

HMS *Victory*, a First-Rate Royal Navy Warship Lost in the English Channel, 1744. Preliminary Survey & Identification

Neil Cunningham Dobson

Odyssey Marine Exploration, Tampa, USA

Sean Kingsley

Wreck Watch Int., London, United Kingdom

In April 2008, Odyssey Marine Exploration recorded an interesting target in the western English Channel using a side-scan and magnetometer as part of its ongoing Atlas Shipwreck Survey Project. Subsequent visual investigation using the Remotely-Operated Vehicle Zeus, complemented in September and October by a pre-disturbance survey, identified a substantial concentration of wreckage covering an area of 61 x 22m, comprising disarticulated wooden planking, iron ballast, two anchors, a copper kettle, rigging, two probable gunner's wheels and, most diagnostically, 41 bronze cannon.

An examination of the site and its material culture in relation to a desk-based assessment leads to the conclusion that Odyssey has discovered the long-lost wreck of Admiral Sir John Balchin's first-rate Royal Navy warship, HMS *Victory*, lost in the Channel on 5 October, 1744. This preliminary report introduces the results of an archaeological field evaluation, which took the form of a non-disturbance survey and limited small-scale trial trenching, and cumulatively addresses this underlying identification. The prevailing historical orthodoxy that situates the wreck of *Victory* around Alderney and the Casquets is proven to be false.

© Odyssey Marine Exploration, 2009

1. Summary

During ongoing surveys in the western English Channel as part of Odyssey Marine Exploration's Atlas Shipwreck Survey Project, designed to map the archaeological landscape of this zone's international waters, a combined side-scan and magnetometer survey was conducted in April 2008 with a range of 150m. The resultant high-frequency image (410Khz) depicted a clearly disturbed sea bottom across an oval area of 40m, interspersed with linear objects (Fig. 1). The 35-gamma magnetometer profile was suggestive of a wooden wreck with features typifying iron anchors, cannon and ship structure (pers. comm. Ernie Tapanes, November 2008). The crest of a large sand wave was visible some 40m to the northwest.

From the research platform the *Odyssey Explorer*, the Remotely-Operated Vehicle (ROV) Zeus subsequently made 23 dives on Site 25C between May and October 2008, which verified the existence of a substantial newly discovered shipwreck:

A. May (two dives) – initial visual verification of the presence of a shipwreck; recovery of a brick fragment from near cannon C4 in order to arrest the wreck site in a US Federal court.

B. June (three dives) – non-disturbance survey, mea-

surement and photography of surface features (type and orientation).

C. September (five dives) – completion of non-disturbance survey of surface features (type and orientation) and non-disturbance photomosaic (2,821 still images taken at an elevation of 2.5m above the seabed).

D. October (13 dives) – limited trial-trenching in an attempt to confirm the identity of the wrecked vessel: exposure of an iron anchor to the northeast to verify the position of the bows; identification and excavation of the wooden rudder to the southwest; trial-trenches focused on the zone between the rudder and the southernmost cannon, C26, where diagnostic small finds belonging to the ship's officers were most likely to be preserved; clearance of sediments around bronze cannon C28 and C33, found to the north of the wreck concentration (beyond the nucleus covered by the photomosaic and pre-disturbance site plan) and their recovery.

Unlike any of the hundreds of other wrecks surveyed by Odyssey Marine Exploration (OME) across several oceans, Site 25C is characterized by a large number of bronze cannon. Several of the 41 examples feature royal arms indicative of the guns' nationality and date.

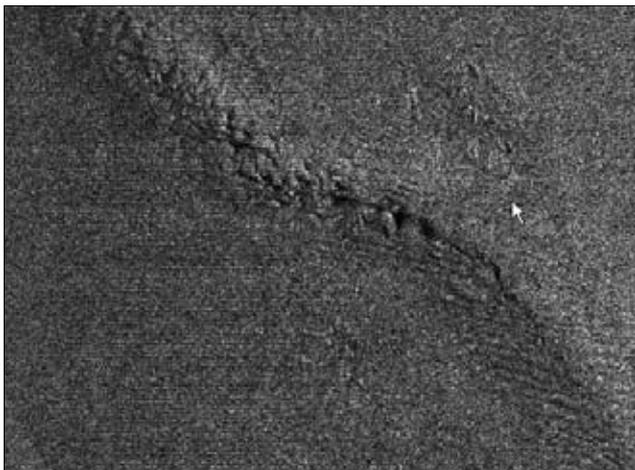


Fig. 1. Side-scan image of Site 25C, characterized by a 40m oval area of disturbed sea bottom interspersed with linear objects.

Despite both mid-18th century reports and modern theory placing the wreckage of the iconic first-rate Royal Navy warship HMS *Victory*, lost on 5 October 1744, off the Casquets near Alderney in the Channel Isles, the 2008 fieldwork leaves no doubt that Site 25C comprises the archaeological remains of this enigmatic loss. *Victory* was the largest warship in the Royal Navy and judged to be the most impressive man-of-war in the world at the time (Clowes, 1966: 108). Launched from Portsmouth dockyard in 1737, she was the flagship of two of the most accomplished and experienced seamen of the age, Sir John Norris, Admiral of the Fleet, and Sir John Balchin, Admiral of the White (Aldridge, 2000; Charnock, 1795b). She went down in a violent storm under the command of Admiral Balchin, aged 74, who was on his way home after successfully liberating a Royal Navy victualling convoy blockaded by the French fleet down the River Tagus (Clowes, 1966: 91; Richmond, 1920: 108).

In September and October 2008, the non-disturbance survey, followed by small-scale trial trenching, largely confined to the stern area of the shipwreck where the most diagnostic artifacts were anticipated to be preserved, produced a master photomosaic of the wreck (Fig. 2) and a pre-disturbance site plan (Fig. 3), photographed all *in situ* material culture and defined the level of site preservation and biological oasis effect in action. For identification purposes, two bronze cannon were recovered, C28 and C33 (Figs. 40-41). The dates, calibre, quantity and English origins of these guns and those on the seabed, cast under King George I (r. 1714-27) and King George II (r. 1727-60), provide robust evidence to recognize Site 25C conclusively as HMS *Victory*. This identification has been presented to the UK Ministry of Defence, the Royal Navy, the Department of Culture, Media and Sport, and communicated to English Heritage.

This shipwreck is of major historical and archaeological importance as the only first-rate English warship

ever discovered underwater and as the only documented Royal Navy wreck seemingly containing its full deployment of bronze cannon. The 42-pounder recovered by Odyssey, cannon C33 (Fig. 41) – the largest contemporary gun used in naval warfare – is the only recorded example in existence. The loss of HMS *Victory* was a tragic event that paved the way for the reorganization of shipbuilding philosophies within the Royal Navy in the subsequent two decades. Contrary to prevailing historical theory, the wreck's discovery in open seas, more than 50km west of the Casquets, immediately exonerates Sir John Balchin and his crew from the accusation of poor navigation on the fateful day of the warship's loss.

This report summarizes the preliminary observations of the archaeological field evaluation (pre-disturbance survey and small-scale trial trenches), which was designed to confirm the wreck's identity, to assess its site formation, current state of preservation and potential longevity, and historical and archaeological significance. The field evaluation ran in conjunction with desk-based documentary research into the vessel, its crew and cargo, including archival research testifying that a large cargo of specie for merchants, as well as a substantial sum of money captured by Balchin as prizes of war, was aboard HMS *Victory* when she went down (see Section 12 below).

The report examines the following themes:

- Marine Environment
- Wreck Destabilization
- Archaeological Features & Site Formation
- Bronze Cannon: Identification & Significance
- Ship Identity: Royal Navy Losses in the English Channel; Bronze Cannon with George I & George II Royal Arms; First-Rate Royal Navy Warship Losses
- Wreck Location: a Case of Mistaken Geography
- HMS *Victory*: Construction
- Naval Operations
- Admiral Sir John Norris
- Admiral Sir John Balchin
- Prizes and Bullion
- The Loss of HMS *Victory* – Poor Design or Ill Winds?

All research on-site and its interpretation remain at a preliminary stage.¹

2. Marine Environment

Site 25C lies in the Western English Channel in approximately 100m of water, around 100km west of the Casquets off the Channel Isles, beyond the territorial seas or contiguous zone of any country. The English Channel is a 520km-long funnel-shaped seaway aligned west-south-west to east-northeast. To the west it is 160km-wide and

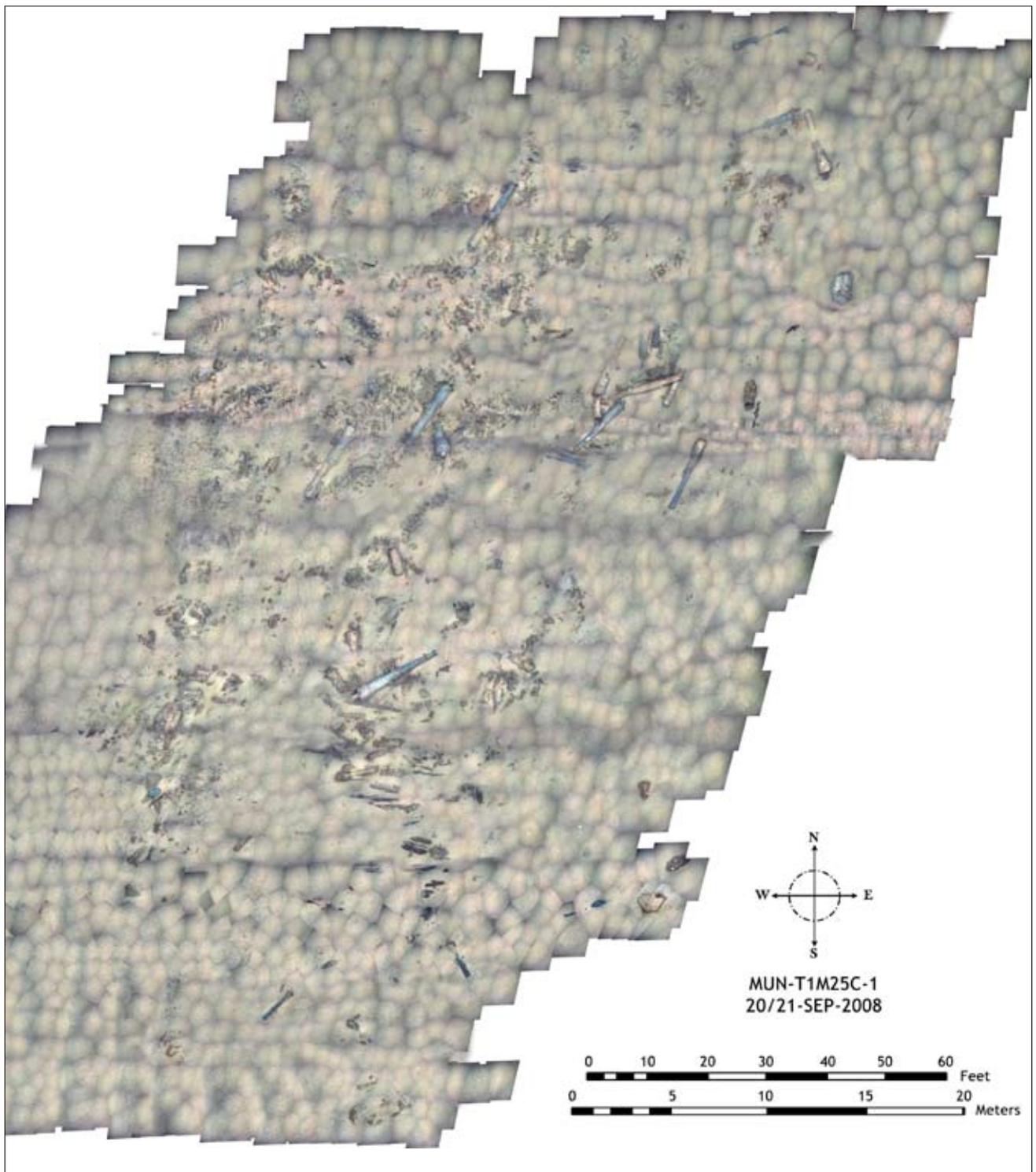


Fig. 2. Pre-disturbance photomosaic of Site 25C. The ship's bows lie to the northeast.

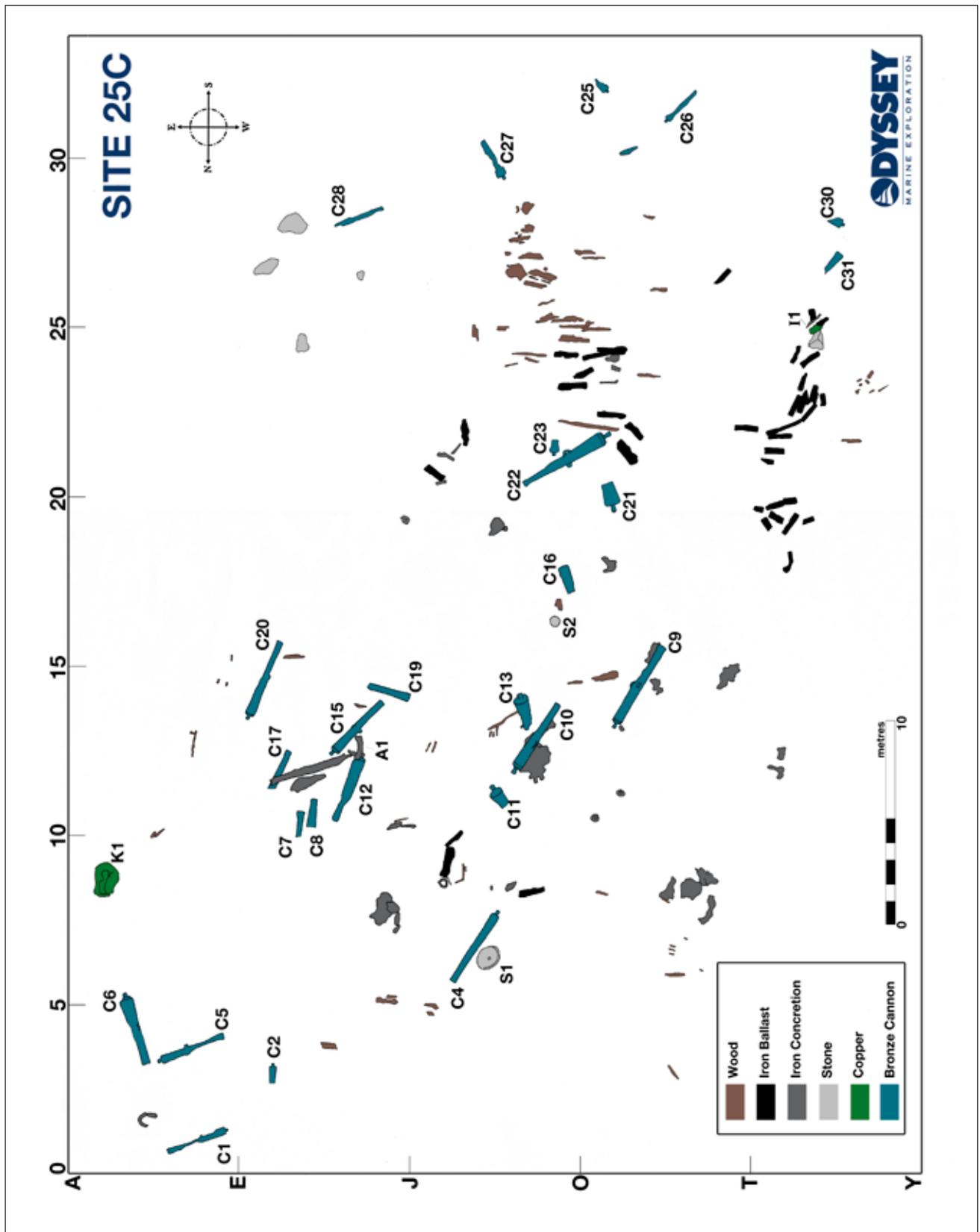


Fig. 3. Pre-disturbance plan of Site 25C.

opens into the North Atlantic Ocean; to the east it narrows to 30km wide at Dover Strait. The Channel floor is a smooth, shallow shelf that gently inclines from a water depth of 30m at Dover Strait towards the continental shelf with a gradient of 0.3-0.5% (Gibbard and Lautridou, 2003), reaching 120m at the Western Approaches. The Channel displays a maximum tidal range of 6-10m (Grochowski *et al.*, 1993: 683).

The Narrow Seas are subdivided into three geological zones: the Eastern English Channel, the Central and Western Channel, and the Western Approaches. In the Western Channel where Site 25C lies, the sea floor in the central segment and its extension to the southwest are covered by tide-transported sand waves oriented roughly northwest to southeast in a band up to 35km wide parallel to the shelfbreak and down to depths of 200m. Their crests are up to 5km long, 1km apart and 7m high (Evans, 1990: 81).

The sandy biolithoclastic layer contains gravely algal skeletal carbonates (0.5-2.5mm thick). The carbonate friction in the superficial sediments is composed of skeletal grains derived from littoral shelf faunas and algae, mainly pelecypods and bryozoans. The sand deposits thicken towards the Western Approaches, where they achieve depths of several tens of meters (Reynaud *et al.*, 2003: 364). The location of Site 25C north of the Hurd Deep (Gibbard and Lautridou, 2003: 196) is highly fortuitous due to the presence of sand overlying gravel in this zone. Just to the east, the seabed topography is dominated by pure gravel, which would not have favored the preservation of organic material. These sand waves, conspicuous even in the side-scan image of the seabed (Fig. 1), are highly dynamic and in a constant state of flux, making Site 25C susceptible to constant cycles of exposure, scouring and coverage.

The Eastern and Western Channel are separated by



Fig. 4. Encrusted iron anchor ring, A1, next to cannon C15 and C21 to the northeast of the wreck.

a bed-load parting characterized by very high tidal current velocities and by an almost total lack of sand cover over the boulder pavement. To the east, currents and sand transport are directed eastwards towards the Dover Strait; west of the parting, bed-load currents and transport run southwesterly. East and west are thus isolated, non-interactive sedimentological paths (Grochowski *et al.*, 1993: fig. 4; Reynaud *et al.*, 2003: 364). The possibility that gravel dredging in the east may have triggered the exposure of Site 25C in the west is thus not feasible.

