Many of these were being tested years or even decades before becoming standard issue in the Royal Navy.

Though serving as flagship to three Admirals, HMS *Invincible* saw little direct action. The sailing qualities of the ship were widely celebrated and were put to the test most extremely during the first British attempt at taking the French fort of Louisbourg in Nova Scotia. When the fleet was all but scattered by a fierce hurricane, *Invincible* rode out the violent seas and was able to limp back to Portsmouth under jury rig.

Following several refits and upgrades the ship and the entire fleet were reassembled for a second attempt in February 1758 off Portsmouth. However, a series of calamitous events led to the ship running aground on the Dean Sand (now known as Horsetail). In worsening weather the crew battled for three days to save the ship in atrocious conditions. After forty men took one of the cutters and made for Portsmouth, the order was finally given to abandon ship and *Invincible* soon rolled over on its beam ends, swamped by breaking seas. No lives were lost and the ensuing Courts Martial absolved all those involved of blame, citing the dramatic development of the Dean Sand as the primary cause.

Over the next seven months the ship was heavily salvaged, with all of the guns being recovered as well as the remaining masts and spars. However the bow section that was worked deeply into the sand bank has been shown to contain an abundance of artefactual material, representing stores and equipment that it was probably impossible to reach at the time. It is likely that within months of the wrecking, the ship had been worked deeper into the sand bank and was soon forgotten entirely.

Invincible's legacy lay in its influence on the design of British warships over the following decades. Sir Thomas Slade, designer of Nelson's *Victory*, developed the Dublin class based on the lines of *Invincible* that became the model for multi-purpose warships in the late 18th and early 19th centuries. At the time of the Battle of Trafalgar, 1805, there were more than 80 such third-rate 74 gun warships in the British fleet, and more than half the ships present at the famous battle were of this type. This success of the 74-gun warship that was derived from the lines of HMS *Invincible* would give rise to the fitting epithet, 'Backbone of the Navy' (Bingeman 1985).

2.2 Site Environment

The wreck is on Horse Tail Sand, a relatively flat featureless sand bank composed of fine to medium sand with a limited silt component. There is free running seawater, so the sand is mobile and the site is subject to regular fluctuations in seabed level. The depth of the site is generally 6-10m. The site is susceptible to seaweed cover. In 1991 a sewage outfall was constructed 370m from the site which brought excavation work to a halt.

The wreck lies on the port side at an angle of 45 degrees, bow to the north-west and stern to the south-east. The vessel's back is apparently broken at the 64/65th frame and the hull is hogged with up to 4m depth of sediment at the bow and stern and only around 1m amidships (Bingeman 2001). The starboard structure is largely detached and lost, though significant coherent sections are probably distributed to the north-east. In 1997 a tanker, MV *Amer*

Ved, ran aground on the site and caused extensive damage to the stern, including the loss of the stern post of which up to 2m was vertically exposed (Quinn et. al 1998). Currently all exposed structure now lies less than 1m above the seabed.

2.3 Site Ownership

The site is designated under the Protection of Wreck Act 1973 (Site number 22) and as such requires special permission from the Department for Culture, Media and Sport in order for any work to take place on the site. The site is not subject to other designation orders, conservation areas or other protected status.

The wreck is owned by the Ministry of Defence. During the excavation work that took place from 1979 to 1991, the MoD waived any claim to ownership of the artefacts recovered in lieu of paying salvage (J. Bingeman 2010, pers. omm. 30th March).

2.4 Licensing History

The wreck site became designated under the Protection of Wrecks Act 1973 on September 30th, 1980. At this point, it was still unidentified and designation was based on the degree of preservation and the range of artefacts and structural material extant.

Licenses were have been granted annually to Cmdr. John Bingeman, working under the auspices of the Invincible (1758) Committee from 1980 onwards. From 1980 to 1990 these were excavation licences, and since then only survey licenses have been granted up to and including the most recent 2010 licence.

2.5 Summary of Archaeological Investigations

The wreck was discovered in 1979 by Arthur Mack, a Portsmouth fisherman, who trawled up a large treenailed frame which he realised to be of great antiquity. He returned to the site with two divers, John Broomhead and Jim Boyle, who described a site consisting of partially exposed yet coherent structure and associated artefacts strewn across an area over 60m in length (Bingeman 1985). Realising the archaeological sensitivity of the site, they enlisted Commander John Bingeman, who was experienced in working underwater for archaeological investigations on several sites, including the Needles wreck sites HMS *Assurance* and *Pomone*.

