HMS *Endymion*

Past, Present, and Future

MA Thesis by Alexandre Hinton

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Dedication

To all those who have supported me along the way

Cover image: A reconstruction drawing of *Endymion*'s final moments as Daniel Woodriff lowered the flag, commissioned by the author, illustrated by Eric Stegmaier.

Abstract

In August 1790, HMS *Endymion*, a British Fifth-Rate warship, was sailing towards Grand Turk, Turks and Caicos, when the vessel hit an uncharted shallow reef, causing damage that resulted in the ship's loss. Though the ship was unsalvageable, the slow foundering allowed the crew members to escape and be rescued along with a large amount of goods. Today, the remains of this wreck, including piles of cannon, multiple anchors, ballast, and other artefacts are resting in 10 meters of water adjacent to Endymion Rock at the southern end of the Turks Bank. Archaeological investigations on the site took place in 1992, 2001, 2007, and 2019. Each produced varying amounts of documentation, including site plans, photographs, photomosaics, and photogrammetric models.

This thesis takes the data produced in previous investigations in conjunction with overlooked archival material to produce a clear image of the history and site formation processes that have occurred on site since the vessel's deposition and particularly since 1992. From this, along with data collected in the author's 2023 visit, a baseline is created from which to monitor future changes to the site. The results of this can aid in understanding the various threats to submerged archaeological material in the Turks and Caicos Islands and similar sites elsewhere in the circum-Caribbean region.

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1.0 Introduction

The field of maritime archaeology encompasses a large variety of topics, time periods, cultures, and sites that can be examined and analysed. It is concerned with past peoples' relationship to the sea and other bodies of water. Some of the best-studied sites in this regard are shipwrecks. Although maritime archaeology incorporates much more than just wrecked vessels, the importance of shipwreck sites should not be underestimated, as these play an essential role in the reconstruction of past peoples' relationship to the maritime realm.[1]

It is rare for maritime archaeologists to revisit a shipwreck once it has been fully recorded and studied. One of the reasons for this might be that shipwrecks are often viewed as time capsules: particular events frozen in time. While it is certainly true that a shipwreck site is initially created in a very short period of time, numerous influences occur on the site from the moment the event transpires (Gibbs 2006). A large variety of site formation processes—anthropogenic, biological, environmental, chemical—can change the integrity, appearance, and configuration of a shipwreck site. For example, cargo and other artefacts can be salvaged shortly after wrecking or by modern SCUBA divers with sticky fingers, wooden hulls can be destroyed, metal becomes corroded and encrusted, fish and marine life can remove artefacts from a site, and powerful storms can have devastating impacts on even the largest shipwreck sites.

1.1 Research problem

Some of the most heavily degraded shipwrecks in the world can be found in the circum-Caribbean region, which comprises the Caribbean and Lucayan archipelagos and adjacent mainland coastal areas. This is one of the most unforgiving environments for submerged shipwreck sites, most of which are often so unrecognizable as such except to trained archaeologists. There are several reasons for this. First, wood-boring organisms wreak havoc on any exposed wood, causing it to disintegrate completely within the span of a few years or decades. Second, destructive hurricanes batter the region every year and can completely stir up a shipwreck site. Third, most of the circum-Caribbean region is easily accessible from the United States, which has opened it to further looting and salvaging since the advent of modern SCUBA diving.

There are countless shipwreck sites located within the circum-Caribbean region. Of the ones that have thus far been discovered, most are found in shallow waters. Some of these have been subjected to scientific studies (Cartellone 2015; Gill 2020; Nagelkerken and Hayes 2008). As these shipwrecks are typically only investigated once, researchers only see a snapshot of a site which has been submerged for centuries. As a result, a long-term perspective on how a site has changed over time is often missing from these studies. This is particularly true for areas where degradation of shipwreck sites is high. Archaeologists therefore usually do not have a good understanding of all the factors that have shaped a specific shipwreck up to the point of study. This can hamper interpretations of a site and complicate the formulation of a suitable management strategy.

To address this problem, this thesis will investigate the HMS *Endymion* shipwreck site located in the shallow waters of the Turks and Caicos Islands (TCI). *Endymion* was a British copper-sheathed warship that wrecked on a then-uncharted rock on the Turks Bank in 1790. It presents

[1]This thesis follows the style guide of AJMA (v. 1.2).

an ideal case study to quantify site formation processes occurring on a shallow water wreck site in the circum-Caribbean region. This is because the site has been subjected to all the devastating site formation processes described above. Moreover, it has been investigated several times since 1992. By tracking the changes to *Endymion* across site plans, photographs, photomosaics, and photogrammetric models from these previous investigations, every detail in the differences between the investigations can be examined. In addition to a wealth of archaeological data, there also exist detailed accounts about the events pre-, during, and post-wrecking in the documentary record. These have not been utilized correctly or in their entirety by previous researchers (Bound 1998; Keith 2001, 2008). This study will examine these accounts fully, apply this information to the study of *Endymion*'s archaeological remains, and show that the incorporation of this source of information is of paramount importance when trying gain a comprehensive understanding of a shipwreck site.