3. Wreck Destabilization

Site 25C has been extensively disturbed by beam trawlers and modern pollutants, manifested in the presence of glass bottles, a lobster trap, fishing net, plastic (Fig. 31), cereal boxes, a videotape cassette and other modern contamination. Of major concern is the orientation of the cannon, some of which ought to reflect their original dispositions at right-angles to the line of the keel. Instead, 59% of the visible guns lie parallel to the postulated lon-



Fig. 5. Intact forged iron anchor, A2, at the northeast tip of the wreck site.



Fig. 6. Copper cylindrical cooking kettle, K1, from the northeast of the wreck. Note the heavy rivets.

gitudinal axis of the keel (Fig. 3). Given the enormous weight of the lower-deck 4-ton 42-pounders, and the extremely high probability that they reached the seabed in their original gun stations, this pattern seems to be the result of trawler cables and nets dragging the site.

Site 25C lies in an environmental zone that is notorious for trawler disturbance. Trawls equipped with chain mats and 'tickler' chains designed to fluidize the upper layers of sediments and drive flatfish from the seabed into

a net weighing about 8,000kg, towed at about 11km per hour, may impact the same area of seabed multiple times each year, destroying 5-65% of the resident fauna and mixing the top 6cm of sediment in a single pass (Duplisea *et al.*, 2001). This points towards a possible disturbance of 24cm of the upper strata of Site 25C annually, depending on natural sediment fluidity. Vessel dredges, for instance, exploiting the Fowey-Eddystone scallop fishing ground within a 20 x 8km area off southwest Cornwall use spring-loaded toothbars, each with nine teeth of 8cm length and 7cm spacing. Individual vessels are rigged with between eight and 30 dredges attached to two side beams (Dare *et al.*, 1994: 5).

The physical effects of trawling are equivalent to an extreme bioturbator. As well as destroying and scattering archaeological material, this has major implications for the preservation of concealed deposits abruptly infiltrated by oxygen flow. While departing Site 25C in September 2008, just such a trawler was observed running lines that were heading directly for the wreck site.

Although the impact of beam trawling on the marine ecology has been subjected to intensive research and quantification, resulting in the UK Marine and Fisheries Agency paying out £4.7 million in 2007 to break up and decommission fishing boats targeting the Western English Channel,² the direct impact on Europe's rich maritime archaeological heritage remains unacknowledged and uncontrolled. The clear evidence of the systematic destruction of shipwreck sites has been largely ignored and gone unpublished. In Odyssey's experience, verified by scientific documentation of numerous sites, wreck destruction is rife in the Channel. With its abundance of fish, octopi, crab and gorgonians, Site 25C is a rich biological oasis and thus a great attraction for fishermen, which will undoubtedly result in continued destruction of the shipwreck. To assume that wrecks are unaffected by documented cases of extreme disturbance to the marine ecology is an inaccurate and irresponsible heritage managerial position.

4. Archaeological Features & Site Formation

The visible surface features of Site 25C densely cover an extensive area of 61 x 22m, oriented along a northeast to southwest axis (Figs. 2-3). The seabed topography fluctuates with a maximum altitude of 7m. Some 41 bronze cannon, iron ballast blocks, cupreous artifacts and disarticulated, fragmented planking are interspersed amongst pockets of gravel, flint and small stones protruding from a heavily abraded shell-rich sedimentological matrix.

The wreck site is highly dynamic, covered by ever-shifting sand waves that constantly expose, scour and cover fresh areas of wreckage. Cannon protruding into



Fig. 7. Gunner's wheel S2 alongside a cannon ball and cannon C16.



Fig. 8. Gunner's wheel S1 and loose planking alongside bronze cannon C4.

the sediment at acute angles (Figs. 22-25) suggest that a minimum of 3m of overburden covers the seabed in places and likely conceals extensive wreckage. Visibility on the site varies between 10m and zero at certain stages of the tidal cycle. A current of 0.8 to 1.4 knots was observed running across the seabed.

Some 2,574m-square of Site 25C have been surveyed, revealing substantial archaeological deposits. The most highly conspicuous manifestations are the 41 bronze cannon, which include bores ranging between 4 and 7 inches in diameter, corresponding to 6- and 42-pounder guns. The latter were functionally restricted to the Royal Navy's largest warships, first-rates. Elaborate royal arms of King George I and George II, as well as the founder's dates of 1726 on the 42-pounder cannon C33 and 1734 on the 12-pounder C28, place the wreck site precisely within the timeframe of HMS *Victory's* construction and operation (see Sections 5 and 6B below).

Apart from the bronze guns, significant artifacts visible on the site's surface include:

1. One iron anchor ring and shank, A1 (grid G12; Fig. 4), and one complete iron anchor to the north-east, A2 (grid C2), signifying the position of the bows (Fig. 5).

2. A copper cooking kettle, K1 (grid B9; Fig. 6).
3. Two probable gunner's stone wheels, S1 and S2, for sharpening bayonets and grinding down shot impurities (grids L6 and N16; Figs. 7-8).
4. Wooden bowls/powder cask lids (grid V24; Fig. 9).
5. A concentration of rectangular iron ballast pigs (predominantly within grids T17-V25; Figs. 11-12).
6. Bronze rigging/pump pulleys, including what resembles a sprocket wheel (grid H10; Fig. 10) from a chain pump used to extract water from the bilge (Goodwin, 1987: 142, fig. 5.13) and a block at the southeastern end of cannon C6 (grid B5; Fig. 13).
7. A possible pewter plate (Fig. 14).
8. A possible sword, I1 (grid V25; Fig. 15).

Fragmented loose wooden planking is predominantly restricted to the south of the wreck (Figs. 3, 16), with the key exception of a probable knee contextualized with galley bricks in grid L9 (Fig. 17). In addition to the northeast-southwest distribution of the cannon, the shipwreck's axis is also suggested by the orientation of the southern planking extending east-west between grids O21-O29 and L25-Q25 (Fig. 3). Since no interconnected sections of hull planking are visible (except for the rudder), these may comprise ceiling or deck planking. Their perpendicular orientation in relation to the conjectured keel line supports the theory that the ship settled on a northeast-southwest axis.

The discovery of a bower anchor to the northeast of the site in grid C2 (Fig. 5), and the badly decomposed rudder some 9m south of cannon B26 (Fig. 19), verifies that the stern lies to the southwest. The rudder, lying on a compass heading of 135 degrees, is approximately 10m long and 1.8m wide, and is held together by seven iron pintle braces, which are the stipulated number for 70 to 110-gun Royal Navy warships (Goodwin, 1987: 131).³ What seems to be the lower end of the rudder is either protected by or repaired with a square casing of lead. The condition of the wood is extremely poor, with surfaces extensively eroded to the extent that the rudder resembles delaminated plywood. It is not possible to distinguish between the back, after, middle and main piece (Steffy, 1994: 298). The iron pintles are almost completely decomposed.

Human bones have been recorded on the surface of Site 25C. Clearance of the upper light layer of mobile sand around the edge of Cannon C10 for recovery exposed what appeared to be a rib bone and a skull 5-30cm below the surface. To the west between the base ring and the right-hand trunnion, and at the end of the muzzle, were further skeletal remains, including rib bones. Sediment removal was immediately stopped after this discovery and the area of the human remains recorded and



Fig. 9. Disarticulated hull planking and possible wooden gunpowder cask lids or wooden mess bowls.



Fig. 10. Bronze pulley, possibly from the ship's bilge pump system, with a hearth brick behind.

photographed. ROV Zeus then backfilled the context. Later monitoring by the ROV observed that the area remained covered and protected.

Possible human remains were identified on the site's surface at the cascable end of cannon C22 and the muzzle end of C39. Based on these discoveries, it seems likely that some of the gunners were caught at their stations below decks when the *Victory* was chaotically and swiftly wrecked, pinning the seamen beneath shifting cannon. These human remains will be the subject of a pending separate Odyssey report.

A. Anchor A2

Several artifacts and assemblages provide tentative evidence for the ship's form, date and nationality. A trial trench cut around an anchor crown at the northeastern tip of the wreck, just east of cannon C1 in grid C2, exposed a complete forged iron anchor, excluding its wooden stock (Fig. 5). Preliminary indications have provided approximate measurements: crown to ring length 6.90m; diameter of ring 0.91m; and fluke to fluke width 4.4m.

With arms arranged in a v-shaped configuration of about 60 degrees, anchor A2 does not typify French examples with curved arms, but conforms to the 18th-century Royal Navy design, where the relaxed arm angle created less strain on the arm-shank weld in the crown than the acute v-shaped form. HMS *Victory*'s anchors would have been manufactured at Deptford, where a master anchor smith, 12 foreman smiths and 88 hammermen monopolized production in the first half of the 18th century (Jobling, 1993: 92, 93, 95, fig. 10).

Established sizes and weights of Royal Navy anchors for 1745 verify that first-rate Royal Navy warships were equipped with five bower anchors (77 cwt, 19ft 2in), one stream (20 cwt, 13ft 4in) and one kedg (10 cwt, 10ft 4 in) (Curryer, 1999: 56; Lavery, 1987: 35). Site 25C's huge anchor is consistent with an example suitable for a first-rate. If subsequent fieldwork confirms its length of 22.63ft (6.90m), it will comfortably exceed the dimensions of a bower anchor recorded on the wreck of the *Association*, a 90-gun, second-rate Royal Navy warship wrecked off the Scilly Isles in 1707, which measured 18ft 4in (5.6m) in length (Morris, 1967: 49). The dimensions of Site 25C's anchor require re-measurement for confirmation, but currently seem to exceed the length of 21ft 2in (6.45m) for the sheet anchor on Nelson's *Victory*.

B. Copper Kettle

The copper cooking kettle, K1, located towards the north-eastern extremity of the wreck (grid B9) correlates with the position of the bows, although it has almost certainly been dragged out of context. Crushed and misshapen, it was originally cylindrical in shape and strongly riveted at the base and rim (Fig. 6). The lid is closed and pierced by a circular hole with a raised rim at its center. A handle points downward to one side.

This shape is typologically distinct from the wide, open cauldron used on the *Mary Rose* c. 1545 (Jones, 2003: pl. 3), but corresponds to the small examples listed on Royal Navy warships of 1750 in T.R. Blanckley's *A Naval Expositor* and which remained the cooking pot of choice into the 1780s. Examples used on first-rates were enclosed by a fire hearth composed of about 2,500 bricks



Fig. 11. Rectangular iron ballast ingots from the southwest of the site. The pierced metal sheet in the foreground may have been used to nail the ballast physically in situ within the hull.



Fig. 12. Rectangular iron ballast ingots from the southwest of the site.



Fig. 13. In the space of a few weeks, some 30cm of sediment was naturally eroded away from a cannon to fully expose a bronze rigging block and galley brick to one side.

(Lavery, 1987: 197) and dozens of bricks are visible to the north of Site 25C (Figs. 10, 13, 17). A similar kettle has been excavated from the wreck of the English merchant slave ship the *Henrietta Marie*, lost off New Ground reef, Key West, in 1700 (Malcom, 2000), while two large copper fish kettles lost on the first-rate HMS *Royal George* in 1782 were salvaged in 1839 (Codrington, 1840: 72).

After concerns were raised about the weight of brick-lined kitchen galleys on the maneuverability of warships, and worries that copper contributed to scurvy, iron fire hearths started to be preferred from 1757, but only predominated in the Royal Navy after 1780, when Alexander Brodie patented the iron ship's stove. The Navy Board was so impressed by the innovation that they entered into a comprehensive contract with Brodie, giving him a commercial monopoly for English warships (Watson, 1968: 410).

The wreck of HMS *Swift*, lost in 1770 off Patagonia, southern Argentina, was furnished with a similar rectangular iron box, measuring 115 x 75cm, as well as lead sheets to protect the deck from fire and heat. She retained her 44 x 30cm copper cauldron with a fixed

handle and Admiralty broad arrow stamped on its upper face (Elkin *et al.*, 2007: 39, 49). Iron fire hearths of the Brodie form have been recorded on the wrecks of HMS *De Braak*, which foundered off Delaware in May 1798, on the 4,968m-deep "Piña Colada" wreck lost off Florida and dated to around 1810 by 14 gold coins wrapped inside a gold box (Sinclair, 2002: 3)⁴ and on the early 19th-century Mardi Gras shipwreck off Louisiana (Ford *et al.* 2008: 98-100).

Since copper kettles are associated with cooking galleys, which were positioned at the forward end of the middle deck of three-deckers, well away from the gunpowder magazine, forcing the chimney to pass through two decks before discharging its smoke (Goodwin, 1987: 160; Lavery, 1987: 196), the presence of this artifact on the surface of Site 25C seems to reflect the comprehensive deterioration and/or destruction of the upper decks or, at least, their structural collapse to one side of the wreck site. The highly distinct form of the iron Brodie stove recorded on many wrecks post-dating 1770, and absent from Site 25C, provides a tentative *terminus ante quem* for Site 25C.

C. Gunners' Wheels

Contextualized with bronze cannon C4 (S1; grid L6) and an iron cannon ball and gun C16 (S2; grid N16) lie two circular stone artifacts (Figs. 7-8). These objects are unlikely to be millstones designed for the on-board grinding of grain because the Royal Navy retained victualling yards for this purpose. A marine's standard ration in the Georgian era was 1lb of bread a day. Bread and biscuit were baked and packed in bags at the Victualling Office on Tower Hill and at its branch establishments at Portsmouth and Plymouth (Rodger, 1986: 83). When stores needed topping up, warships were serviced by transport ships or overseas yards located at Gibraltar, Port Mahon and other localities (Macdonald, 2006: 60-61).

The stocking of warships with these foodstuffs prior to sailing is verified by the list of stores readied on the first-rate HMS *Royal George* for her voyage into the Mediterranean before she sank off Spithead in 1782. Her victuals included 43 tons of bread (Tracey, 1812: vi).

Site 25C's two circular stone artifacts are more likely to be rare examples of gunners' wheels used to grind down irregularities on shot and to sharpen bayonets. An example is still preserved today on Nelson's flagship, HMS *Victory*, in Portsmouth Historic Dockyard.

D. Iron Ballast

A concentration of about 32 rectangular iron concretions to the southwest of the site (grid T17-V25; Figs. 11-12) appears to be iron ballast blocks used on Royal



Fig. 14. Bronze cannon and circular pewter plate rim in the foreground.



Fig. 15. Miscellaneous copper artifact and possible iron sword at left.

Navy warships. The exploitation of this medium during the Georgian era remains a matter of some confusion. T.R. Blanckley's *A Naval Expositor* of 1750 explained that "Ballast – is in great Ships generally Beach Stones, and in small Iron, laid in the Hold next the Keelson, in order to keep the Ship stiff, so that they may bear more Sail." This preference is similarly conveyed by the chronicles of Blaise Ollivier, Master Shipwright at France's foremost Royal Dockyard at Brest. Ollivier undertook a secret mission to all of England and Holland's major naval dockyards in 1737, when HMS *Victory* was just being completed in her dry-dock at Portsmouth, to report on methods of shipbuilding by France's maritime rivals. His five-month mission resulted in a 360-page manuscript accompanied by 13 sheets of diagrams and plans.

The shipwright (Roberts, 1992: 167, 169) agreed that the English ballasted ships with what he termed 'earth':

"They stow it in a straight line and parallel to the keel from the main forward bulkhead to the main after bulkhead, and also in a straight line athwartships. They do not use iron kentledge to ballast their ships save for long commissions, and in those ships which have insufficient space in the hold to accommodate earth ballast. I confess that when I saw at Deptford Dockyard that great quantity of kent-

ledge of which I spoke... I believed that the English knew how to make good use of it... I have asked the reason of several officers; they replied that iron ballast stiffens all the movements of the ship, especially the rolling. Upon receiving this reply I enquired as to how the ballast is stowed, and was shown it on either rise of the keelson to larboard and to starboard of this timber. We used to find the same inconvenience in our own ships when we stowed the ballast as the English do, but now that we lay it along the rungheds our ships have an easier motion. The English admit that if iron kentledge did not make the movement of their ships so harsh it would be more advantageous to ballast their ships with kentledge than with gravel or earth, since the weight of the iron is farther removed from the centre of motion, and because the weight of the stores stowed atop the ballast is carried lower down."

Ollivier's argument is inconsistent, however, and contradictory to follow. By his own eye-witness admission (Roberts, 1992: 55), he also reported how he

"found next to one of the docks at Deptford a very great quantity of kentledge which they [Royal Navy] use to ballast their ships. The iron pigs are about 36 inches long and 6 inches square, and with these dimensions they must weight 350 pounds. I will say nothing about this sort of ballast: its usefulness is sufficiently well-known; I wish that no other were employed in the King's ships. The pigs which I saw at Deptford are pierced diagonally by several holes along the edges."

How are we to explain the master shipwright-cum-spy's contradiction in terms? Iron ballast was evidently extremely common at Deptford, much to the disappointment of Ollivier, whose language suggests that the Royal Navy was on the verge of realizing that kentledge offered far greater sailing efficiency than gravel.

Iron ballast on the wreck of HMS *Victory* should not be unexpected. Similar 320lb pig-iron ballast blocks stamped with the English naval board broad arrow, and fixed permanently into the hull to trim the ship, have been recorded on the fifth-rate warship HMS *Fowey*, which was wrecked off Florida in 1748 after seeing service in the English Channel and Gibraltar in 1744 and 1745 (Skowronek *et al.*, 1987: fig. 3). An apparent plate with bolt holes contextualized with the Site 25C ballast may comprise part of a similar permanent attachment mechanism (Fig. 11). A reliance on cast iron ballast by the Royal Navy in the 1740s is actually clearly attested by Admiralty shipboard warrants (ADM 106/920/174; ADM 106/920/850).

Kentledge has also been recorded on the wreck of HMS *Pomone*, a fifth-rate, 38-gun frigate lost on the Needles in 1811 and equipped with 37 x 2 cwt iron ballast blocks (3.75 tons) (Tomalin *et al.*, 2000: 18). Analysis of its distribution, and comparisons with Royal



Fig. 16. Disarticulated wooden planking to the southwest of Site 25C.



Fig. 17. A possible L-shaped wooden knee associated with galley bricks.