Prior to identifying the site, the team's early objective was to invest the wreck with statutory protection, and with the advice and support of Dr. Margaret Rule the site was designated in September 1980. During this year a pre-disturbance survey was conducted and later an exploratory trench 2m wide and 2m deep was dug from east to west across an area that was later identified as the bow.

Work continued on this bow area the following year and in 1984, with a hiatus during the Falklands conflict. In 1985 a trench directly abaft of midships on the port side timbers focussed on a complete gun port. From 1986 until 1990 a

systematic excavation of grid squares was excavated, beginning just aft of the bow back to the stern by the end of 1989 and then over an area that would probably have corresponded to the starboard quarter in 1990 (Figure 3).

Figure 3 – Site plan derived from interactive online site viewer (www.hwtma.org.uk)

During this time more than 3,000 individual artefacts were recovered and were treated in the team's own conservation lab in Portsmouth. Based on the date of artefacts initially recovered, including hour glasses and a leather cartridge case with the crest of George II, *Invincible* was a strong candidate for this wreck. Some reports suggested that *Invincible* was lost off the Owers, and that the mid-weight guns were not 24pdrs, as suggested by tampions and rammer heads found on the site, but rather 18pdrs. However, John Bingeman discovered a letter from the Office of Ordnance dated 23rd December, 1755, in the Priddy's Hard archive showed that the 18pdrs were replaced by the 24pdrs, and the court martial transcript located the place of loss to the Horse and Dean Sands. Finally, a wooden tally stick was discovered with the words "INVINCIBLE Flying Jib 26 x 26 No.6" which all but confirmed the identity of the wreck (Bingeman, 2001).

In 1988 the project team held a private sale of artefacts recovered from the wreck site at Christies auction house in order to raise funds to continue work. A representative collection of around 600 individual artefacts is held at Chatham Historic Dockyard.

3. MONITORING METHODOLOGY

3.1 Diving

The HWTMA is registered as a diving contactor with the Health and Safety Executive (HSE). Diving involving HWTMA staff was undertaken under the HSE Scientific and Archaeological Approved Code of Practice.

Prior to diving a Project Plan was developed which included detailed information on:

- Diving team composition
- Boat (including safety features and facilities, numbers allowed on board, etc.)

- Tides (times and strengths)
- Site Risk Assessment (this is a general assessment of potential risk, it is augmented by a daily risk assessment completed on site)
- Provisional daily operations plan
- Procedures for use of any archaeological survey equipment
- Daily supervisor check list

3.2 Survey

The survey methods used during the assessment of the HMS *Invincible* site were diver survey encompassing tape measurements and site photography. One day of diving was undertaken on the site.

Recording was based on the MoLAS recording system, on which the HWTMA recording sheets have been based. The main adaptation of the MoLAS system for work in the underwater zone is the addition of a 'Dive Log Sheet' and an 'Archaeological Record Sheet', the former are used as the primary numbering system and are used for logging individual divers. Each diver fills in an Archaeological Record Sheet which provides details of specific work undertaken on each dive and references any numbers utilised e.g. context numbers, feature numbers and artefact numbers.

In summary the principal record sheet system includes:

- Dive Log Sheet
- Archaeological Record Sheet
- Context Log and Record Sheets
- Drawing Index
- Finds Index and Record Sheets
- Sample Index and Record Sheets
- Timber Index and Record Sheets
- Photo Index
- Video Index and Log Sheets

4. SURVEY RESULTS

The survey of the site enabled the identification and recording of structural elements with particular emphasis on the condition of exposed material. This allowed a more comprehensive assessment of the site in terms of its vulnerability and risk (see **Section 5.2**).

4.1 Diving Conditions

The dive on the HMS *Invincible* protected wreck site took place on Tuesday 27th October 2009 from the dive boat *Wight Spirit*. The tasks were undertaken in the window of slack or near slack water. The site was subject to a diver survey to monitor the site for any significant recent change including the recording of any vulnerable elements of the structure subject to possible degradation. Taped measurements of observed archaeological features were recorded. The visibility was around two metres allowing a photographic record to be made of the site.