By analysing in detail the various factors that influenced *Endymion* pre- and post-wrecking through this multi-disciplinary approach, a more complete picture can be formed of this vessel's site history. Through this revaluation of the *Endymion* site, the advantages seen from this study will hopefully change the typical procedure of shipwreck documentation being one-and-done, and more sites such as this will be revisited.

For this study, the following research questions will be addressed:

- How have site formation processes affected the HMS *Endymion* wreck since 1790 and how can these insights be applied in the future study of other, similar shipwreck sites?

This question is answered by setting out the following methods during this thesis project:

- Investigate how HMS *Endymion* looked like prior to wrecking, including an assessment of:
    - The type of ship it was;
    - How it was constructed; and
    - Whether it had any notable peculiarities.
- Delineate how the ship wrecked. This will be established by researching:
    - The events that led up to its wrecking;
    - What happened to the vessel during and immediately after wrecking; and
    - How absent and/or inadequate navigational information contributed to the wrecking of the vessel.
- Examine the factors that have affected the wreck since its deposition through analysing:
    - The factors that have affected the ship's disintegration;
    - What environmental, biological, and chemical influences affected the site and to what extent;
    - If any other vessels have wrecked in this area;
    - To what degree has salvaging and looting affected the site since its discovery; and
    - What may be the long-term implications that the site formation processes will have on the site.

Before examining the historical background of *Endymion* and its wrecking, it is important to first provide context to the TCI, its legislation pertaining to submerged cultural heritage, and previous investigations conducted at the site.

1.2 Turks and Caicos Islands setting

The Turks and Caicos Islands are the southernmost islands of the Lucayan Archipelago. These consist of more than 40 low-lying islands and cays surrounded by the Atlantic Ocean in the northern reaches of the circum-Caribbean region. Particularly the Turks Islands, separated from the Caicos Islands by the Turks Island Passage, consist of two main inhabited islands, Grand Turk and Salt Cay, along with other uninhabited and smaller islands and islets (Fig. 1). These all lie along the Turks Bank, a region covering 324 km² that ends in a sinuous tail. Endymion Rock is located towards the end of this tail and acts as the only shipping hazard heading north in the Turks Bank until the island of Great Sand Cay.

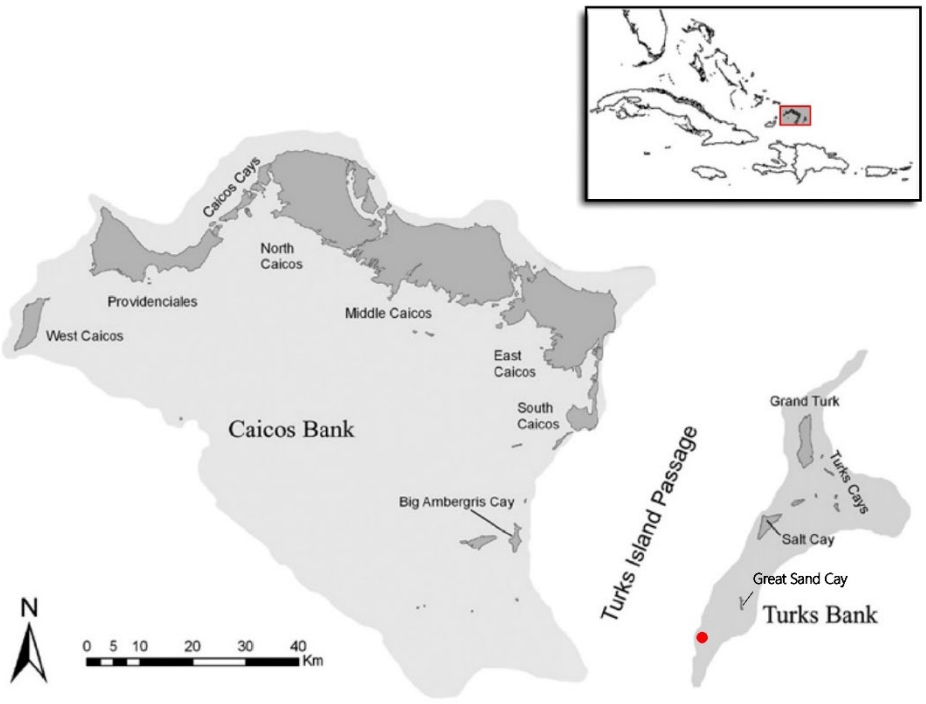

Fig. 1. Map of the Turks and Caicos Islands showing the approximate extent of the Caicos and Turks Bank in light grey along with associated islands and cays. Research area has been marked by a red circle by the author (Reynolds 2011:378 fig.1, edited by author).

This formation, rightly named after the *Endymion*'s wrecking event, is a reef structure that protrudes from the seabed and rises to approximately two to three metres below the surface. The rock is surrounded by gullies reaching a depth from 8 to 13 metres. Further reef structures surround the gullies before dropping off thousands of metres down the Turks Island Passage. The surrounding area is covered in soft and hard corals that attract a variety of marine life. As the rock is exposed to the open ocean, visibility, current, and swell can all change throughout a single day.