Fig. 18. A wooden spar or stanchion in situ.



Fig. 19. Photomosaic of the highly deteriorated 10m-long wooden rudder to the southwest of the wreck site (oblique and vertical views).

Navy plans for the *Artois* (wrecked 1794) and *Barrosa* (lost 1812), suggest that iron ballast was generally laid longitudinally on each side of central members along the keelson in proximity to the ship's well and shot-lockers, but that very little continued aft of the pump and mainmast foot (Tomalin *et al.*, 2000: 17).

As with Site 25C's copper kettle and the presence of 42-pounders on the surface of the wreck, this cluster of iron ballast implies that in places HMS *Victory* has broken up to a level beneath its lower deck and below the turn-of-the-bilge. Its presence on the southwest flank of the wreck, with no trail of archaeology visible to the northwest, raises the possibility that sections of the wreck may remain buried beneath sediments to the northwest. Alternatively, *Victory's* port side may have collapsed on top of the starboard flank. Neither scenario can be confirmed without complementary core sampling or excavation.

5. Bronze Cannon: Identification & Significance

The 41 cannon dominating the surface of Site 25C are currently the most remarkable features of this shipwreck (Figs. 2-3, 20-42). These tools of war were not merely functional. With their elegant dolphins (Fig. 27) and intricate cast design and royal arms, all are exquisite expressions of bronze craftsmanship. A few are entirely exposed above mobile sediments, while the majority are either nearly entirely concealed or plunge into sediments at acute angles (Figs. 22-25). An oxidized patina and light concretion covers most of the cannon.

OME ROV supervisor Gary Peterson, assisted by

ROV technician Olaf Dieckhoff, custom-designed a triangular ruler tool for ROV Zeus to measure the precise diameter of the bores and thus determine the guns' types of calibre (Figs. 20-21). The muzzles of 14 cannon were exposed above the sediments, enabling bore measurements to be taken; the trunnion widths of another 11 were measured because by 1716 this cannon element was equal in length to the diameter of the bore (Lavery, 1987: 97). Cannon with bores ranging between 4 and 7 inches diameter were recorded (Table 1).

Bore diameter to calibre ratio statistics attributed to Albert Borgard of the Royal Regiment of Artillery, who was active until 1727, preserved in the document *Construction of Brass Gun* (Caruana, 1997: 34, 39), demonstrate that Site 25C's cannon correspond to between 6- and 42-pounders (Table 2): three 6- or 12-pounders, three 12-pounders and eight 24-pounders.

Crucially for the site's identification, the six certain and two probable cannon with 7-inch bores correspond to 42-pounder guns – the largest and most prestigious cannon used in European naval warfare. After 1677, this calibre of gun was only employed on first-rate warships in the Royal Navy. Thomas James's *Book of Artillery* relates gun sizes on first-rate Royal Navy warships to deck stations, lengths and weights for the Naval Gun Establishment of 1716 (Table 3), illustrating that first-rate warships carried 28 42-pounder brass cannon on their lower decks, which individually weighed 66 cwt or 3.35 tons (Caruana, 1997: 43).

Contemporary documents standardized the lengths of 42-pounders at 9ft 6in and 10ft. These dimensions were stipulated in 1725 by Colonel Armstrong, Surveyor General of the Ordnance, in John Muller's *A Treatise of*



Fig. 20. ROV Zeus measuring the bore of bronze cannon C33 in situ.



Fig. 21. ROV Zeus measuring the bore of a bronze cannon in situ.

Artillery of 1757, and were the formula relied on for the complete set of brass cannon manufactured for a 100-gun ship cast by Albert Borgard in the Royal Brass Foundry before 1727 (Blackmore, 1976: 399, 400; Caruana, 1997: 34, 39; Lavery, 1987: 98). For reasons that are not currently explicable, these standards are exceeded by the recovered 42-pounder cannon C33 on Site 25C, which measures 3.4m (11.15ft) in length.

The two cannon recovered from Site 25C in October 2008 confirm the order of the assemblages' magnitude:

- Cannon C28, 12-pounder (Figs. 40, 42): L. 3.12m, muzzle diam. 11.5cm (4.5in), trunnion diam. 11.5cm, decorated with the royal arms of King George II. Inscribed with the founders name SCHALCH and the date of 1734.
- Cannon C33, 42-pounder (Fig. 41): L. 3.40m, muzzle diam. 17.8cm (7in), trunnion diam. 17.8cm, decorated with the royal arms of King George I. Inscribed with the founders name SCHALCH and the date of 1726. Most of the cannon lie upside-down, with their top surfaces concealed. Where the upper surfaces of nine examples were recorded underwater (cannon C3, C5, C8,

C10, C17, C28, C32, C33, C38), however, all feature along the first reinforce royal arms surmounted by a crown (Figs. 32-38). Within the arms are four subdivided quadrants framed by a circular banner. In the lower left-hand quadrant the profile of a harp is visible, symbolizing the British monarchy's sovereignty over Ireland. In the upper right quadrant the three fleur-de-lys are present. On each side rise two foliate branches (Figs. 32-38). On cannon C5 and C32, the 'ROI' from 'Dieu et mon droit' (God and my right), the legend of the British royal family's divine right to rule, is clearly visible (Fig. 38) with the 'T' excluded from the mould to fit the cannon banner.

These features identify eight of the cannon as cast under King George I of England (r. 1714-27). The 12-pounder gun C28 is almost identical, except for the exclusion of the foliate branches to either side of the arms, which proves that this piece of ordnance was cast under King George II (r. 1727-60). The combination of calibres, plus the 42-pounder bronze guns and royal arms, leaves no doubt that Site 25C contains the wreck of an English first-rate warship, whose cannon were manufactured between the second and late sixth decade of the 18th century.

Research into this cannon assemblage clarifies that multiple arms styles co-exist, indicative of production at different times. These manifest in the treatment of the foliate branches:

- Type 1A (Fig. 32): elaborate swirling twin-leaved branches intercut by an elliptical tripartite foliate motif midway, terminating at the bottom with a convex scroll. A sub-type 1B (Figs. 34-35) is identical except for the absence of the tripartite foliate.
- Type 2 (Figs. 36-37): less complex single leaved branch, sickle shaped, with a concave lower curve.
- Type 3 (Fig. 38): elaborate crest with a single leaved branch and no lower scroll, rising upwards to sprout on the outer branch.

From the perspective of ordnance deployment, HMS *Victory* was unique as the last first-rate in the Royal Navy to be armed entirely with brass guns (Lyon, 1993: 39). Site 25C is only one of two first-rates whose ordnance has ever been located underwater. The cannon from the first-rate *Royal George*, wrecked off Spithead in 1782, combined iron and brass ordnance, with the latter almost all melted down following the ship's salvage between 1782 and 1843 (Codrington, 1840: 167). Site 25C contains the wreck of the only known Royal Navy warship equipped with a full complement of bronze ordnance.

At the present state of research, only two other bronze guns of King George I are verified as in existence: an

Cannon No.	Royal Arms	Bore Diam. (in.)	Trunnion Diam. (in.)	Type (Pounder)
C1		6		24
C2			4	6/12?
C3	George I	6		24
C4			4.5	12
C5	George I			
C8	George I			
C9		5.5		24
C10	George I	7		42
C12		6.5		42 ?
C13		5.5		24
C17	George I	5.5		24
C19		7		42
C20		5.5		24
C21			6.5	42 ?
C22			5.5	24
C26			4	6/12 ?
C27			4.5	12
C28	George II	4.5	4.5	12
C29		4		6/12 ?
C30		7		42
C31		7	7	42
C32	George I		7	42
C33	George I	7	7	42
C38	George I		6	24

Table 1. List of cannon bore and trunnion diameters on Site 25C in relation to gun calibres.

English 13-inch mortar cast in 1726 by Andrew Schalch, master founder at the Woolwich Brass Foundry, bearing the arms of George I on the reinforce and a grotesque mask ornament on its pan (Blackmore, 1976: pl. 65); and an 8-inch howitzer captured at Yorktown in October 1781 and now in the Colonial National Historical Park, Virginia, dating to 1727, with the royal arms of George I on the chase and the coat of arms of John, Duke of Argyll, Master General of Ordnance from 3 June 1725 to 10 May 1740, on the breech (Borresen, 1938: 237, 239; Hogg, 1963: 1629).

The desk-based assessment predicted that a highly conspicuous diagnostic attribute of the wreck of HMS *Victory* would be bronze cannon stamped with the founder's name of Andrew Schalch. The 12- and 42-pounders recovered from the site are clearly marked as having been cast by 'SCHALCH': his name is prominently immor-

talized along a band circumscribing the first base ring (Fig. 42).

Moreover, Site 25C is the only Royal Navy shipwreck discovered with 42-pounder cannon, the most powerful and prestigious guns used in Colonial naval warfare. The gun recovered from the wreck, C33 (Fig. 41), is the sole example in existence on land. The 41 bronze guns so far recorded on the surface of Site 25C point towards a realistic expectation of recovering all of her guns (presuming some were not jettisoned). Given the prestigious nature of *Victory's* cannon, and the vessel's status as the pre-eminent warship of the age, it is reasonable to presume that she may have tried to hold on to her cannon, rejecting thoughts of jettison, until the bitter end.

The significance of Site 25C's recorded and anticipated ordnance can be summarized as:

Poundage of Gun	42	32	24	18	12	9	6	3	1.5	1
Calibre of the Ball (in.)	6.68	6.10	5.54	5.03	4.40	4.00	3.49	2.77	2.20	1.92
Diam. Of the Bore (in.)	6.97	6.37	5.76	5.24	4.57	4.17	3.65	2.92	2.32	2.03
Length of Gun (ft)	10	10	10	10	9.5	9.5	9	7	6	5.5

Table 2. Bore diameter to calibre ratio statistics preserved in Albert Bordgard's pre-1727 document Construction of Brass Gun (after Caruana, 1997: 39).

Deck	No. of Guns	Nature Calibre	Length (ft)	Weight (cwt)
Lower	28	42	10	66
Middle	28	24	10	46
Upper	28	12	9.5	31
Quarter	12	6	9	18
Forecastle	4	6	9	18

Table 3. List of bronze guns on a first-rate Royal Navy warship from Thomas James' Book of Artillery for Naval Gun Establishment of 1716.

1. The only complete armament of bronze guns from a first-rate Royal Navy warship.
2. The sole intact collection of exclusively bronze cannon from any English man-of-war of any period.
3. The largest collection of bronze guns from a single shipwreck in the world.
4. Extends our knowledge of George I bronze cannon exponentially, also bearing in mind that royal arms were commonly replaced by royal ciphers stamped 'GR' as the standard means of adornment after 1726 (Blackmore, 1976: 17; Borresen, 1938: 237, 239).
5. Site 25C probably contains the largest consignment of bronze guns ever manufactured, and certainly preserved today, under the brilliant eye of master founder Andrew Schalch, the first royal appointee to the Royal Brass Foundry in Woolwich. Schalch was born in 1692 at Schaffhausen, Switzerland, and trained in a cannon foundry at Douai, France. In 1716, aged 24, he was appointed Master Founder at Woolwich, where he remained until 1770, before retiring and dying six year later. Schalch is buried in Woolwich churchyard (Blackmore, 1976: 72). His name should be present on the base ring of the majority of Site 25C's Georgian guns.
6. If the comparative data available for the *Royal George*, wrecked in 1782 carrying English, French, Spanish and Dutch guns, some cast as early as 1616 (Caruana, 1997: 51-2), and most dating to around 1630, prove pertinent to *Victory*, then some of her cannon could be virtual museum pieces dating back 150 years and even to the reign of Queen Elizabeth (r. 1558-1603). This assumes that after the Admiralty's logistical shift towards iron guns in 1677, six decades later bronze cannon were becoming increasingly scarce. Thus, the 24-pounders on board the *Britannia* were French, whilst the 12-pounders were mainly Dutch, Spanish and occasionally English (Caruana, 1997: 51-2). Cannon C29 on Site 25C bears a founder's date of 1719, confirming the co-existence on the wreck of HMS *Victory* of an eclectic mix of contemporary and old guns. The diversity of Site 25C's cannon will provide the definitive statement on the use of bronze guns within the Royal Navy between the late 17th century and 1744.



Fig. 22. Bronze cannon C30, almost completely buried.



Fig. 23. Bronze cannon C37 almost completely buried (muzzle at right foreground).

6. Ship Identity

The identity of the Site 25C shipwreck can be confirmed statistically, and on a purely objective basis, by interweaving three separate strands of research, which interlock to produce a definitive characterization:

A. An examination of all Royal Navy losses in the English Channel. To minimize methodological bias, this approach excludes the historical knowledge about what rates of ships carried 42-pounder bronze guns with George I and George II royal arms. The only condition is that a ship must have 41 guns or more, correlating to the number visible on the surface of Site 25C.

B. Identification of Site 25C through reference to all Royal Navy ships equipped with a significant armament of 42-pounder bronze guns in combination with King George I and George II royal arms.

C. A survey of the geographical distribution of first-

rate Royal Navy warship losses throughout the world's oceans.

A. Royal Navy Losses in the English Channel

Out of 141 first- to fifth-rate Royal Navy ships lost throughout the world's oceans between 1690 and 1810 with 41 cannon or more, only 22 (16%) were lost in British waters (calculated from Winfield, 2007). Of these, only three foundered anywhere near the Channel Isles or in the English Channel:

- A. *Victory*, first-rate – 1744, allegedly off the Casquets.
- B. *Royal Anne Galley*, fifth-rate – 1721, Lizard Point, Cornwall.
- C. *Severn*, fifth-rate – 1804, Granville Bay, Jersey.

The *Royal Anne Galley* is an English Heritage protected wreck site located in about 5m of water off the Lizard Point and can thus be discounted.⁵ HMS *Severn* ran aground in Granville Bay, Jersey, and all the crew was saved. Her fate and location are not disputed and non-controversial. Although the sixth-rate, 276-ton and 94ft-long *Hind* was wrecked relatively near Site 25C on a ridge of rocks near Guernsey in 1721, and has not been discovered to date (Hepper, 1994: 31; Winfield, 2007: 243), she was only equipped with 20 guns. Since the surface manifestations of Site 25C contain 41 cannon, and the discovery of a King George II cannon associated with a founder's date places the wreck after the year 1734, the *Hind* can be safely excluded from the current equation.

Based on the detected remains of wreckage of Her Majesty's warships in the English Channel and of published historical warship losses, the statistical probability that Site 25C is the final resting place of HMS *Victory* is 100% by pursuing this strand of evidence.

B. Bronze Cannon with George I & George II Royal Arms

The reign of King George I (r. 1714-27) witnessed a final flourish in the glorious lifespan of bronze cannon on English warships as the Royal Navy phased them out in favor of iron, primarily due to financial realities. In 1625, brass was already four times more expensive than iron (£8 per hundredweight, compared to £2). When Parliament voted £600,000 for 30 new warships in 1677 – one first-rate, nine second-rates and 20 third-rates – Samuel Pepys calculated that the production of the bronze guns alone would have cost £450,000, leaving an unrealistic sum to cover the expense of building the actual ships. All

30 warships were consequently equipped with iron guns, even the first-rate (Lavery, 1987: 87).

The pivotal moment in the decline of brass guns had arrived, and from now on bronze cannon would be reserved exclusively for the mightiest Royal Navy warships. In 1698, only 11 of 323 ships were equipped with any brass guns at all (Gardiner, 1992: 149) and all-brass ordnance on men-of-war was restricted to flagships and royal yachts. Despite the high cost of bronze gun manufacture, iron's tendency not to overheat and cause muzzles to droop was an additional functional preference.

By the 1716 Naval Gun Establishment, only three first-rates carried 100 brass guns; the four other first-rates were equipped with iron. All rates below had exclusively iron ordnance (Caruana, 1997: 43). At the same time, the 42-pounder bronze gun, formerly considered the Royal Navy's finest and most prestigious weapon, was replaced as a general policy by the 32-pounder demi-cannon. The only ships still equipped with 42-pounders were three first-rate warships, *Victory*, *Royal George* and *Britannia*. With the naval Gun Establishment of 1723, 32-pounder iron cannon became a permanent fixture on new first-rates (Caruana, 1997: 42, 43, 48, 49, 51).

By the time Blaise Ollivier spied on England's Royal Navy dockyards for the French in 1737, bronze cannon had almost completely disappeared from the Royal Navy's maritime landscape. "I saw no brass guns at the gun wharf at Portsmouth", reported Ollivier (Roberts, 1992: 167), "and there are very few in the stores at Chatham. Recently most of the iron guns have been coated with a varnish, the composition of which is still kept secret by the inventor... It does not melt in the sunshine; I examined it on the hottest days."

One plausible reservation may be expressed over the date of Site 25C. HMS *Victory* was launched in 1737 and she foundered in 1744. Both dates fall within the reign of King George II (r. 1727-60). While the majority of the wreck's guns bear the royal arms of George I, and a founder's mark on cannon C29 dates to 1719, only one so far features the arms of George II and dates to 1734. Why do the majority of the cannon not date to the reign of this latter monarch? The majority presence of guns bearing King George I arms is explicable because the construction of *Victory* started in 1726, one year before the death of George I. Thus, it would be logical to assume that the order for her bronze cannon would have been issued this year or even earlier. Accordingly, cannon C33 recovered from Site 25C bears a founder's date of 1726 (Fig. 39).

In the early 18th century, ordnance was frequently commissioned when a ship was ordered and was completed long before launching. *Victory* was no different. The bill for her 28 24-pounder gun carriages was submitted eight years before she was launched on 30 Sep-

tember 1729, in accordance with a warrant dated 9 June 1729 (Caruana, 1997: 28). This date provides an obvious *terminus ante quem* for the ordering of the guns destined to lie on these carriages. Royal arms of King George I should thus be expected on the wreck of HMS *Victory*, even excluding the possibility that she was potentially equipped with some antique and newer guns commandeered from naval stores, such as cannon C29 dated to 1719. The presence of the George II cannon on Site 25C confirms this mixed ordnance hypothesis.

This separate line of research again leads to the objective conclusion that the only Royal Navy warship equipped with a substantial armament of bronze cannon dating to the reigns of George I and George II, including extremely rare 42-pounder bronze guns, and lost within the English Channel, was the first-rate HMS *Victory*.