Prior to the HWTMA diving operation, the licensee John Bingeman dived on the site with Arthur Mack to lay a baseline in preparation of the diver survey. The baseline was laid from the upstanding iron knee at the stern of the wreck (Location 1 on the site plan in Appendix I), along the exposed frames of the wreck, to the two horizontal iron knees towards the north east end of the site (Location 2).

Two waves of divers were deployed in the HWTMA diving operation with the dives conducted to a maximum depth of 7.5 metres with a total of 338 minutes bottom time (see Appendix II for dive logs). The first wave of divers consisted of Brandon Mason and Dan Pascoe who conducted a preliminary site inspection and laid two tape measures across the site. The first of these ran along the baseline for 24.1 metres between the iron knee at the stern and the two towards the north east end of the site, and the second ran to the south of the stern where further substantial features were observed. The second wave of divers consisted of Garry Momber, Victoria Millership and Alison Hamer, who completed the site inspection and photographed the observed features.

4.2 Archaeological Features

The cultural remains at the HMS *Invincible* site consist of both larger, structural remains and smaller objects. Artefacts not previously observed have been located in relation to previously recorded and positioned objects, and identified in relation to these on the site plan (see Appendix I). The survey also identified points that could potentially be used for future monitoring, with photos that could act as baseline data taken of features at known positions.

To the south east of the main wreck site, outboard of the stern, there appears to be more structure than has previously been recorded. The tape measure ran to the south east of the iron knee at the stern (Location 1) for 4 metres, and then around an iron concretion (Location 3) before continuing for another 8 metres to the south where elements of timber structure were observed. The measurement at the end of the tape was 12 metres (Location 4). The direct distance between the iron knee at the stern at Location 1, at the start of the tape measure, and the timber at 12 metre mark (Figure 4, Location 4) was 8 metres. The timber was heavily covered in weed, as visible in Figure 4.

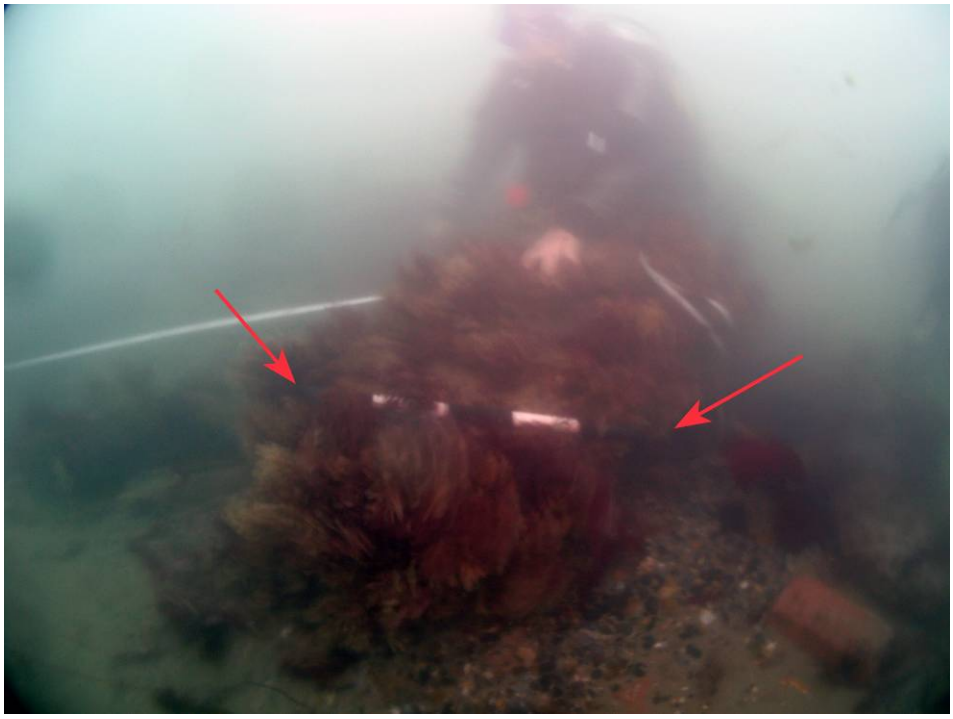

Figure 4 – Timber to south east of main wreck site (Location 4) (copyright HWTMA)

The timber appeared to be structural and was next to a concretion (Figure 5).