C. First-Rate Royal Navy Warship Losses

According to the above information, the only Royal Navy warships armed with substantial armaments of bronze cannon and 42-pounders, such as are present on the surface of Site 25C, were first-rates. Between the start of the reign of King George I in 1714 and 1810, only four first rates were lost in the world's seas (Hepper, 1994; Lyon, 1993; Winfield, 2007):

- A. *Ville de Paris* – ex-French prize. Built 1757, taken in the battle of the Saintes, 12 April 1782. 104 guns in 1778-9. Foundered in a hurricane off Newfoundland around 19 September 1782.
- B. *Queen Charlotte* – built at Chatham, 1790. Burnt off Livorno (Leghorn), Italy, 17 February 1800.
- C. *Royal George* – built at Woolwich, 1752. Foundered off Spithead while being heeled for repair, 29 August 1782.
- D. HMS *Victory* – built in Portsmouth, 1726. Wrecked with all hands, allegedly off the Casquets, English Channel, 5 October 1744.

This third distinct line of enquiry again leads to the unavoidable conclusion that the only possible first-rate warship lost in the English Channel within this time-frame was HMS *Victory*.

7. Wreck Location: a Case of Mistaken Geography

The discovery of HMS *Victory* around 100km west of the Casquets in the Channel Isles solves one of Britain's most enduring maritime mysteries. Contemporary accounts

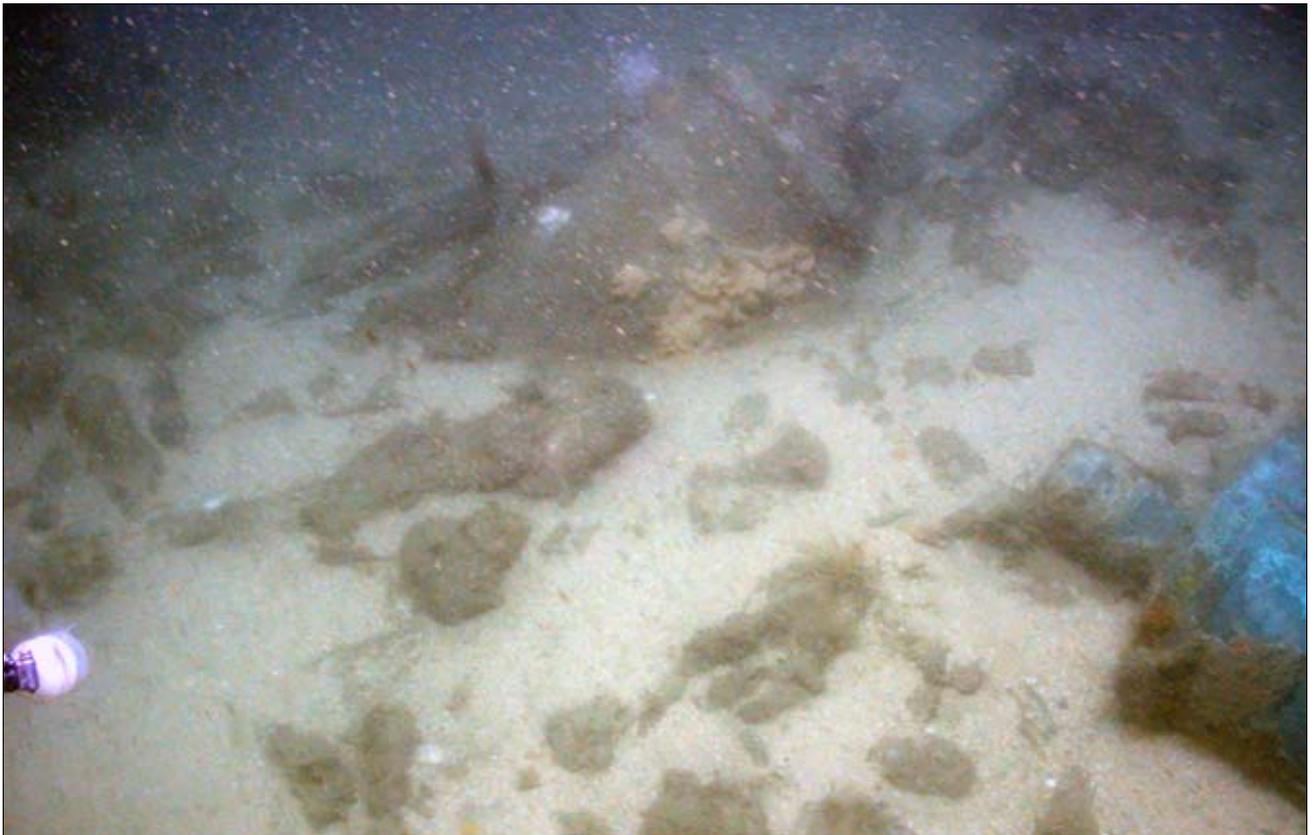


Fig. 24. Bronze cannon plunging into a sand blanket at an acute angle and buried by at least 2m.

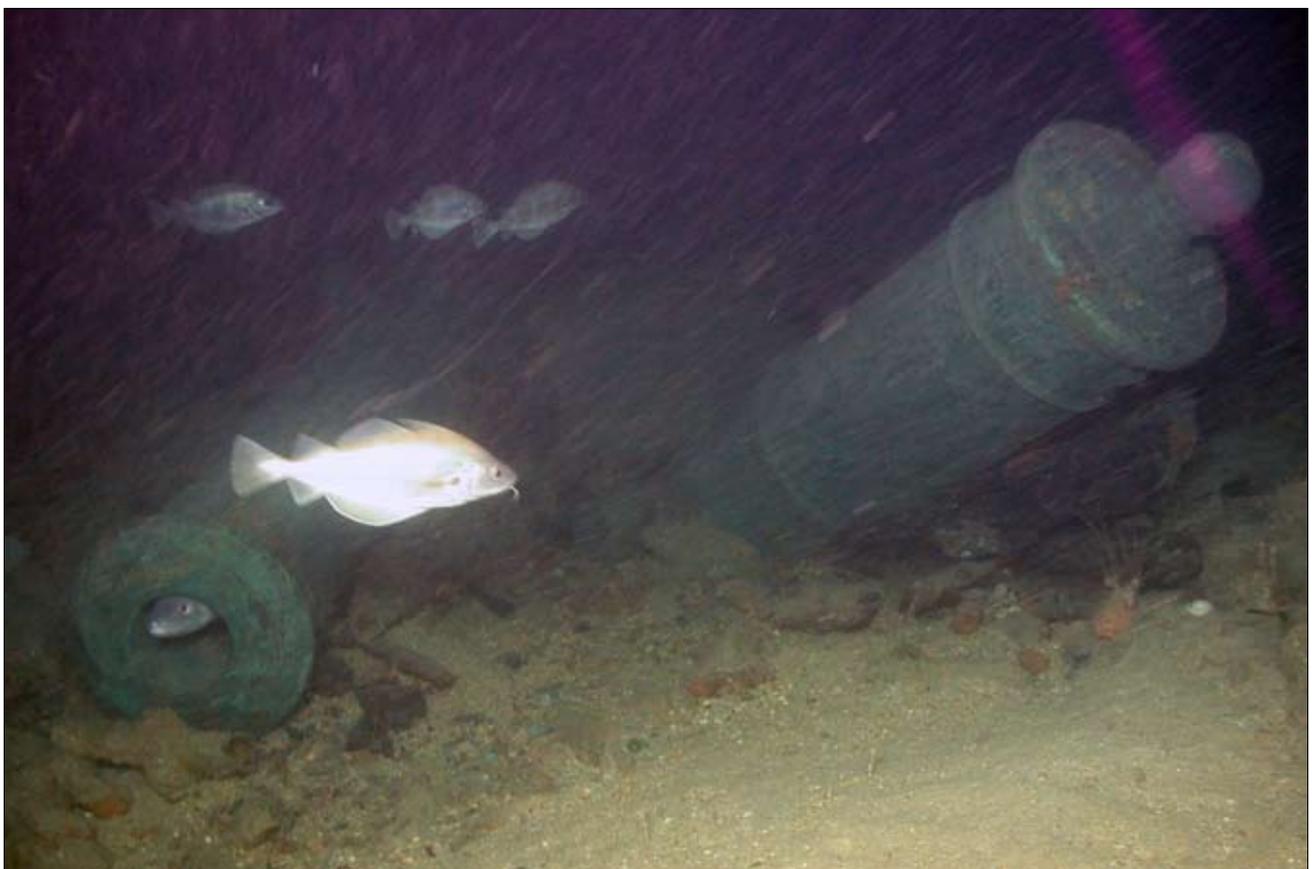


Fig. 25. Bronze cannon C10 and C13 protruding from a sandbank at an acute angle.



Fig. 26. Cannon C33 in situ.



Fig. 27. Dolphin handles on cannon C33.



Fig. 28. Cannon C2 in situ. Note the concretion across the muzzle.

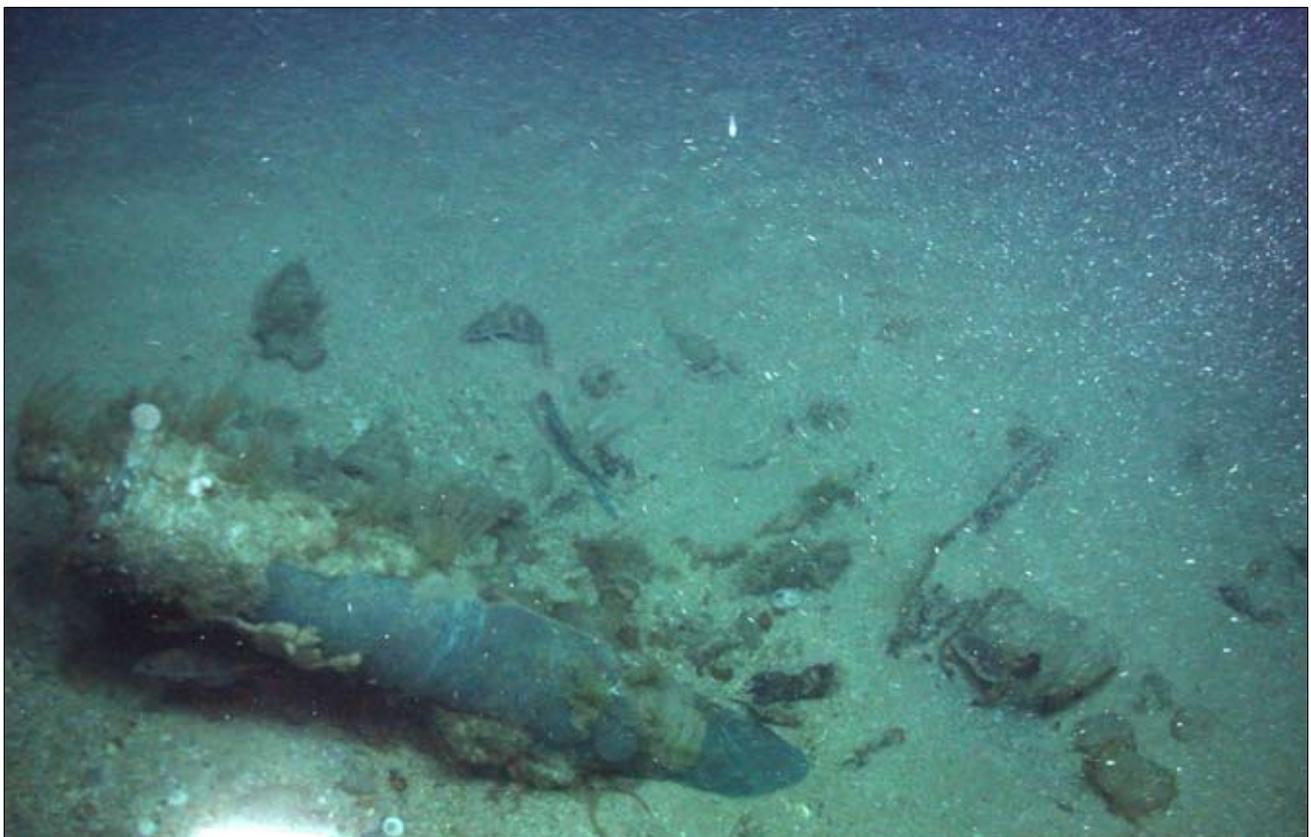


Fig. 29. Cannon in situ. Note the concretion across the cascable.



Fig. 30. Bronze cannon with a broken muzzle, possibly the result of overheating during firing.

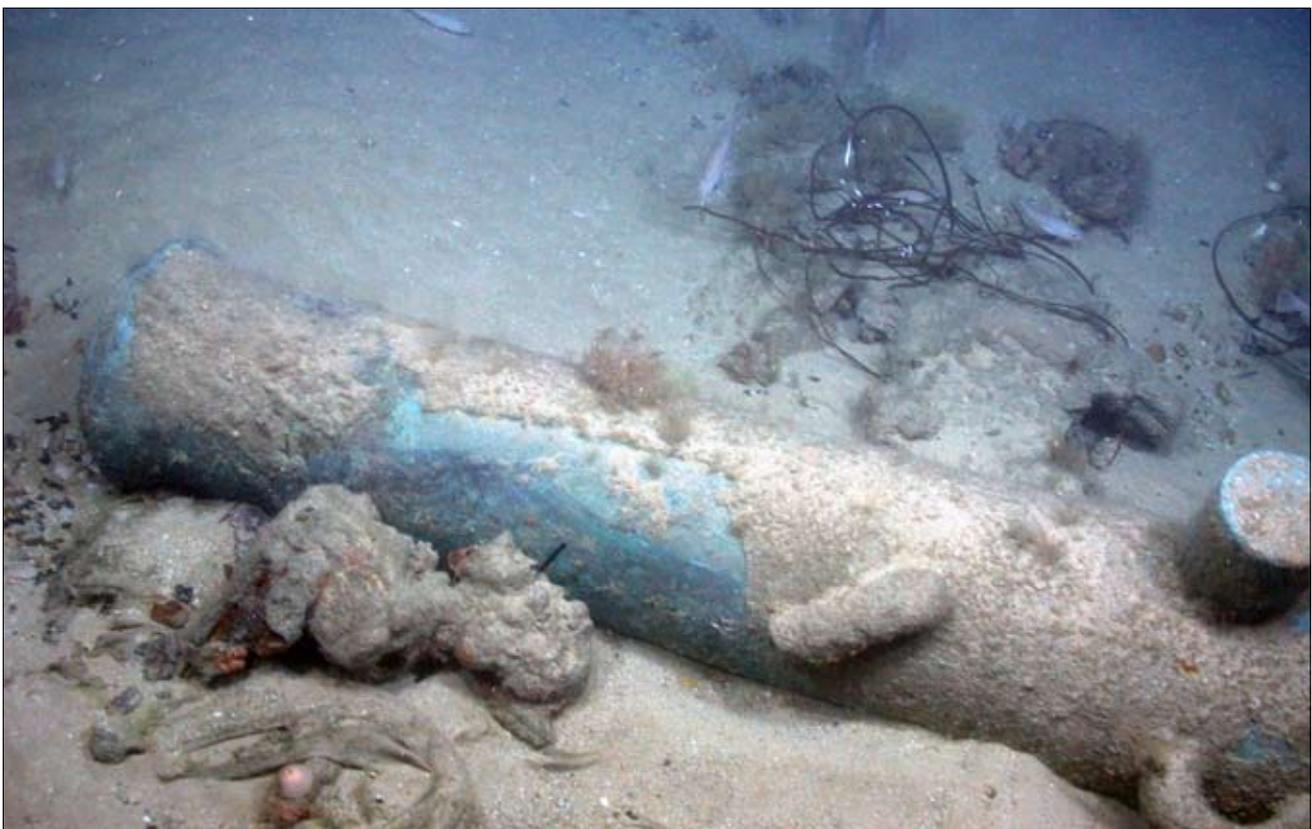


Fig. 31. Bronze cannon in situ. Note the modern plastic contamination in the background.



Fig. 32. Cannon C5 in situ. Crest style 1A.



Fig. 33. Cannon C10 in situ.



Figs. 34-35. Cannon C8 in situ. Crest style 1B.



Figs. 36-37. Cannon C38 in situ. Crest style 2.



Fig. 38. 42-pounder cannon C32 in situ. Crest style 3.



Fig. 39. Founder's date of 1726 along the base ring of cannon C32.



Fig. 40. The 12-pounder cannon C28 after recovery; L. 3.12m.



Fig. 41. The 42-pounder cannon C33 after recovery; L.3.40m.



Fig. 42. The base ring of 12-pounder cannon C28, inscribed 'SCHALCH FECIT', 'Schalch Made It,' and the founder's date of 1734. Andrew Schalch was master founder at the Royal Brass Foundry, Woolwich.

of the ship's loss, including first-hand reports from local merchant Nicholas Dobree of Guernsey, reveal that the Admiralty was satisfied that HMS *Victory* foundered off Alderney. Archaeological investigations by Odyssey prove that these accounts were in reality geographically and factually speculative and inaccurate.

The Casquets are the graveyard of the English Channel. This 2.5km-long spread of large rocky islets protrudes 4-10m above the water line, 8km due west of Alderney, and is surrounded by complex 10-knot swirling currents. The *Channel Pilot* guide to the Casquets warns "breakers", "hazardous", "violent eddies" and "use only with local knowledge". No less than 392 wrecks dating between 1278 and 1962 cluster around Alderney, Guernsey and Sark (Ovenden and Shayer, 2002: 8, 19-20). The image of the *Victory* being ripped apart when she struck the Black Rock of the Casquets on 5 October 1744 is both institutionalized within modern history (cf. Ballantyne and Eastland, 2005: 35; Clowes, 1966: 108; Colledge and Warlow, 2006: 374; Dafter, 2001: 22; Lyon, 1993: 39) and everyday life, with her tragic demise appearing on the colorful stamps of Alderney. The artist portrayed the island's lighthouse standing uselessly in the background as the ship sunk.

The deeply entrenched public image of *Victory's* loss at this location is reflected in *The Biographical Magazine's* record (Vol. I, 1776: 133) of the life and times of Sir John Balchin, which recalled how:

"The inhabitants of Alderney heard the guns which the admiral fired as signals of distress; but the tempest raged with such uncommon violence, that no assistance could be given. The signal guns were continued during the whole night, but early in the morning the ship sunk, and every person on board perished. She was manned with eleven hundred of the most expert seamen in the royal navy, ex-

clusive of fifty gentlemen of family and fortune, who went as volunteers. Thus one of the most experienced admirals, with eleven hundred and fifty men were lost in a moment, and passed together through the gloomy valley that separates time from eternity."

Eyewitness and physical evidence certainly seemed to place the *Victory* near the Casquets on 5 October. Around 100 warning gunshots were allegedly heard firing by witnesses from Alderney and Guernsey, according to the *Daily Gazetteer* of 22 October, the standard practice for a ship that found itself dangerously close to a reef or other navigational hazard in order to warn other vessels.

The image of *Victory* foundering on the Casquets was strengthened by the discovery of various wreckage marked with the name of the warship. On 19 October *The Daily Advertiser* published the news that the admiralty had been dreading in a letter written by Guernsey merchant Nicholas Dobree, who advised that:

"This last Week there has been... Pieces of Wreck found upon our Coast; among others, two Topmasts, one 74, the other 64 Feet long, mark'd in white lead VICT; and also a Topsail-Yard, 64 Feet long, mark'd also in white lead Victy; upon the Head of the Naile to the Masts and Yard is the Arrow; to that we greatly fear the *Victory* has been lost upon our Coasts."

Additional wreckage derived from *Victory* included large pump fragments, small gun carriages marked GR (for George Rex), an oar marked '*Victory*' on Sark, and on Alderney the portmanteau of Captain Cotterell (ADM 354/128/81). On 26-29 October 1744, *The Penny London Post* concurred that "Capt. Cottrell's Portmanteau and Lieutenant Billinger's Chest were taken up" on Guernsey. Cotterell was described as "of Wolfe's Regiment of Marines" (*Penny London Post*, 17-19 October 1744). On 5-7 November, the same newspaper reported that "We hear that several Bodies have been taken up on the Alderney-Shore, and one of the Lieutenant of the *Victory*, with his Commission in his Pocket."

The Royal Navy swiftly dispatched the *Falkland* and the *Fly* sloop on a fact-finding mission about this wreckage. The result was seemingly conclusive, with *The Daily Advertiser* of 22 October citing an Admiralty dispatch that confirmed how "in their Cruize they met with several Pieces of Wreck, v.z. several yards, part of a Mast, and part of the carv'd-work Stern, all which believe to belong to the *Victory*; and find, by the People of Alderney, that they heard the firing of 90 and 100 Guns, at the Time she was supposed to be in Distress, so that there is not the least Hopes left of ever hearing of her."

On 3 January 1745 attempts to recover this wreckage were still ongoing, with Nicholas Dobree confirming to the Admiralty by letter (ADM 106/127/1) that "One

of the masts, yards and pumps of which I have Given your Honour's advice which have been saved upon our Coast from the unfortunate Wreck of the *Victory* lay still under Some of the Clefs of our Island, the continuall bad weather have Hindered our fishing boats to get said masts etc into our Harbour. I shall soon send you what the salvers demandes for salvage of the same."

A Royal Navy letter of 1 May 1745 addressed to Commander Richard Hughes from Corting Dock also confirmed that "The Warrants (accompanying the same) – Directing the officers to receive two topmasts, some yards and pumps, saved out of the *Victory*; when they are brought from Guernsey to this yard..." (ADM 106/1043/50). Certainly, the local islanders and the Admiralty were convinced of *Victory's* fate at the hands of the black rocks of the Casquets.

Site 25C, however, is located around 100km west of the Casquets. The geographical scenario of *Victory* firing her guns off Alderney and then being driven back by the storm so far into the English Channel, of course, is theoretically possible. The logbooks from the *Duke* (ADM 51/282, ADM 52/576), which was accompanying Balchin's fleet back to England, however, verify that the wind was blowing from the west and south-southwest throughout 4 October 1744 and west by north when this warship lost sight of the rest of the fleet. Alderney was only sighted 15 hours later. The absence of any eastern or north-eastern winds during this storm makes the scenario of the *Victory* being propelled so far west after striking the Channel Isles physically impossible.

While undoubtedly accurate, Nicholas Dobree's description of some shipboard assemblages from *Victory* being washed up on the Channel Isles from its wreck point has created a false impression of the geography of her loss. There are four reasons to be wary of the merchant's version of events, largely resulting from the high level of rumor surrounding the disappearance of what was perceived to be the greatest warship in the world. Not only are other locations cited as the scene of *Victory's* possible disappearance, but both contemporary and modern missions to locate her wreckage have detected no incriminating archaeological evidence.

First, part of *Victory's* stern was also alleged to have washed up on the coast of France (ADM 354/128/81). The *Daily Gazetteer* of 5 November 1744 informed its readers that "They write from Paris, that they have had an Account from the Coast of Normandy, of a great Wreck coming on Shore there, suppos'd to be of some large Ship lost upon the Caskets; whence it seems highly probable, to be the Remains of the *Victory*." Substantial structural components of the ship reaching France would be incompatible with a wreck spot off the Casquets. At the very least, these descriptions reflect how the rumor mill went into overdrive after *Victory's* loss and generated

mixed and inaccurate data.

Secondly, the *Amsterdamsche Courant* of 23 October 1744 reported that "some will have it that it [*Victory*] perished on the coast of Guernsey, others, which represent the most common feelings, that it drifted into the wrong Channel [the Bristol Channel], which today drove up the premium on the insurance of this ship to 15 percent." Meanwhile, *The Daily Advertiser* of 13 October 1744 asserted that "It is generally agreed that Sir John Balchen, in the *Victory*, is drove upon the Coast of Ireland." These reports again reflect general confusion about the location of *Victory's* demise, and give the first clue that a valuable cargo warranting insurance might have been aboard the ship (see Section 12 below), since warships themselves were not insured.

Thirdly, a faded letter in the Public Records Office, written by Thomas Wilson of the *Deal* on 17 June 1745, reported that despite officially searching for the wreck of the *Victory* on behalf of the Admiralty, she could not be located: "On Thursday last of sailed out of Downs in company with her Majesty's ship *Deal*" and "proceeded to Farley and notwithstanding we had faire weather" and though managed to make "marks bearing and distances for Eight Low Watters could see nothing of your mast... with being conceded under watter or Broke away. Shall leave it to youre Honours better judgment..." (ADM 106/153/255).

Finally, it is not inconceivable that some of the wreckage found around the Channel Isles possibly derived from other Royal Navy warships forced to jettison material during the same storm.

The fact that the *Victory* has eluded the most ardent of surveyors off the Channel Isles, including salvors, fishermen and divers (Ovenden and Shayer, 2002: 22), suggests that the final resting place of the wreck was always likely to lie in a less conspicuous location than the shallow, accessible outcrops surrounding the Casquets. The lack of visual reports of her 100-110 cannon, in addition to the absence of any durable wreckage, notably virtually indestructible ballast and pottery, is suspicious in retrospect.

Based on a letter from Admiral Stuart (ADM 1/909) of 13 October 1744, confirming the last sighting of *Victory* by other warships in her fleet at approximately 30 leagues southeast of the Isles of Scilly, Odyssey Marine Exploration's discovery of Site 25C suggests that the warship actually foundered shortly after and not far from the location where her sails were last sighted.

8. HMS *Victory*: Construction

The first timbers for HMS *Victory* were laid down on Portsmouth dock on 6 March 1726, the final year in the reign of King George I. She was nominally a rebuild from the *Royal James*, which was renamed *Victory* in 1691

before being burnt in an accident and dismantled in 1721 (Colledge and Warlow, 2006: 300, 374). What this meant in practical terms remains undefined because the concept of the rebuild was very flexible and could include no re-cycled timbers, just the need for a replacement vessel replicating the former vessel's architectural lines.

After spending 11 years in dry-dock being constructed – four years more than she ever spent at sea – HMS *Victory* was finally launched on 23 February 1737 (ADM 106/899/198; Fig. 43). She followed in illustrious footsteps, with her 42-gun forerunner battling the Spanish Armada (Ballantyne and Eastland, 2005: 31). Sources disagree about the number of warships named *Victory* that preceded her. Excluding the *Victory* prize ship captured between 1663 and 1667, the fifth-rate, 28-gun *Little Victory* built in Chatham in 1665, the fifth-rate French prize *Victoire* captured in April 1666, and the eight-gun schooner based on the Canadian lakes and burnt down in 1768, the *Victory* launched in 1737 was the fifth and penultimate warship to bear this famous name (Colledge and Warlow, 2006: 373-4; Lavery, 1987: 158, 161, 165, 170; Lyon, 1993: 11, 17, 39, 62).

Victory was built by master shipwright Joseph Allin and cost £38,239 to assemble, plus £12,652 fitting as a flagship. Her dimensions and cannon armament (Winfield, 2007: 4) were:

- Length: 174 feet 9in
- Width: 50 feet 6in
- 1,921 tons
- 850 men
- Lower deck guns: 28 x 42-pounders
- Middle deck guns: 28 x 24-pounders
- Upper deck guns: 28 x 12-pounders
- Quarterdeck guns: 12 x 6-pounders
- Forecastle guns: 4 x 6-pounders

The French master shipwright Blaise Ollivier personally examined *Victory* in her dock at Portsmouth in 1737, described the heights between decks, and wrote a detailed account of her disposition (Roberts, 1992: 126-7, 129), announcing that:

“The ship of 100 guns called the *Victory* which they are building in one of the dry-docks at Portsmouth has the same length, the same breadth and the same depth in the hold as the Royal Sovereign. She has 14 gunports on either side of the gundeck, 15 gunports on the middle deck and on the upper deck, 3 on the fore-castle, 7 on the quarter-deck and 2 on the poop... The midship bend of this ship is rounded; her floors are full and have a fair run; she has great fullness at her height of breadth; her capacity is very great, yet her upper works are scarce suitable for her lower body, for she is deep-waisted with much sheer.”

Elsewhere, he reported that HMS *Victory* was the only English ship of 100 guns with 15 gunports in the upper deck (Roberts, 1992: 150): the fifteenth port was situated aft between the side counter timber and perpendicular, corresponding to the aftermost gunport on the gundeck. All other Royal Navy warships had 14 gunports. Another unique design feature of *Victory* was the construction of galleries in the poop-royal (Figs. 43-44), which uniquely gave her four tiers of windows, four rows of lights and three elaborately decorated open galleries (Lavery, 1983: 79).

One of several inaccuracies surrounding the loss of HMS *Victory* in 1744 was the size of her crew. The full company of men on-board when she foundered, listed as 880 in her final pay book (ADM 33/380), may be incomplete. The most common figure cited places the number of men lost at 1,100 (*Biographical Magazine*, 1776: 133), which may include marines, soldiers and volunteers not entered into the pay book, but recorded in other documents. Some propositions for the size of *Victory*'s crew rise to an implausible 1,400 men.

9. Naval Operations

After departing dry-dock, *Victory* was commissioned under Captain Thomas Whitney in 1740, with Samuel Faulkner as second captain. Following provocations by Spain and piratical seizures by her privateering nationals, Sir John Norris assumed control of *Victory* at the head of the Channel fleet on 16 July 1739. With 16 warships, Sir John set out to destroy the Spanish navy (Charnock, 1795a: 356-7). Following the death of Whitney, Faulkner took command as captain in December 1741, before *Victory* became Sir John Balchin's flagship in July 1744 after the retirement of Norris that year (Winfield, 2007: 4).

Despite being considered the largest ship in the navy (Charnock, 1795b: 159) and the finest ship in the world (Clowes, 1966: 108; Dafer, 2001: 22), *Victory* never participated in a major battle and was strangely absent from the only great engagement of her era, the Battle of Toulon on 11 February 1744, when 40 English men-of-war confronted Navarro's Spanish fleet and French warships under De Court (Richmond, 1920: 21; Winfield, 2007: x-xi).

When *Victory* did finally start to punch her weight, she was fighting more for commercial domination than land and liberty. With the opening up of the Indies and Americas, fortunes were being made, and as a pamphleteer of 1672 acknowledged, “The undoubted Interest of England is Trade, since it is that alone that can make us either Rich or Safe, for without a powerful Navy, we should be a Prey to our Neighbours, and without Trade, we could have neither sea-men or Ships” (Rodger, 1998: 172).



Fig. 43. A contemporary full hull model of the *Victory* (1737), probably assembled at the Royal Naval Academy in Portsmouth Dockyard. Photo: © National Maritime Museum Greenwich, SLR0449.

The volume of Britain's imports and exports reflected a burgeoning home market and southern England's strategic commercial role as the European center of re-export. British sugar imports rose steadily from 8,176 tons in 1663 to 25,000 tons by 1710. Whereas tea imports to England accounted for £8,000 in 1699-1701 and £116,000 in 1722-24, by 1752-4 they would escalate to £334,000 (Price, 1998: 81). In return, home-grown exports such as woolens, linens, cottons, silks and metal wares to America and Africa were valued at £539,000 in 1699-1701 and £122,000 to East India, but by 1751-54 had leapt to £1,707,000 to America and Africa and £667,000 to East India (Rodger, 1998: 87, 100, 102). The War of Jenkin's Ear against Spain in October 1739, which escalated into the War of the Austrian Succession in 1744, would be dominated by the protection of trade routes.

The most important development in strategic naval thinking in the 18th century was the establishment in the 1740s of the Western Squadron, which guarded the English Channel by maintaining the main fleet out windward in the Western Approaches. Neither France nor Spain had a naval base in the Channel, so any enemy fleet had to come from the west, with an invading force sailing from the ports of Normandy and Brittany. The

very real threat of invasion hung constantly in the air. On 3 February 1744, the French fleet did fight ill winds to penetrate the Channel as far as the Isle of Wight, only to be repulsed back to Brest by a large fleet commanded by Admiral Norris on the *Victory* (Charnock, 1795a: 360).

The Channel was England's frontline. Since most of Britain's foreign trade came up and down the Channel, the ever-cruising fleet was also perfectly placed to cover convoys outward and homeward bound, to watch the main French naval base at Brest and to intercept fleets (Harding, 1999: 185).

It was tied to this strategy that HMS *Victory* was operating in 1744. On 23 April, Sir Charles Hardy had left Spithead at the head of a great convoy protected by the *Victory*, *Duke*, *Sandwich*, *St. George*, *Princess Royal*, *Cornwall*, *Shrewsbury* and *Princess Amelia*, as well as the frigates *Preston* and *Roebuck*. The merchant vessels under his watch held vital victuals and supplies bound for the Mediterranean. Hardy was charged with taking the convoy clear of Brest and its notorious fleet, from where the two frigates would accompany it alone on to Admiral Thomas Matthews at Gibraltar. Matthews was Commander-in-Chief in the Mediterranean and the victuals were essential to provision the allied forces, whose supplies had run dry at the start of April.

The English flotilla arrived at Lisbon on 3 May, and after seeing the convoy safe into the river Hardy headed home, arriving back at Spithead on 20 May (Richmond, 1920: 86, 94). The victualling convoy, however, never made it through the Straits of Gibraltar, but ended up blockaded at Lisbon in the River Tagus by the Brest fleet under the command of de Rochambeau.

With Sir John Norris retired from service, the Royal Navy found itself devoid of experienced admirals suitable of commanding the fleet, and so turned to the remarkable figure of Admiral John Balchin. As of 13 March, aged 74 and following 58 years of service, Balchin was just beginning to enjoy his own retirement and the more relaxed post of Master of His Majesty's Hospital at Greenwich (*The London Gazette*, 13 March 1744).

On 14 July 1744, Sir John, Admiral of the White and newly knighted earlier in the year, was put at the head of a strong squadron of 25 English and eight Dutch warships. Balchin's mission was multi-phased. He was charged with escorting up the Channel a convey of 200 merchant vessels setting out for Newfoundland, New England, Virginia, Maryland, Portugal and the Mediterranean and to see all outward bound trade 100 or 150 leagues into the sea or what seemed safe based on the latest intelligence (Tindal, 1787: 111).

Afterwards, he was required to liberate the victualling convoy intended for Admiral Matthews, which had now been without supplies for three months. The situation was becoming serious enough to turn the entire War of the Austrian Succession in favor of France: the whole campaign in Italy depended on the co-operation of the fleet and, without supplies, the Royal Navy could not aid the allies and the cause with Austria would be lost. Simultaneously, Balchin was to seek intelligence on the strength and movements of the enemy, the number of ships in Brest and the other ports of western France or at sea and to assess their movements. After a six-week cruise, Balchin was to return to Spithead (Richmond, 1920: 104, 108).

If Balchin sighted the Brest fleet, he was given license to blockade it through fears of a pending invasion of England, but was otherwise hoping to clear the English Channel of privateers, an objective that would eventually bear fruit personally around 9 August, when the admiral captured eleven large French San Domingo ships on the way to Lisbon (Richmond, 1920: 107; see Section 12 below).

Meanwhile, the entire elusive Brest fleet had slipped out of port in twos and threes and by 15 July was grouped into 17 sails of 40-70 guns. On 13 August, Balchin learned from Captain Henry Osborn of the *Princess Caroline* that the French were cruising in two strong divisions off Lisbon and Cadiz, the former under de Rochambeau still blockading Matthews' Mediterranean convoy and

the latter covering de Torres' long delayed return from the West Indies. On 24 August, the Admiralty ordered Balchin (Richmond, 1920: 109) "to proceed immediately with the English and Dutch ships under your command off the Rock of Lisbon and to take from thence along with you the said victuallers and storeships as also Captain Osborn and all his majesty's ships of war under his command, and proceed with them to Gibraltar."

Having anticipated these developments, Balchin had already made his way south, arriving off the River Tagus on 30 August, immediately liberating the victuallers and escorting them to Gibraltar. The French squadron of 12 ships retreated to Cadiz with Balchin in hot pursuit and blocking the fleet in port. As *The Daily Advertiser* of 5 September proudly reported back home, "Yesterday it was reported, that the Fleet under Sir John Balchen had fallen in with the Brest Squadron, and that after exchanging a few Broad-sides with each other, the latter thought proper to make off."