Figure 5 – Concretion adjacent to timber south east of main wreck site (Location 4) (copyright HWTMA)

Close by lay an iron pipe concreted to the seabed, a possible future monitoring point for sand levels (Figure 6). Reels of cable/cordage were identified to the south of the concretion.

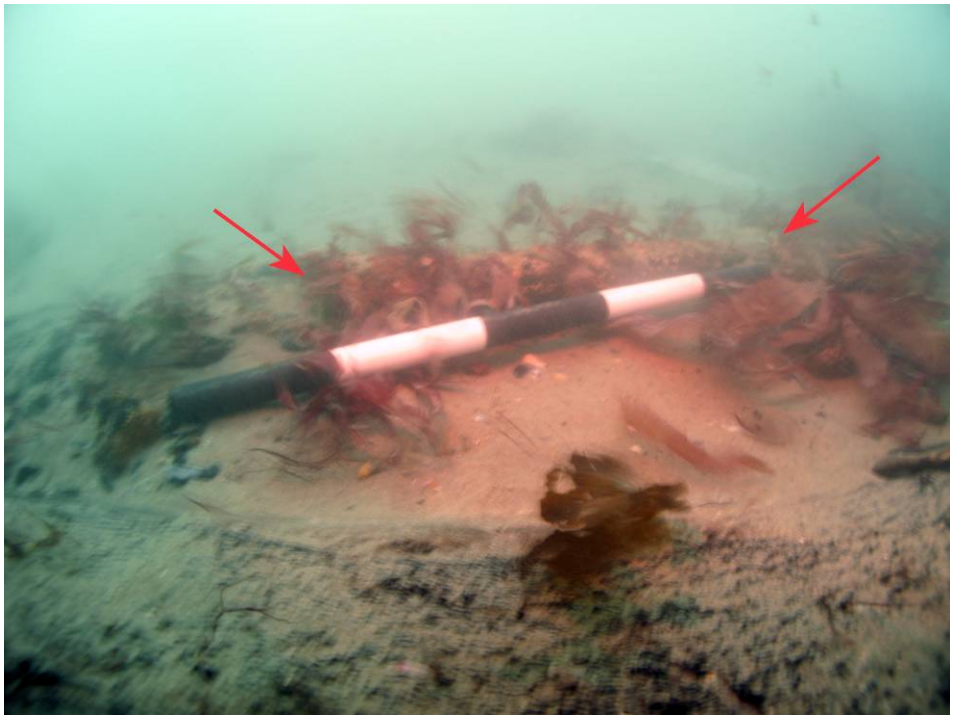

Figure 6 – Iron pipe concreted to the seabed (copyright HWTMA)

The first wave of divers recorded additional observations of copper sheathing, planking, and possible further remains of cable that were not identified or photographed in the second wave. These objects were located just to the north of the structural timber in Figure 4. The planking was directly to the north of the structural timber (Location 5) and was possibly inner or partition planking that appeared recently exposed as there were no noticeable gribble marks. The remains of cable were to the north of the planking (Location 6) and were circa 0.2 metres in diameter. The copper sheathing was to the north of the cable (Location 7) and appeared newly exposed. This was possibly formed around a solid object that was mostly buried, as the sheathing appeared to continue around a right angle.

Directly to the north of the iron knee at the stern (Location 8) were three upstanding frames (Figure 7). Visible on the inside of one of the frames was an eroding iron bracket (Figure 8).