By 27 September, the English received word that the center of gravity of Mediterranean maritime operations was being transferred from the Gulf of Lyons and west of Italy to the Straits of Gibraltar, where the entire French and Spanish fleet was converging on Cadiz. Balchin's orders were now clearly focused on eradicating the French naval threat (Richmond, 1920: 112), with the Admiralty ordering that:

"If the Brest squadron shall have joined the French and Spanish squadrons in the Mediterranean... you are, when joined by Vice Admiral Rowley, to endeavour to attack them and to take, sink, burn or otherwise destroy them. And when that service is performed you are to leave a sufficient strength of the fittest and cleanest ships in the Mediterranean under the command of Vice Admiral Rowley and return with the rest to England."

As history would unfold, this final command never reached Balchin. On 9 September 1744, as the admiral took up position to blockade Cadiz and look out for enemy ships arriving from the west, Admiral Grave, the Dutch Commander-in-Chief, informed him that his ships were low on provisions and water. Without the Dutch, Balchin's 17 warships would have been forced to confront 20 enemy craft. So Balchin agreed to accompany the whole fleet home to Spithead.

The 74-year-old admiral left the coast of Galicia on 28 September, but shortly after entering the English Channel on the 3 October a dreadful storm arose, which dispersed the fleet. The *Exeter* lost her main and mizzen mast and was forced to jettison 12 cannon. All of the *Duke's* sails were torn to pieces and her hold under 10ft of water (Beatson, 1804: 228; Tindal, 1787: 112). As *The London Gazette* of 6-9 October 1744 chronicled,

“Letters from Vice-Admiral Stewart, dated the 7th and 8th Instant, give an Account of his Arrival at Spithead, with all the English and Dutch Men of War of Sir John Balchen’s Squadron (except the Admiral’s own ship) having seen the Victuallers and Store-Ships, which lay at Lisbon, safely into the Streight’s Mouth. Sir John Balchen’s ship separated from the rest of the Squadron, in a hard Gale of Wind, in the Mouth of the Channel.” Despite the dangers, only the *Victory* and her entire crew were never heard of again.

10. Admiral Sir John Norris

Victory was associated with two of England’s most experienced and accomplished commanders. From lowly beginnings as a servant on the *Gloucester Hulk* in 1680 to becoming Admiral of the Fleet in 1743, the highest rank in the Royal Navy, Sir John Norris (Fig. 45) climbed every rung of the maritime ladder during his 54 years of service (cf. Aldridge, 2000; Charnock, 1795a; *The Georgian Era: Memoirs of the Most Eminent Persons who have Flourished in Great Britain, Volume II*, London, 1833, 158-61).

Down the decades, Norris would command over nine warships and earn an uncompromising reputation for having “a natural warmth of temper, which sometimes betrayed him into an extravagance of conduct scarcely to be palliated, and still less defended” after drawing a sword in August 1702 on Captain Ley during a private dispute on the quarter-deck of the *Royal Sovereign* (Charnock, 1795a: 344).

This quality had little long-term effects on Norris’ career as his strong character and courage made him many friends in high places. From the moment of joining the *Sapphire* in February 1681, he would enjoy the support of its commander, Sir Cloudesley Shovell, who was making his own strides towards becoming Commander-in-Chief of the British Fleet. Once he tamed his temper, Norris reinvented himself as a fine negotiator in diplomacy. In 1717, he was appointed in a civil capacity envoy extraordinaire and minister plenipotentiary to the Czar of Muscovy, and between March 1718 and May 1730 served as commissioner for the executing office of the Lord High Admiral. In 1723, Norris convoyed King George I from Helvoetsluys to England and in 1730 entertained the King of Sweden on the *Cumberland* in the Baltic.

Norris would gain extensive experience overseas, serving in Newfoundland in 1692 and 1697 as commodore, and between December 1708 and 1730 commanding various squadrons in the Baltic to secure Britain’s interests in the timber trade from the threat of Sweden and Peter the Great (Kennedy, 1976: 89). Imports of naval stores such as hemp, Stockholm tar, wooden planks and masts from the Baltic increased four-fold between 1688

and 1714 (Rodger, 2004: 191).

Norris made his fortune relatively early in life. For seizing two French frigates in 1690, he earned £1,000 in prize money. Five years later onboard the fourth-rate *Carlisle* between Pantellaria and Tunisia, he captured the French *Content* and shared in its prize value. En route to Newfoundland and during two cruises after arriving in 1697, Norris took several further prizes worth over £40,000. Finally in 1705, he was appointed to command the *Britannia* in support of the cause of Arch-duke Charles in the Mediterranean fleet under his old, powerful friend Shovel. Norris’ attack on Fort Montjicoc so impressed the Arch-duke that he was recommended in correspondence to Queen Anne, honored with a knighthood and presented with 1,000 guineas.

From 10 March 1707, when he was promoted to Rear-Admiral of the Blue, to 1710, Norris made rapid promotion: Rear-Admiral of the White in January 1708, Vice-Admiral of the White in the same month, Vice-Admiral of the Red in December 1708, Admiral of the Blue in November 1709 and in 1710 he became Admiral-in-Chief in the Mediterranean. Norris would have to wait 22 more years until being elevated to Admiral of the White in January 1732 and Vice-Admiral of Great Britain that April. In 1743, he achieved the greatest honor in the Royal Navy, Admiral of the Fleet, the highest rank in the service.

Norris served on *Victory* throughout his later career, most notably at the head of 16 warships in the Channel fleet against Spanish pirates on 16 July 1739. His bold reputation was confirmed in February 1744, when from the Downs on *Victory* at the head of a fleet of 25 Royal Navy warships and 24 frigates he forced back to Brest the French that had pierced the Channel as far as the Isle of Wight (SP 36/63) – with a little help from a sea storm that wrecked and grounded part of the invading fleet assembled at Dunkirk (Beatson, 1804: 42, 173). Appropriately, this act of heroism was the last time that Admiral Sir John Norris commanded a warship.

In March 1744, having served for 54 years, Norris requested permission from George II to relinquish command of the Channel, stating that he had “served the Crown longer as an admiral than any man ever did...” The king accepted his decision (ADM I/4112). Despite his nickname of ‘Foul-Weather Jack’, so called because superstitious sailors foretold a storm every time the commander took to the sea, the timing of his departure from active service would prove prophetic in relation to *Victory*’s downfall that year. His memorial in a church at Hempsted Park recalls that “there never breathed a better seaman, a greater officer, a braver man, a more zealous Wellwisher to the present Establishment, nor consequently a truer Englishman, than this Sir John Norris” (Aldridge, 1965: 173, 182).



Fig. 44. 'The Loss of HMS Victory, 4 October 1744', by Peter Monamy (18th century).
Photo: © National Maritime Museum, Greenwich, BHC0361.



Fig. 45. Sir John Norris, Admiral of the Fleet, by George Knapton, c. 1735. Photo: © National Maritime Museum, Greenwich, BHC2912.



Fig. 46. Admiral Sir John Balchin, commander of HMS Victory when she was lost on 5 October 1744; by Jonathan Richardson, c. 1695. Photo: © National Maritime Museum, Greenwich, BHC2525.

11. Admiral Sir John Balchin

After Norris' timely retirement, the longest serving naval commander of his age replaced him (Fig. 46). Born on 2 February 1670, John Balchin took a commission in the Royal Navy aged 15.⁶ By the time he retired in 1744, Sir John had dedicated 58 years of service to the Royal Navy – 34 more years than Nelson. His life and deeds are predominantly chronicled in four sources: the *Biographical Magazine* (1, 1776: 132-34), *The Lives of the British Admirals, Part 1* (London, 1787), J. Charnock's *Biographia Navalis* (London, 1795), and L. Stephen (ed), *Dictionary of National Biography Volume III* (London, 1885). Complementary facts are also present in the English newspapers, notably *The Daily Advertiser* and *Penny London Post*. Sir John Balchin's full timeline is provided in Appendix 1.

From working the waters of the West Indies to twice being captured by the French and exonerated during court martial, Balchin would command 13 warships. On 12 October 1702, on the *Vulcan* fireship he participated in the capture and burning of French and Spanish ships at Vigo in the War of the Spanish Succession and between 1703 and 1707 got his first taste of patrolling the English Channel and North Sea on the *Adventure* and *Chester*.

In October of that year, after a brief station along the Guinea coast, Balchin was part of a small squadron convoying a fleet to Lisbon, including a thousand horses for the campaign in Spain, which was captured in the Channel by the French force of Forbin and Duguay-Trouin. Exchanged in September 1708, Balchin returned to England on parole, but was fully acquitted by a court-martial on 27 October.

In August 1709, he was appointed to the *Gloucester*, a new ship of 60 guns when lightning struck twice. Just after clearing land off Spithead on 26 October 1709, Balchin was again captured by Duguay-Trouin and tried that December by court-martial for the loss of the *Gloucester*. Balchin's warship was found to have taken on Duguay's own ship, the 74-gun *Lis*, for more than two hours, while another fired at her and three other ships prepared to board her. *Gloucester's* foreyard was shot in two, the head-sails were rendered unserviceable, and she had received great damage to the yards, masts, sails and rigging. The court concluded that Captain Balchin had discharged his duties valiantly and fully acquitted him.

Between 1710 and 1715, Captain Balchin was appointed to the 48-gun *Colchester* for Channel service and cruised between Portsmouth, Plymouth and Kinsale for almost five years. In February 1715, he transferred to the 40-gun *Diamond* for a voyage to the West Indies and the suppression of piracy. Balchin started sailing new waters in 1717, commanding the *Orford* in the Baltic

under Sir George Byng. A year later he captained the 80-gun *Shrewsbury* off Sicily in the defeat of the Spanish under Sir George, before accompanying his own noble predecessor, Sir John Norris, into the Baltic on the 70-gun *Monmouth* in the three successive summers of 1719, 1720 and 1721, once more in 1727, and with Sir Charles Wager in 1726.

Balchin was dispatched to Cadiz and the Mediterranean in 1731 on the *Princess Amelia* as second-in-command under Sir Charles Wager to take possession of Leghorn and place Carlos on the throne of Naples. In the war against Spain in 1740 he commanded a squadron of six sails in the Mediterranean sent without success to intercept the homeward-bound Spanish fleet of treasure ships returning from Vera Cruz to Spain. Later that year, Balchin commanded the squadron in the Channel.

A Post Captain by the young age of 27 in the Nine Years' War, he made commander by 1701, Rear-Admiral of the Blue in 1728, Rear-Admiral of the White a year later, Rear-Admiral of the Red in 1732 and Vice-Admiral of the White in 1734. In 1739 Balchin was appointed Vice-Admiral of the Red and was promoted to Admiral of the White on 9 August 1743.

After retiring in March 1744, knighted, and given command of Greenwich Naval Hospital, he was rushed back into service two months later after Sir Charles Hardy's victualling convoy with vital naval supplies for the Mediterranean fleet was blockaded by the French down the River Tagus at Lisbon. Having dispersed the Brest fleet of de Rochambeau and captured at least 11 prizes, Balchin was en route back to England when the *Victory* was caught in a violent storm in the English Channel on 3 October. Aged 74, the greatest commander of the period perished with at least 880 men and the finest warship in the world, allegedly off the Casquets near Alderney.

King George II recognized Balchin's heroic service to king and country by settling a pension of £500 a year on the admiral's wife for the duration of her lifetime (*The Biographical Magazine*, Vol. I, 1776). His deeds were also commemorated and memorialized by the erection of an elegant monument in Westminster Abbey, executed by Peter Scheemakers in fine marble, displaying a bust of Sir John surrounded by a sarcophagus, flanked by naval trophies, the Balchin family arms and an anchor above a scene of the commander battling storm waves. An inscription beneath this bittersweet scene reads:

"To the Memory of Sr JOHN BALCHEN Knt. Admiral of the White Squadron of his MAJESTY'S Fleet Who in the Year 1744 being sent out Commander in Chief of the Combined Fleets of England & Holland to cruise on the Enemy was on his return Home in his MAJESTY'S Ship the VICTORY, lost in the Channel by a Violent Storm, From which sad Circumstance of his Death we may learn that neither the greatest Skill, Judgement or Experience

join'd to the most firm unshaken resolution can resist the fury of the winds and waves, and we are taught from the passages of his Life which was fill'd with Great and Gallant Actions but ever accompanied with adverse Gales of Fortune, that the Brave, the Worthy, and the Good Man meets not always his reward in this World. Fifty Eight Years of faithfull and painful Services he had pass'd when being just retired to the Government of Greenwich Hospital to wear out the Remainder of his Days, He was once more, and for the last time call'd out by his KING & Country whose interests he ever preferr'd to his own and his unwearied Zeal for their Service ended only his Death which weighty misfortune to his Afflicted Family became heighten'd by many aggravating Circumstances attending it, yet amidst their Grief had they the mournful Consolation to find his Gracious and Royal Master, mixing his concern with the General lamentations of the Publick, for the Calamitous Fate of so Zealous so Valiant and so able a Commander, and as a lasting Memorial of the Sincere Love and Esteem born by his Widow to a most Affectionate and worthy Husband, this Honourary Monument was erected by Her."

History records that Sir John Balchin was an admiral of great experience, sound judgment, tenacious memory and intrepid courage. Having fought for the rights of the humble seaman, he was especially popular below decks. By his own testimony, his greatest pleasure in his life was the honor of the British flag. His notorious reputation as a brilliant commander and dangerous foe was recognized internationally, to such an extent that the enemy dreaded even the name of the ship which Balchin commanded. Upon his tragic death, "The whole nation expressed a deep and generous concern for this terrible misfortune" (*The Lives of the British Admirals, Part 1, London, 1787, 33*).

12. HMS *Victory* – Prizes & Bullion

The movements of HMS *Victory* off Lisbon and Gibraltar between mid-August and late September 1744 are only chronicled in broad terms. Various historical accounts, however, leave no doubt that Sir John Balchin actively sought out prizes during his final mission, which was standard practice for Royal Navy commanders, but also may have taken on a commercial venture for the personal gain of himself and his crew. Specific and circumstantial historical sources indicate that Balchin engaged in the recognized practice of carrying merchants' specie back to England. Lisbon was the bullion capital of Europe and the Mediterranean world, its commerce and currency were blockaded in port, and Balchin would have welcomed the chance to profit from his last command, adding a significant measure of wealth to his retirement fund.

In peacetime, bullion was predominantly ferried from Lisbon to Falmouth in English packet-boats in the regular postal service. For instance, 61 consignees sent £28,844 to Falmouth by packet-boat on 2 January 1741 and by 1764-69 these vessels carried an average of £895,061 bullion annually. The currency transported consisted mainly of Portuguese coin, predominantly gold *moedas* minted from the mines of Brazil, but also some silver *crusados* (Fisher, 1971: 95, 99, 103).

Shipments of gold to England were an open secret, with bills of lading signed at the Public Coffee House in Lisbon, leading an English Envoy in 1734 to criticize merchants who publicly discussed shipments and “with as little Secresie send it on board, as they do a Chest of Oranges” (Tyrawly to Newcastle, 17 April 1734; SP 89/37). By 1742, the single, double and quadruple *moedas* was so prevalent in Britain that it was renowned as “in great measure the current coin of the Kingdom” (Vallavine, 1742).

The prospect of profitable freights to England encouraged warships to pass by Lisbon for little other strategic reason, and Royal Navy captains and commanders had a track record of involvement in the bullion trade. Sir John Norris, the *Victory*'s former commander, certainly participated in this commerce. As Milner, the English consul in Lisbon, wrote to the Lord Treasurer on 19 October 1711, “The fleet wth Sr John Norris... carried away large sums, several houses sending twenty to forty thousand pd a house & all some” (SP 89/21). Three years prior to the *Victory*'s loss, Lord Tyrawly advised that “there is not an English Man of Warr homeward bound from almost any Point of the Compass that does not take Lisbon in their Way home... every Body knows that [they] have no other Business in life here but to carry away Money” (Tyrawly to Newcastle, 7 January 1741, SP 89/40).

In 1758, the English consul to Lisbon observed that “the Merchants here would always give preference to Ships of Warr... for the Freight of... Specie home” (Franklin to Pitt, 20 August 1758; SP 89/51). Because of the perceived guarantee of security, warships could charge freight of 1% of the transported bullion's value, as opposed to 0.25-0.5% charged by the Falmouth packets. As H.E.S. Fisher emphasizes in *The Portugal Trade. A Study of Anglo-Portuguese Commerce 1700-1770* (London, 1971: 99), “From Lisbon bullion was also shipped on homeward-bound English men-of-war, both frigates and ships of the line. Strongly armed as well as possessing diplomatic immunity from search, they were almost ideal for bullion carriage and it was in fact common for captains to supplement their incomes in this way.”

No ship in the world would have been considered a safer transport in 1744 than the *Victory*. After the lengthy French blockade of the River Tagus, there was undoubtedly a backlog of bullion shipments in

Lisbon, and merchants would have welcomed an offer by Balchin for safe transport to England.

The onset of war and the danger of transport compounded the demand for willing warships to enter this commercial maritime arena. Without them, the economy would have frozen up: during the War of Austrian Succession, for instance, a merchant fleet and its escorts from England were delayed by nearly a year. In July 1740, English houses of commerce in Lisbon had received no supplies from England for nine months, with the result that their warehouses were “quite drained of all sorts of Goods particularly the Woolen” (Tyrawly to Newcastle, 23 July 1740; SP 89/40).

Between 1743 and 1744 exports of general commodities to Portugal fell from £1,145,000 to £889,000 and imports from Portugal to England declined by a half from £466,000 to £212,000 (Whitworth, 1776: 27-8). By 1745-6, England was witnessing a period of severe financial crisis.

The notion that Sir John Balchin, plucked out of retirement at the tender age of 74, chose to profit from his presence in Lisbon, seems to be confirmed by the *Amsterdamsche Courant* of 18/19 November 1744, which describes how a huge sum of money was being carried by his flagship when she foundered: “People will have it that on board of the *Victory* was a sum of 400,000 pounds sterling that it had brought from Lisbon for our merchants.” This would equate to approximately 4 tons of gold coins. The presence of this high-value commercial cargo presumably explains why the *Amsterdamsche Courant* of 23 October reported that concerns over the disappearance of the *Victory* “today drove up the premium on the insurance of this ship to 15 percent.” Warships *per se* were not insured; only the carriage of a commercial cargo would warrant such a development.

Research indicates that merchants' bullion from Lisbon was probably not the sole high-value cargo on *Victory* when she was wrecked. The seizure of prizes was rife across Europe in the 18th century. By the Convoys and Cruizers Act of 1708, the net sum of any prize was divided by eight. The captain of the capturing ship received three-eighths, but if operating under orders, then one of those eighths went to the flag officer, presumably the admiral: flag officers generally ensured that ships in their fleet operated under their direction. Another eighth was divided equally amongst the lieutenants, the captain of the marines and the master. A further eighth went to the warrant officer, boatswain, gunners, carpenters, purser, chaplain, surgeon, master's mate, junior officers and the quartermaster. The petty officers – boatswain's mate, gunner's mate and tradesmen (caulkers, ropemakers, sailmakers) – received a further eighth, while the remainder was split between the rest of the crew (Hill, 1998: 201; Rodger, 2004: 522).

Since the start of war with France in March 1744 and 14 August that year, English ships had taken £3 million worth of prizes (*Daily Post*, 20 August 1744). Towards the end of August 1744, Balchin successfully captured over a dozen prizes, a significant percentage of the sale of which would have gone into his own estate should he have survived the storm of 5 October. An added professional incentive for the admiral was the legal stipulation that the monetary shares of any officers and seamen who went absent without leave, as well as those officers, seamen, marines and soldiers who failed to make a claim within three years, had their prize money forfeited to the Royal Hospital at Greenwich, where Balchin was governor (Horne, 1803: 70). For Balchin, prizes made both personal and professional good sense.

Some of the commodities seized were relatively basic. *The London Gazette* of 21-25 August 1744 reported how under Balchin's orders the *Hampton Court* and a Dutch warship escorted six French prizes bound from Cape François and St. Domingo in to Spithead on 22 August. The prizes contained cargoes of sugar, indigo and coffee. However, this source fails to provide the complete picture. *The Daily Advertiser* of 23 August 1744 contributes the following facts: "Letters from on board the *Sunderland*, Man of, belonging to Sir John Balchen's Squadron, dated the 18th instant, in the Latitude 45.56, mention, that they had taken six Ships from Martinico, and were in Pursuit of four more, which they were in Hopes of coming up with; and that Ship which the *Sunderland* boarded had a great Quantity of Money on board..." Within a few days Balchin took five more French Ships from Martinico, which were escorted into Portsmouth (*The Daily Advertiser*, 27 August, 1744).

Supplementary details of what Balchin's officers recovered from these French prizes appeared in *The Penny London Post* of 31 August - 3 September, which gleefully announced how "In rummaging the *Tessier*, a Martinico Ship, taken by the *Hampton Court* and the *Chester Men of War*, there have been found conceal'd in the Ballast 28,000 Dollars and two Casks of Gold, reckon'd 25,000 l." Similarly, "On examining the *Le Lux del Francis*, a French Prize, taken by his Majesty's Ships the *Dreadnought* and *Hampton Court*, there was found conceal'd in the Ballast five Bags of Dollars, valued at 12000l" (*The Penny London Post*, 17-19 September 1744). Both the *Dreadnought* and *Hampton Court* were part of Balchin's fleet that had accompanied him down to Lisbon (Richmond, 1920: 106). *The London Evening-Post* of 4-6 September received further information that "We hear there were found on board one of the St. Domingo Ships, that struck to the Dutch Men of War along with Admiral Balchen, above 60,000 Pieces of Eight."

Despite the time lag between these three dispatches reaching London, it is reasonable to presume that all of

the French vessels were part of the same Martinico convoy. The historical veracity of Balchin's fleet capturing so many high-value prizes is born out by the swift reaction of Holland, which dispatched Commodore Baccherst to London to represent the Dutch squadron sailing with Sir John Balchin's fleet and to settle a dispute about the taking of the Martinico ships (*The Daily Advertiser*, 31 August 1744). The Dutch were evidently not willing to be squeezed out of their entitlement to a share of the prize money.

Alongside these 11 prizes, Balchin's fleet – presumably under his orders – also captured two other enemy craft. The *Jersey* took two Spanish ships bound from Bordeaux to Toulon and carried them to Gibraltar (*Daily Post*, 3 September 1744), while on 28-30 August *The London Evening-Post* informed its readers that "The *Princess Amelia*, Capt. Jandine, took a French Felucca of Malta, bound for the Streights from the Levant, who took out 1,000 l. in Specie; and the Ship, ransomed for 70,000 Livres, is since taken by the *Oxford Man of War*."

The possible magnitude of the windfall to which Sir John Balchin was entitled lies beyond the parameters of this paper, but it is conceivable that the extremely generous sum of £500 that King George II bestowed on the admiral's wife as an annual pension (*The Biographical Magazine*, Vol. I, 1776) took this financial situation into consideration. What is of immediate concern to the shipwreck of *HMS Victory* is the destination of the specie. The fact that *The London Gazette* of 21-25 August only referred to cargoes of sugar, indigo and coffee amongst the prizes brought home by the *Hampton Court* correlates with the assumption that the large sums of money cited above did not accompany her. If they had, this fact would have been loudly trumpeted in the press.

Any specie or bullion from Lisbon, or other valuables and prize money that might have been seized or carried on a commercial basis, would have undoubtedly been taken aboard the *Victory* – the largest floating strongbox in the Royal Navy. Such entrepreneurial ventures rarely entered the annals of formal book-keeping in the first half of the 18th century. Ultimately, the enigma of Admiral Balchin's high-value cargo will only be confirmed through excavation of Site 25C.

13. The Loss of HMS *Victory* – Poor Design or Ill Winds?

From the very beginning of her life, *HMS Victory* had a reputation for being "very high-sided and consequently 'leewardly', a factor which probably contributed to her wrecking" (Winfield, 2007: 4). It is worth reiterating the professional opinion about this first-rate of Blaise Ollivier, Master Shipwright at France's foremost Royal Dock-

yard at Brest, whose undercover visit to Portsmouth in 1737 (Roberts, 1992: 126-7) concluded that “she has great fullness at her height of breadth; her capacity is very great, yet her upper works are scarce suitable for her lower body, for she is deep-waisted with much sheer.” No less a luminary than Sir John Norris, Admiral of the Fleet, who served on *Victory* between 1739 and 1744, also complained that this warship had poor sailing capabilities caused by her height and treble balconies, according to a letter of 14 April 1740 sent by Sir Jacob Acworth, Surveyor of the Navy, to Joseph Allin, Master Shipwright at Portsmouth (Ballantyne and Eastland, 2005: 33).

This reputation certainly stuck to *Victory* through her lifetime and would be identified as the underlying cause of her loss at sea. As Hervey’s early history of the Royal Navy concluded (1779: 258), “The loss of this ship has been imputed to a defect in its construction, and many complaints were at that time made concerning the principles on which the men of war were built, and the conduct of the surveyor general of the navy.” In an almost identical vein, Beatson (1804: 228) agreed that “The loss of the *Victory* has been generally imputed to a defect in her construction, she being reckoned too lofty in proportion to her breadth. Many complaints of a like nature were made about this time, against the principles on which the British ships of the line were then built.”

The problem was supposedly rectified in the build of the *Royal George* in 1752, which was described as “The first attempt towards emancipation from the former servitude”, and was “at that time, deemed the paragon of beauty, and considered as the *ne plus ultra* of perfection in the science of marine architecture” (Charnock, 1800: 138). A contemporary report of the *Royal George*’s sinking off Spithead in 1782, however, suggests that her height remained problematic and her hull somewhat rotten. *A Description of the Royal George With the Particulars of her Sinking* (Portsmouth, 1782) revealed that “The *Royal George* was far from being a sound ship that she could not have rode the seas more than another year. Her timbers had long been rotten, and her whole frame was patched up for present purposes.” One of her carpenters announced that hardly a peg would hold together in her hull.

Even though *Victory* (launched 1737, lost 1744) was far younger than the *Royal George* (launched 1756, wrecked 1782) when she foundered (after seven years compared to 26), the problem of *Victory*’s disproportionate height to width ratio may have been compounded by a similar poor state of health. The severe decay that the British fleet suffered in warships’ timbers in the 1730s and 1740s is an established fact. The general longevity of most ships of line in the 18th century was about 12-16/17 years. Warships including *Victory*, launched between 1735 and 1739, however, enjoyed only an

average of 8.9 years until they required a major repair (Wilkinson, 2004: 76).

Ollivier’s observation, whilst spying on the Royal Navy’s yards when HMS *Victory* was in dry-dock, that the English stored timbers unsystematically, heaping old wood on newly cut planks, thus introducing dry and wet rot into warships, isolated one element of the problem. At Deptford he complained about how the timber “is used with but little care; much of the sapwood is left on, and I saw many frames, timbers of the stern and transoms where there were two or three inches of sapwood already half rotted on one or two of their edges” (Roberts, 1992: 54). The rotting of English men-of-war was compounded by the Admiralty’s failure to act on the Navy Board’s concerns that warships in harbor were not being ventilated around the bulkheads and strakes of gun decks (Wilkinson, 2004: 82-83).

The problematic sourcing of timber for wooden knees is also theoretically significant. During the reign of King George II, the procurement of timber reached crisis levels. Towards the end of the Seven Years War (1756-63), Roger Fisher, a specialist on wood supply, observed that “Indeed, so great has the consumption been that one of the most eminent timber dealers in the county of Sussex now living, has declared to me, that there is not now, as he verily believes, more than one tenth part of the full grown timber, standing or growing, as there was when he entered into business, forty-five years ago” (Marcus, 1975: 12).

This deficiency was not merely a matter of bad management, but one of partial environmental determinism and a failure by the Admiralty to react appropriately. The first 40 years of the 18th century witnessed a succession of mild winters. A sustained positive phase in the North Atlantic Oscillation created unusually high pressure and a strong westerly airflow that resulted in the decadal temperature rising by 0.6 degrees centigrade above normal between 1730 and 1739 – when *Victory* was being built. Consequently, cut timbers contained more sap than in typical growth cycles, making the seasoning process longer if not impossible. Wood was rotting instead of seasoning (Wilkinson, 2004: 85, 88-89).

All of these factors could have had a cumulative effect on the hull of HMS *Victory*, and her service record hints that all was not well with her structure. By October 1744, she had notably suffered numerous accidents and may have been as badly patched up as the *Royal George* would be later. Admiralty records leave the impression that from the start, the construction and operation of *Victory* experienced deep-set problems:

A. In the absence of a Parliamentary vote for shipbuilding during the reign of King George I, the practice of great re-builds along the lines of previous warships pre-

vailed (Rodger, 2004: 412). *Victory* was nominally a re-build of the *Royal James*, renamed *Victory* in 1691, which arguably introduced design flaws from the very beginning by combining old and new shipbuilding principles. After *Victory's* loss in 1744, the Royal Navy notably abandoned the concept of the re-build.

B. The fact that it took 11 years to build and launch *Victory* between 1726 and 1737 reflects the complex logistics involved in constructing such a voluminous first-rate. Oddly, by comparison, the first-rate *Royal George* took just under four years to build and launch. The reasons for the delay – suspicious or not – remain obscured.

C. As early as 4 March 1737, Mr. Ward requested plate to rebuild *Victory* (ADM 106/895/30), which was granted on 17 March 1737 (ADM 108/899/233).

D. The re-fitting of *Victory* for sea on 26 January 1739 (ADM 106/920/38) included the need to insert new large wooden knees (ADM 106/920/80). The request to fell New Forest timber for knees, cheeks and standards for the *Victory* was reiterated on 25 February 1739 (ADM 106/920/94), with correspondence of 28 February confirming that no suitable timber was available (ADM 106/920/99). This suggests that *Victory* required serious repairs within two years of being launched.

E. On 17 April 1739, *Victory* docked for another re-fit for Channel service (ADM 106/920/174).

F. On 18 July 1739, *Victory* lost her head and spritsail yard and anchored off Bembridge Head (ADM 106/921/41). She was taken to Portsmouth to have a temporary figure-head installed (ADM 354/112/137), docking on 24 July (ADM 106/921/57).

G. A warrant for the cleaning and graving of *Victory* for Channel service was issued on 18 February 1740 (ADM 106/938/86).

H. A letter of 4 September 1741 requested the repair of defects in *Victory* (ADM 106/939/121).

I. 2 November 1741, *Victory* was refitted at Portsmouth (ADM 354/116/1).

J. On 25 February 1744, *Victory* was damaged during a fierce storm (SP 36/63), although this comment on the ship's fate was subsequently retracted (SL 36/63). Yet on 28 February 1744, Sir John Norris requested anchor stocks, stoops, bolts and treenails for *Victory* (ADM 106/987/51).

The length of time that *Victory* spent being built, and the reality that re-fits were deemed necessary already in March 1737 (the year she was launched) and January 1739, when new knees had to be inserted, leaves the question of *Victory's* seaworthiness open to debate. In the absence of oak timber of sufficient size and suitability for ship construction, she was almost certainly constructed in part of unseasoned timber. The amount of time she spent in and out of dock would also have compounded any problem of rot, given the above concerns that warships were not being adequately ventilated.

Yet in the final analysis, the height-to-width ratio of *Victory* may have directly been responsible for her downfall. While the rest of the fleet of early October 1744 made it safely home to England, only HMS *Victory* was wrecked. Top heavy, she may have tended to roll amidst the storm waves of the English Channel. Her center of gravity may well have been too high to conquer the elements.

14. Conclusion

All of the available archaeological and historical data clarify that the only possible shipwreck which Site 25C could represent is HMS *Victory*. No other Royal Navy first-rate warship equipped with over 41 bronze cannon featuring the royal arms of King George I, King George II and carrying 42-pounder guns was wrecked anywhere remotely near the English Channel. *Victory* measured 53 x 15m, which fits very closely with the dimensions of Site 25C – 61 x 22m – allowing for collapse and scattered material culture.

Site 25C represents the only scientifically surveyed first-rate Royal Navy warship in the world. Chronologically, *Victory* is the only English man-of-war whose wreck has been surveyed or excavated dating between 1706, when the third-rate, 50-gun *Hazardous* foundered in Bracklesham Bay (Owen, 1988), and 1747, when the fourth-rate, 50-gun *Maidstone* was lost on rocks off Noirmoutier, France (de Maisonroue, 1992). All other 18th-century Royal Navy warship wrecks are third- to sixth-rates: *Fowey* (fifth-rate, lost Florida 1748; Skowronek *et al.*, 1987); *Invincible* (third-rate, lost in Solent 1758; Bingeman and Mack, 1997); *Swift* (sloop-of-war, sunk Patagonia, Southern Argentina, 1770; Elkin *et al.*, 2007); *Sirius* (sixth-rate, lost Norfolk Island, Australia, 1790; Stanbury, 1998); and *Colossus* (third-rate, wrecked on Scilly Isles 1798; *HMS Colossus Survey Report October 2001*; Camidge, 2003; 2005).

The shipwrecked remains of HMS *Victory* can be anticipated to contain a wealth of archaeological data that are capable of addressing numerous key historical issues, including:

1. Final resolution about how, where and why this famous first-rate was lost (poor construction, inferior design, rotten timber?).
2. Exoneration of Admiral Balchin, the captain, officers and crew from the charge that *Victory* foundered on the rocks of the Casquets through faulty navigation. Instead, it is likely that they were victims of an appalling storm, possibly combined with problematic ship design.
3. Exoneration of Guernsey's lighthouse keeper, who was charged with letting the lights go out and of thus contributing to the wrecking of *Victory* (ADM 6/134).
4. Analysis of a critical period in ship construction before the English Navy turned to coppered hulls in 1761 (Marcus, 1975: 8). The two decades after the loss of *Victory* triggered a revolution in shipbuilding philosophy.
5. Recovery of the largest surviving collection of bronze guns and 42-pounders from any warship in the world.
6. A unique window into the life of Georgian society, revealing what exotic domestic ceramic wares the commander and captain used, compared to the crew's everyday dining utensils. The decades preceding the Industrial Revolution witnessed a sharp rise in semi-exotic material consumption within the "middling classes" (Berg, 2007: 32-36). The small finds from the wreck would provide a fascinating vignette of this pivotal era.
7. Closure for the descendants whose minimum of 880 ancestors died in the tragedy of *Victory's* loss, excluding an unknown number of marines and soldiers and 50 volunteers born into Georgian England's noblest families.
8. Recovery of a significant collection of bullion and specie from the period.

The discovery and scientific recovery of HMS *Victory* offer enormous opportunities for archaeological and historical research and mainstream education. At the time of her loss, *Victory* was considered to be the finest and most powerful ship in the world (Clowes, 1966: 108; Dafer, 2001: 22) and her demise had far-reaching consequences on the Royal Navy and public. Bringing the ship – and the life of its officers and crew – back to life will remind the world of the period that launched the greatest naval empire and of the dedication and brilliance of the men that forged that seaborne realm.

Meanwhile, the shipwreck of HMS *Victory* at Site 25C is currently endangered. She lies within heavily exploited fishing grounds, where beam trawlers equipped with iron-toothed dredges plough up the seabed. The

severe impact on the marine ecology is a subject of renowned gravity. Contrary to prevailing perceptions of wreck management that favor archaeological preservation *in situ*, such a policy on Site 25C will result in the wholesale destruction of the contextualized remains of the *Victory*. Research into this shipwreck offers a unique opportunity to secure critical insights into deep-sea site formation processes, degradation histories and the potential for heritage to survive in this heavily used body of water, which will enable future preservation strategies to be developed for other shipwrecks at risk in the English Channel.

The ship has already been ground down to the level of her ballast, well below the lower gundeck. Cannon have been dragged off-site. The human remains of some dedicated gunners, who served *Victory* and lost their lives for England's military stability, run the risk of being crushed by trawlers, ploughed away into oblivion or lost in nets. From both the archaeological and human perspective, this unique heritage – the warship whose loss paved the way for Nelson's iconic *Victory* and the Battle of Trafalgar – deserves and demands to be saved for future generations.