Figure 7 – One of three upstanding frames at stern of wreck (Location 8) (copyright HWTMA)

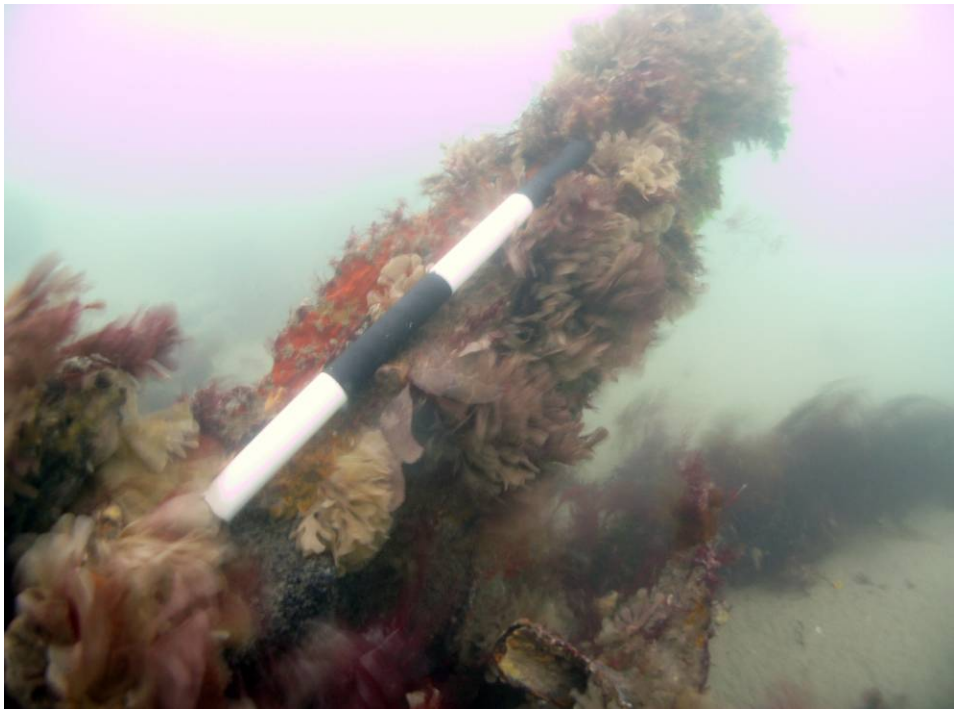

Figure 8 – Eroding iron bracket on upstanding frame (copyright HWTMA)

Moving directly south from the iron knee at Location 1, cordage/cable was identified protruding from the sand 4 metres to the south of the shot line at Location 1 (Figures 9 & 10, Location 9).

Figure 9 – Cordage/cable protruding from the sand (Location 9)
(copyright HWTMA)

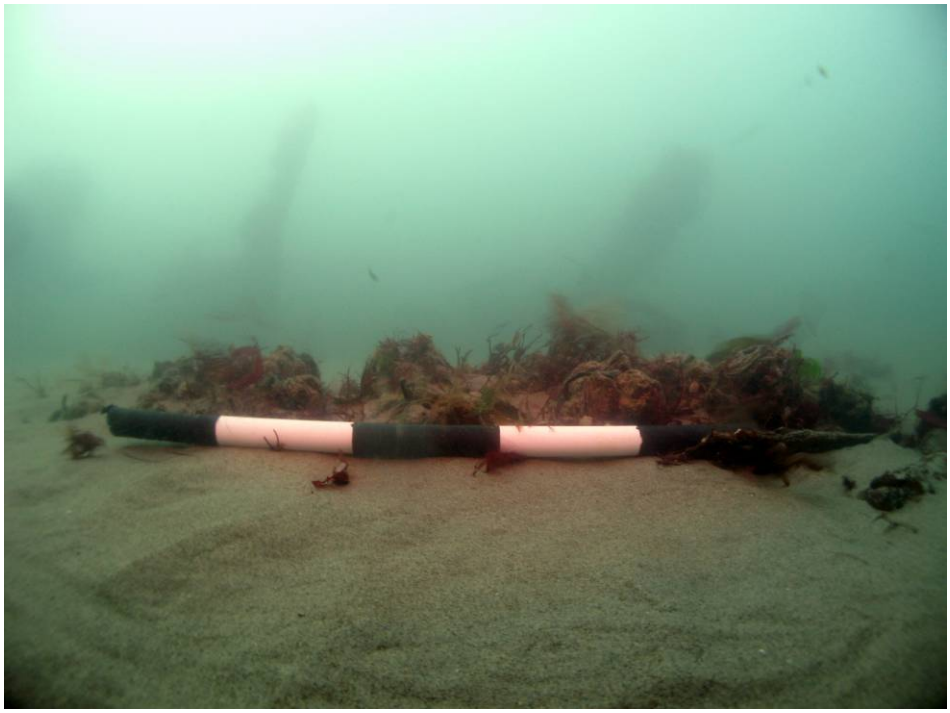

Figure 10 – Cordage/cable protruding from the sand, upstanding frames at stern in background (Location 9)
(copyright HWTMA)

The baseline and associated tape measure ran the length of the wreck with exposed frames and planking visible along the entire distance. At the end of the baseline, 24.1 metres along the tape measure, lay the horizontal knees and associated timbers (Figure 11, Location 2).

Figure 11 – Horizontal knees situated at the end of the baseline (Location 2) (copyright HWTMA)

Immediately to the east at 23 metres along the baseline were planks with endings that had been subject to gribble attack (Figure 12, Location 10).

Figure 12 – Plank endings subject to gribble attack (Location 10) (copyright HWTMA)

Whilst returning along the baseline towards the iron knee at the stern a tankard/jug was observed at 20.6 metres along the baseline (Location 11).

This was located in the sand immediately below the planking to the north east of the baseline (Figure 13).

Figure 13 – Exposed tankard/jug (Location 11)
(copyright HWTMA)

At 12 metres along the baseline a flanged lead pipe was identified. This could possibly make a good monitoring point for future dives (Figure 14, Location 12).

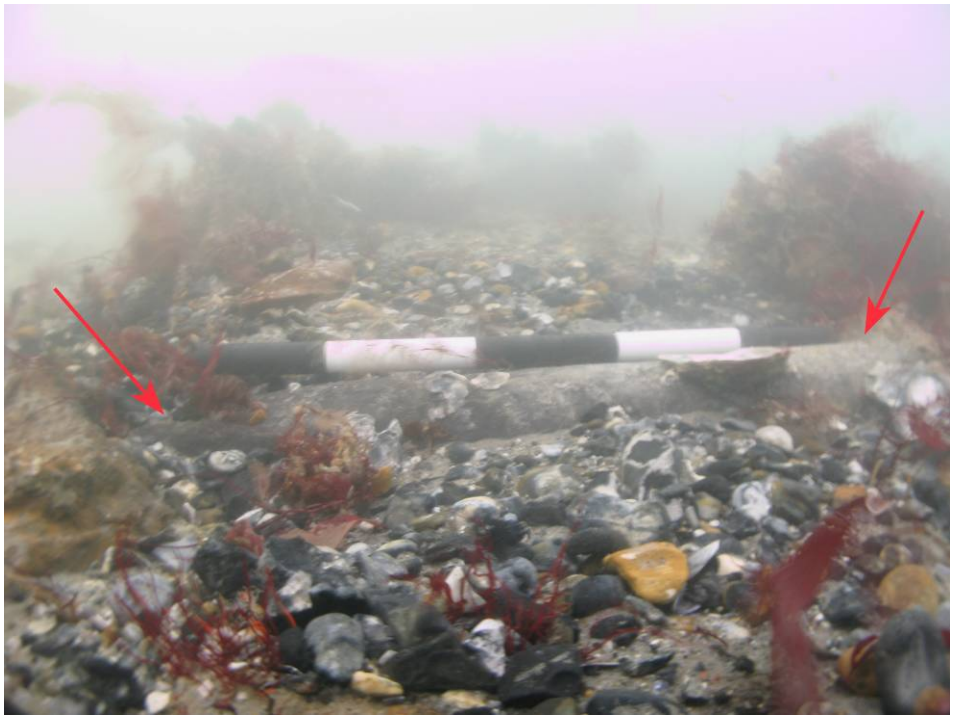

Figure 14 – Flanged lead pipe (Location 12)
(copyright HWTMA)

5. CONCLUSIONS

The main aims of the survey of the HMS *Invincible* protected wreck site in 2009 were to undertake a survey of the site to Level 2a. This was to identify and record in detail any vulnerable elements of the structure, with particular emphasis on the conditions of any exposed material; and to undertake a Risk Assessment with reference to English Heritage's *Protected Wreck Sites at Risk: A Risk Management Handbook* (2008).