Acknowledgements

The authors wish to extend their sincere gratitude during the June–September 2008 fieldwork season to the vision and support of Greg Stemm (Co-founder and Chief Executive, Odyssey Marine Exploration), Ernie Tapanes and his search team, whose hawk-eyed professionalism identified Site 25C as a special target in the first place, and to the industry and excellence of: Tom Dettweiler, Andrew Craig and Mark Martin (Project Managers); Jesus Perez, Gary Peterson, Eric Peterson (ROV Supervisors); David Dettweiler, Jeff Thomas, Roberto Blach, Jose Rodriguez, Olaf Dieckhoff and Paul Money (ROV Technicians); Jim Gibeaut, Chris Heke, Kris Allen and Ryan Wells (Surveyors); Gerhard Seiffert (Data Manager), Fred Fretzdorff, Dave Kamm and Tom Money (Data Loggers); Ernie Tapanes, Daniel Adams, Kris Allen, Jim Gibeaut, John Graziano, Brett Hood, Tom Money, Jamie Sherwood, Terry Snyder, Ryan Wells and Clay Wolthers (Search Operations); Fred Van de Walle (Chief Conservator).

This article has benefited from early archival research by John Griffith, Mark Mussett, Patrick Lize and Dr David Hebb, and from the comments of Simon Davidson. This report was laid out by Melissa Kronewitter.

For their constant enthusiasm and support at Odyssey Tampa, our ongoing gratitude is extended to Mark Gordon, Laura Barton and John Oppermann. Special thanks are extended to Jason Williams (President, JWM Productions) and the Discovery Channel.

Notes

1. This report is based on primary data collated in the field by and discussed by Neil Cunningham Dobson (Odyssey Principal Archaeologist) in his *The Legend Project. Initial Survey Summary. Site MUN-TIM25C-1* (OME, 2008). The desk-based historical and archaeological research and interpretation was conducted by Dr. Sean Kingsley (Wreck Watch Int., London).
2. <http://www.mfa.gov.uk/news/press/070830.htm>.
3. Anchor A2 and the rudder were exposed during the limited trial trenching and thus are not depicted on the pre-disturbance photomosaic or site plan, which were produced prior to this phase.
4. <http://web.mit.edu/deeparch/www/events/2002conference/papers/Sinclair.pdf>.
5. See *Advisory Committee on Historic Wreck Sites. Annual Report 2006* (2007: 38) and <http://www.english-heritage.org.uk/server/show/ConWebDoc.14031>.
6. The spellings Balchin and Balchen are used interchangeably within the popular and academic literature. Sir Robert Balchin has advised us that the 'e' inaccurately crept into the admiral's name due to his tendency to sign his letters with a flourishing hand, making the 'i' resemble an 'e'. In this report we adhere to Balchin's original spelling as given at birth.

Bibliography

- Aldridge, D.D., 'Admiral Sir John Norris 1670 (or 1671)-1749: His Birth and Early Service, his Marriage and his Death', *Mariner's Mirror* 51 (1965): 173-92.
- Aldridge, D., 'Sir John Norris, 1660?-1749'. In P. Le Fevre and R. Harding (eds.), *Precursors to Nelson. British Admirals of the Eighteenth Century* (London, 2000), 129-50.
- Ballantyne, I. and Eastland, J., *Warships of the Royal Navy. HMS Victory* (Barnsley, 2005).
- Beatson, R., *Naval and Military Memoirs of Great Britain, 1727 to 1783. Vol. I* (Edinburgh, 1804).
- Berg, M., *Luxury and Pleasure in Eighteenth-Century Britain* (Oxford University Press, 2007).
- Bingeman, J.M. and Mack, A.T., 'The Dating of Military Buttons: Second Interim Report Based on Artefacts Recovered from the 18th-Century Wreck Invincible, Between 1979 and 1990', *IJNA* 26.1 (1997), 39-50.
- Blackmore, H.L., *The Armouries of the Tower of London. I. The Ordnance* (London, 1976).
- Blanckley, T.R., *A Naval Expositor (1750)* (Jean Boudriot, Rotherfield, 1988).
- Borresen, T., 'The Markings of English Cannon Captured at Yorktown', *The Journal of the American Military History Foundation* 2.4 (1938), 235-39.
- Camidge, K., *HMS Colossus. Progress Report 2003* (2003).
- Camidge, K., *HMS Colossus. CISMAS Debris Field Survey 2005* (2005).
- Caruana, A.B., *The History of English Sea Ordnance 1523-1875. Volume II: 1715-1815. The Age of the System* (Jean Boudriot Publications, Rotherfield, 1997).
- Charnock, J., *Biographia Navalis; or Impartial Memoirs of the Lives and Characters of the Officers of the Navy of Great Britain from the Year 1660 to the Present Time, Vol. II* (London, 1795a).
- Charnock, J., *Biographia Navalis; or Impartial Memoirs of the Lives and Characters of the Officers of the Navy of Great Britain from the Year 1660 to the Present Time, Vol. III* (London, 1795b).
- Charnock, J., *An History of Marine Architecture Including an Enlarged and Progressive View of the Nautical Regulations and Naval History, Both Civil and Military, of All Nations, Especially of Great Britain. Vol. III* (London, 1800).
- Clowes, W.L., *The Royal Navy. A History from the Earliest Times to 1900, Volume Three* (London, 1966).
- Codrington, Sir E., *A Narrative of the Loss of the Royal George at Spithead, August 1782; Including Tracey's Attempt to Raise her in 1783, Her Demolition and Removal by Major-General Pasley's Operations in 1839-40-41-42 & 43, including a Statement on her Sinking Written by her then Flag-Lieutenant, Admiral Sir C.P.H. Durham* (London, 1840, 7th ed.).
- Colledge, J.J. and Warlow, B., *Ships of the Royal Navy: the Complete Record of all Fighting Ships of the Royal Navy* (Chatham, 2006).
- Curryer, B.N., *Anchors. An Illustrated History* (London, 1999).
- Dafter, R., *Guernsey Wrecks. Shipwrecks around Guernsey, Alderney and Sark* (Tonbridge, 2001).
- Dare, P.J., Palmer, D.W., Howell, M.L. and Darby, C.D., *Experiments to Assess the Relative Dredging Performance for Research and Commercial Vessels for Estimating the Abundance of Scallops (Pectens maximus) in the Western English Channel Fishery* (Fisheries research Technical Report No. 96, Lowestoft, 1994).

- Duplisea, D.E., Jennings, S., Malcolm, S.J., Parker, R. and Sivyer, D.B., 'Modelling Potential Impacts of Bottom Trawl Fisheries on Soft Sediment Biogeochemistry in the North Sea', *Geochemical Transaction* 14 (2001), 1-6.
- Elkin, D., Argueso, A., Grosso, M., Murray, C., Vainstus, D., Bastida, R. and Dellino-Musgrave, V., 'Archaeological Research on HMS Swift: a British Sloop-of War Lost off Patagonia, Southern Argentina, in 1770', *IJNA* 36.1 (2007), 32-58.
- Evans, C.D.R., *The Geology of the Western English Channel and its Western Approaches* (HMSO, London, 1990).
- Fisher, H.E.S., *The Portugal Trade. A Study of Anglo-Portuguese Commerce 1700-1770* (London, 1971).
- Ford, B., Borgens, A., Bryant, W., Marshall, D., Hitchcock, P., Arias, C. and Hamilton D., *Archaeological Excavation of the Mardi Gras Shipwreck (16GM01), Gulf of Mexico Continental Shelf* (New Orleans, 2008).
- Gardiner, R., *The Line of Battle. The Sailing Warship 1650-1840* (Conway Maritime Press, London, 1992).
- Gibbard, P.L. and Lautridou, J.P., 'The Quaternary History of the English Channel: an Introduction', *Journal of Quaternary Science* 18 (2003), 195-99.
- Goodwin, P., *The Construction and Fitting of the Sailing Man of War* (Conway Maritime Press, London, 1987).
- Grochowski, N.T.L., Collins, M.B., Boxall, S.R. and Salomon, J.C., 'Sediment Transport Predictions for the English Channel, Using Numerical Models', *Journal of the Geological Society* 150 (1993), 683-95.
- Harding, R., *Seapower and Naval Warfare 1650-1830* (London, 1999).
- Hepper, D.J., *British Warship Losses in the Age of Sail 1650-1859* (Jean Boudriot Publications, Rotherfield, 1994).
- Hervey, F., *The Naval History of Great Britain; From the Earliest Times to the Rising of the Parliament in 1799* (London, 1779).
- Hill, R., *The Prizes of War. The Naval Prize System in the Napoleonic Wars, 1793-1815* (Stroud, 1998).
- Hogg, O.F.G., *The Royal Arsenal. Its Background, Origin and Subsequent History Volume 1* (Oxford University Press, 1963).
- Horne, T.H., *A Compendium of the Statute Laws and Regulations of the Great Admiralty Relative to Ships of War, Privateers, Prizes, Re-captures and Prize-Money* (London, 1803).
- Jobling, H.J.W., *The History and Development of English Anchors ca. 1550-1880* (MA Thesis, Texas A & M University, 1993).
- Jones, M., (ed.), *For Future Generations. Conservation of a Tudor Maritime Collection. The Archaeology of the Mary Rose, Volume 5* (Portsmouth, 2003).
- Kennedy, P., *The Rise and Fall of British Naval Mastery* (London, 1976).
- Lavery, B., *The Ship of the Line. Volume I: the Development of the Battlefleet 1650-1850* (Conway Maritime Press, London, 1983).
- Lavery, B., *The Arming and Fitting English Ships of War 1600-1815* (London, 1987).
- Lyon, D., *The Sailing Navy List. All the Ships of the Royal Navy Built, Purchased and Captured 1688-1860* (Conway Maritime Press, 1993).
- Macdonald, J., *Feeding Nelson's Navy. The True Story of Food at Sea in the Georgian Era* (London, 2006).
- Maisonneuve, De., B., 'Excavations of the *Maidstone*, a British Man-of-war Lost off Noirmoutier in 1747', *IJNA* 21.1 (1992), 15-26.
- Malcom, C., 'The Copper Cauldrons aboard the *Henrietta Marie*', *The Navigator: Newsletter of The Mel Fisher Maritime Heritage Society* (2000), 15.2.
- Marcus, G.J., *Heart of Oak. A Survey of British Sea Power in the Georgian Era* (Oxford University Press, 1975).
- Mehl, H., *Naval Guns. 500 Years of Ship and Coastal Artillery* (London, 2001).
- Morris, R., *Island Treasure* (London, 1967).
- Ovenden, J. and Shayer, D., *Shipwrecks of the Channel Islands* (Guernsey, 2002).
- Owen, N.C., 'HMS *Hazardous* Wrecked 1706. Pre-Disturbance Survey Report 1987', *IJNA* 17.4 (1988), 285-93.
- Price, J.M., 'The Imperial Economy 1700-1776'. In P.J. Marshall (ed.), *The Oxford History of the British Empire. Volume II. The Eighteenth Century* (Oxford University Press, 1998).
- Reynaud, J.-Y., Tessier, B., Auffret, J.-P., Berné, S., De Batist, M., Marsset, T. and Walker, P., 'The Offshore Quaternary Sediment Bodies of the English Channel and its Western Approaches', *Journal of Quaternary Science* 18 (2003), 361-71.
- Richmond, H.W., *The Navy in the War of 1739-48. Volume II* (Cambridge University Press, 1920).
- Roberts, D.H. (ed.), *18th Century Shipbuilding. Remarks on the Navies of the English & the Dutch from Observations Made at their Dockyards in 1737 by Blaise Ollivier, Master Shipwright to the King of France* (Jean Boudriot Publications, Rotherfield, 1992).
- Rodger, N.A.M., *The Wooden World. An Anatomy of the Georgian Navy* (London, 1986).

- Rodger, N.A.M., 'Sea-Power and Empire, 1688-1793'. In P.J. Marshall (ed.), *The Oxford History of the British Empire. Volume II. The Eighteenth Century* (Oxford University Press, 1998), 168-83.
- Rodger, N.A.M., *The Command of the Ocean. A Naval History of Britain, 1649-1815* (London, 2004).
- Skowronek, R.K., Johnson, R.E., Vernon, R.H. and Fischer, G.R., 'The Legare Anchorage Shipwreck Site – Grave of HMS *Fowey*, Biscayne National Park, Florida', *IJNA* 16.4 (1987), 313-24.
- Stanbury, M., 'HMS *Sirius* 'reconstructed... Pygmy Battle Ship' or 'Appropriate' 6th Rate Vessel?'. In M. Bound (ed.), *Excavating Ships of War* (Oswestry, 1998), 217-29.
- Steffy, J.R., *Wooden Ships and the Interpretation of Shipwrecks* (Texas A & M University Press, 1994).
- Tindal, N., *The Continuation of Mr. Rapin's History of England; From the Revolution to the Present Times, Vol. XXI* (London, 1787).
- Tomalin, D.J., Simpson, P. and Bingeman, J.M., 'Excavation Versus Sustainability In Situ: a Conclusion on 25 Years of Archaeological Investigations at Goose Rock, a Designated Wreck-Site at the Needles, Isle of Wight, England', *IJNA* 29.1 (2000), 3-42.
- Tracey, W., *A Candid and Accurate Narrative of the Operations Used in Endeavouring to Raise his Majesty's Ship Royal George, in the Year 1783; with an Account of the Causes and Reason which Prevented the Success* (Portsea, 1812).
- Vallavine, P., *Observations on the Present Condition of the Current Coin of the Kingdom* (London, 1742).
- Watson, W.N.B., 'Alexander Brodie and His Firehearth for Ships', *Mariner's Mirror* 54.4 (1968): 409-412.
- Whitworth, C., *State of the Trade of Great Britain, Part II* (London, 1776).
- Wilkinson, C., *The British Navy and the State in the Eighteenth Century* (Woodbridge, 2004).
- Winfield, R., *British Warships in the Age of Sail, 1714-1792* (Minnesota, 2007).

Appendix 1. Admiral Sir John Balchin – A Timeline

- 1692 – lieutenant of the *Dragon* and then the *Cambridge*.
- 25 July 1697 – appointed captain of the 32-gun *Virgin*.
- 12 October 1702 – on the *Vulcan* fireship participated in the capture and burning of French and Spanish ships at Vigo in the War of the Spanish Succession. Balchin brought home the *Modere* prize of 56 guns.
- 1703-1707 – accumulated enormous experience patrolling the English Channel and North Sea on the *Adventure* and *Chester*.
- 10 October 1707 – after a brief station along the Guinea coast, Balchin was part of a small squadron captured in the Channel by a French force commanded by Forbin and Duguay-Trouin while convoying a fleet to Lisbon, including a thousand horses for the campaign in Spain.
- September 1708 – Balchin returns to England on parole, is tried and fully acquitted in court-martial on 27 October.
- August 1709 – appointed to the *Gloucester*, a new ship of 60 guns.
- 26 October 1709 – after just clearing land off Spithead, captured for a second time by Duguay-Trouin.
- 14 December 1709 – tried a second time by court-martial for loss of the *Gloucester*. Balchin's warship was found to have taken on Duguay's own ship, the 74-gun *Lis*, for more than two hours, while another fired at her, and three other ships prepared to board her. *Gloucester's* foreyard was shot in two, the head-sails were rendered unserviceable, and she had received much damage to the yards, masts, sails, and rigging. The court concluded that Captain Balchin had discharged his duties very well, and fully acquitted him.
- 1710-1715 – Captain Balchin appointed to the 48-gun *Colchester* for Channel service and cruised between Portsmouth, Plymouth, and Kinsale for almost five years.
- February 1715 - Transferred to the 40-gun *Diamond* for a voyage to the West Indies and the suppression of piracy (returned May 1716).
- May 1716 – appointed to the 70-gun *Orford* in the Medway until February 1718.
- 1717 – commanded the *Orford* into the Baltic under Sir George Byng.
- February-December 1718 – captained the 80-gun *Shrewsbury* off Sicily in the defeat of the Spanish under Sir George Byng. The *Shrewsbury* was commanded by Vice-admiral Charles Cornwall, second in command in battle off Cape Passaro on 31 July.
- May 1719 - Balchin appointed to the 70-gun *Monmouth*, in which he accompanied Admiral Sir John Norris to the Baltic in the three successive summers of 1719, 1720 and 1721.
- 1722-1725 - commanded the *Ipswich* guardship at Spithead.

- February 1726 – again appointed to the *Monmouth* for the yearly cruise up the Baltic with Sir Charles Wager in 1726 and in 1727 with Sir John Norris.
- October 1727 – sent to reinforce Sir Charles Wager at Gibraltar, besieged by the Spaniards; returned home January 1728.
- 19 July 1728 – promoted to Rear-admiral of the Blue.
- 1729 – appointed Rear-admiral of the White.
- 1731 – dispatched to Cadiz and the Mediterranean on the *Princess Amelia* as second-in-command under Sir Charles Wager to take possession of Leghorn and place Carlos on the throne of Naples.
- 1732 – appointed Rear-admiral of the Red.
- February 1734 – appointed Vice-admiral of the White and commanded a squadron at Portsmouth for a few months.
- 1739 – appointed Vice-admiral of the Red.
- 1740 – in the war against Spain commanded a squadron of six sails in the Mediterranean to intercept (without success) the homeward-bound Spanish Assogues fleet of treasure ships returning from Vera Vruz to Spain.
- Late 1740 – Balchin commands squadron in the Channel.
- 9 August 1743 – promoted to Admiral of the White.
- March 1744 – knighted and appointed governor of Greenwich Hospital, with a pension of £600 a year during his lifetime.
- 1 June 1744 – Balchin is restored to his active rank as Admiral of the White.
- 28 July 1744 - sailed from St. Helen's to liberate Sir Charles Hardy from the French blockade of the River Tagus.
- 14 August to 31 August 1744 – Balchin arrives at the River Tagus, liberates Sir Charles' convoy and proceeds to Gibraltar in search of the Brest fleet.
- 18 August 1744 – at Gibraltar, *Victory* sees the 26 store-ships safely into the Mediterranean.
- 28 September 1744 – Balchin leaves the coast of Galicia for England.
- 3 October 1744 – entire fleet is dispersed by a violent storm.
- 4 October – final sighting of HMS *Victory*.
- 10 October 1744 – the entire English fleet arrives home at St. Helens apart from HMS *Victory*.