5.1 Survey Assessment

The diver survey revealed that the HMS *Invincible* protected wreck site is relatively stable in terms of the structural remains extant on the seabed. These are subject to the degrading processes of seabed erosion and biological decay but there is limited alteration from season to season. Other objects recorded on the seabed are at higher risk, with vulnerable elements of cable/cordage observed deteriorating as they are revealed by seabed erosion. Smaller items such as the tankard/jug observed in the 2009 survey are at risk of removal through swell or tide.

Consideration must be given to the need to recover exposed artefacts at risk of loss. The gradual degradation of the seabed archive over time is resulting in the loss of information from this nationally important historic asset. Surface recovery provides for the positional recording of individual artefacts, which gives a broad understanding of their location within the ship. Although it should be noted that this course of action does not usually enable the full context of an artefact in relation to structural elements, contexts and deposits to be gained, as it would be during an excavation. All possible options should be explored for the organisation and funding of the recovery, documentation, conservation and archive deposition of vulnerable artefacts to ensure they are not lost.

The installation of monitoring points may aid in the assessment of how fast seabed erosion is occurring and help to determine potential future requirements for surface recovery of artefacts at risk. Regular monitoring of this site through diver survey will aid in allowing artefacts to be recorded as they are revealed by erosive processes.

5.2 Historic Wreck Site Risk Assessment

Wreck/Site Name	***SI Number***
HMS *Invincible*	21980/1307

NMR / UKHO No.	***EH Region***	***Restricted Area***	***Principal Land Use***
	South East	100 meters	Coastland 1

Latitude (WGS84)	50° 44.34' N
Longitude	01° 02.23' W

Class Listing	***Period***	***Status***
Third Rate Ship of the Line	Hanover	Protection of Wrecks Act 1973

Licensee	***Nominated Archaeologist***	***Principal Ownership Category***
John Bingeman	Dr Margaret Rule	other
Seabed Owner		***Navigational Administrative Responsibility***
Crown Estate		nil
Environmental Designations		
none		
Seabed Sediment		***Energy***
silty sand		high

Survival
medium

Overall Condition	***Condition Trend***	***Principal Vulnerability***
generally satisfactory but with minor localised problems	declining	biological decay / seabed erosion

Amenity Value: visibility
limited above bed structural remains and finds scatter with limited visibility and only 'legible' with further interpretative information

Amenity Value: physical accessibility	***Amenity Value: intellectual accessibility***
restricted: access subject to licence or other authorization	limited interpretation on or close to site with only one element

Management Action	no action required (routine monitoring by the licensee / archaeological contractor)													
Management Prescription	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**
			✓									✓		
Notes	The site lies at a depth of 6-8 metres in an area of flat, sandy seabed. The majority of the structural remains are in an area approximately 50 metres long but objects were also recorded in the course of this survey to the south of the recorded wreck site. Smaller artefact items were also observed, made visible by ongoing seabed erosion. The wooden structure is subject to ongoing physical erosion. The site is relatively stable but the installation of monitoring points may help with an assessment of the speed of erosion taking place on site. The smaller artefact items observed in the 2009 survey are at higher risk, with the cable/cordage degrading as it was exposed and the other items in danger of removal from the site through seabed erosion and the action of swell and tide. Consideration must be given to the need to recover exposed artefacts which may otherwise be lost. This leads to the conclusion that the risk can be assessed as **MEDIUM**.													

Data Source		***Date & Initials***	
Date of previous assessment:		Has an ecological survey been undertaken? Y / N	

5.3 Potential for Further Work

HWTMA recognises the need to continue to monitor the site as the level of risk can be subject to change. Physical erosion is possible due to the location of vulnerable wooden remains on the surface of the seabed. The installation of monitoring points may help with an assessment of the speed of erosion taking place. Further monitoring work should be undertaken in 2010 to help establish the stability of the site.

The HWTMA may be able to combine this monitoring work with other planned fieldwork in 2010, through the Interreg IVA 'Archaeological Atlas of the 2 Seas' project.

The situation in relation to exposed artefacts at risk of loss requires further consideration. There is currently only a survey licence for the site, so any potential recovery work would require an additional level of licensing.

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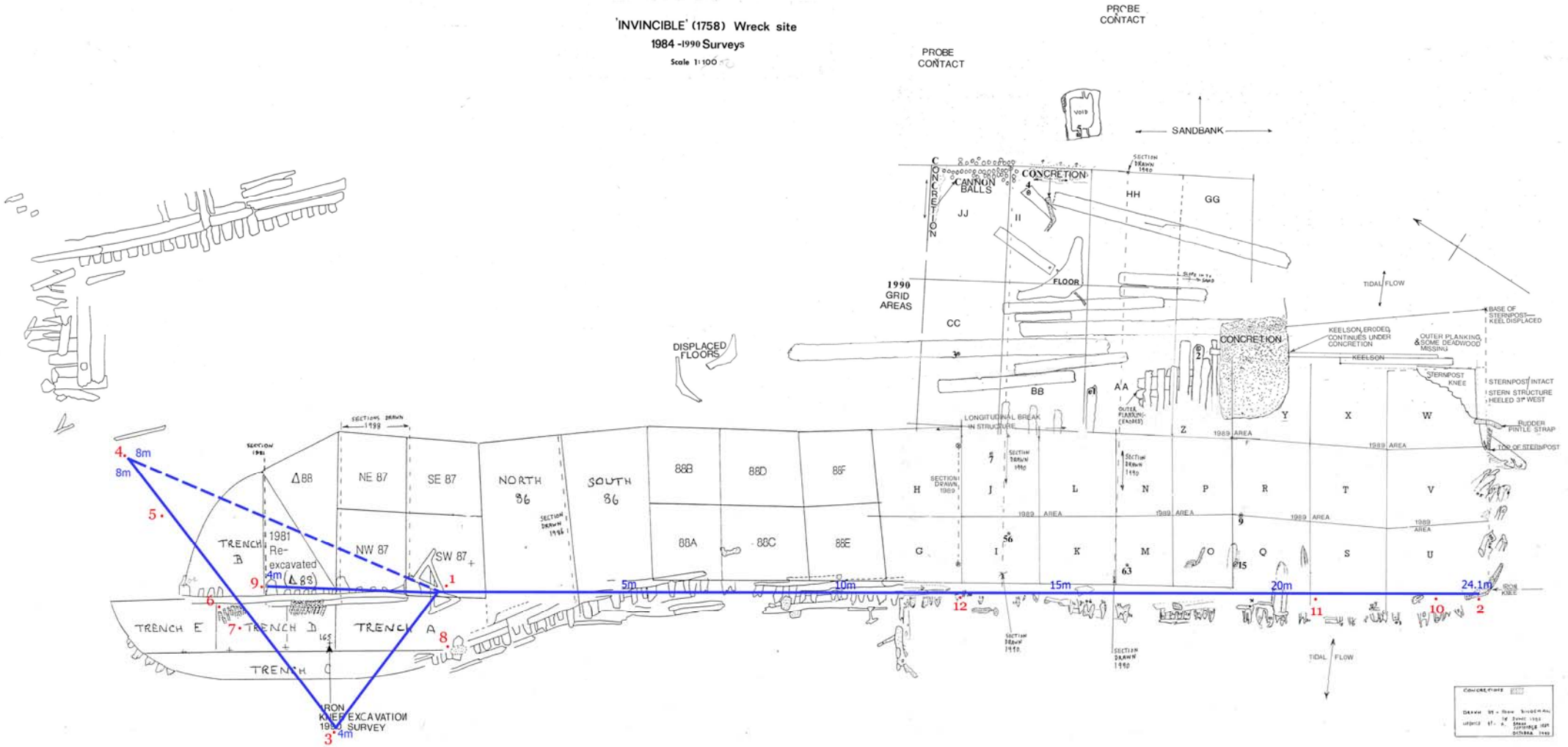
APPENDIX I – SITE PLAN



APPENDIX II – DIVE LOGS

Location	Vessel	Supervisor
HMS *Invincible* protected wreck site	*Wight Spirit*	Vir Dellino-Musgrave

Log No.	Date	Diver Name	Duration (mins.)	Current	Visibilty
01	27/10/2009	Brandon Mason	64	surge only	2 metres
02	27/10/2009	Dan Pascoe	64	surge only	2 metres
03	27/10/2009	Victoria Millership	70	surge only	2 metres
04	27/10/2009	Alison Hamer	70	surge only	2 metres
05	27/10/2009	Garry Momber	70	surge only	2 metres