During the time of the *Endymion*'s wrecking, the TCI were contested between the Bermudians and Bahamians (Jarvis 1998:449). The islands were previously inhabited by indigenous peoples

known as the Lucayan until decimated by European colonizers and the diseases they carried with them to the New World (Turks and Caicos Museum 2021). By the late seventeenth century, the Turks Islands became semi-colonized by Bermudians desiring salt (Jarvis 1998:179). Here salt, also known as white gold due to its importance as a food preservative, was produced and raked until well into the twentieth century (Jarvis 1998:445). Today, the archipelago is a British Overseas Territory that has constitutional and historical links to the United Kingdom (Mills and Mills 2022). The region is home to just over 49,000 people and act as a major tourist destination known for white beaches, blue waters, and incredible SCUBA and snorkel experiences (Statistics Authority 2024).

1.3 Previous investigations and baseline data

Various individuals and groups have conducted investigations into the *Endymion*'s history. As the wrecking event was rather well documented, relevant records can be easily accessed at the National Maritime Museum's archives in Greenwich. Further documentation is found in newspaper articles and naval records of the time. A published historical research article was produced in 1995 by Bob Gascoine who authored *HMS Endymion: Her Story* in the TCI local magazine, the *Times of the Islands* (Gascoine and Minty1995). This article covered the wrecking event and included entries from the logbook from 28–31 August along with a builder plan of the *Endymion* vessel. Brief entries have been published on various websites, in magazines, and excerpts in books (More Than Nelson 2018; Three Decks 2024; Winfield 2007). That said, during the historical review of *Endymion* and the wrecking, these entries along with the subsequently mentioned archaeological investigations, have not included or missed key points in relation to the event, which will be discussed further on.

Regarding archaeological visits, there have been five scientific investigations on the site to date. The earliest was conducted in 1992 by Mensun Bound of Oxford University MARE and Brian Sheedy of the Turks and Caicos National Museum on behalf of the Turks and Caicos Department of Tourism (Bound 1998). During the brief survey, the team identified artefacts of the vessel including, "[…] 18 or 19 iron cannon […]", (Bound 1998:213) along with four prominent anchors alongside the reef structure. An initial site plan was created using baseline-offset measurements that consisted solely of the identified cannon and anchors in the main area of the site (Bound 1998:213). It was noted by Bound that due to time constraints, measurements taken were not rechecked (Bound 1998:214). Artefacts recovered included 13 sheathing tacks, 14 nails, 7 musket balls, and various copper alloy objects and other unified iron objects (Bound 1998:215). Bound stated that the sites had a feeling of "being picked over" as many other objects commonly associated with shipwrecks were not present (Bound 1998:215). He further stated that the team saw broken and discoloured coral and surmised it to be possible evidence of a recent cannon removal (Bound 1998:216). Photographs of the investigation process along with a few artefacts are published in a chapter of Bound's *Excavating Ships of War*.

Although this archaeological visit laid a baseline for the investigation of the wreck, there are various inaccuracies that should be discussed concerning Bound's published material. First, Bound mentions how the site was located in 1991 by Bryan Sheedy, the owner of Salt Cay's dive shop at the time (Bound 1998:203). Though Sheedy may have been the first to make public his findings, given information gathered that will be discussed later on, the site had been known previously by locals as a lucrative fishing spot (Appendix 1).

Secondly, in Bound's description of how *Endymion* ended up in the area, he stated that the ship was on its final journey from Halifax, Nova Scotia to Port Royal, Jamaica (Bound 1998:210). This is incorrect, as the vessel was on its way from Port Royal to Grand Turk, and afterwards back to Jamaica, which will be discussed later (see section 2.5 and 2.6; Appendix 2). This aspect is especially important as mentioned in the region's pilot books—guides used to sail in a given area—taking the passage southward rather than northward was considerably easier. A third aspect of inaccuracy is that all the vessel construction plans within the chapter which are stated to be that of *Endymion* are in fact that of the later HMS *Endymion* (1797) (Bound 1998:204–208). This is important to note as the later *Endymion* only had one gun deck and different dimensions compared to the *Endymion* in question (see table 1).

In 2000, Donald Keith, a prominent archaeologist in the TCI, along with other colleagues visited Endymion Rock, sponsored by the Turks and Caicos National Museum (Keith 2000, 2001). Their goal was to map the wreck site and its most important historical features (Keith 2001:50). During this visit they were able to take photographs for a photomosaic, create a sketch of the site, and take measurements of the anchors and cannon. No artefacts were disturbed or recovered during this process and 22 cannon were identified. The results of this investigation were published in the *Astrolabe*, the newsletter of the Turks and Caicos National Museum (Keith 2001). In the article, Keith briefly discusses the wrecking event, though no mention is made of the events surrounding it.

In 2007, Keith returned to the site under the direction of the TCI government in conjunction with the Waitt Institute for Discovery to further document the area (Keith 2008). The investigation used a Klein Model 3000 side scan sonar, a Marine Magnetics Magnetometer, and a Seaeye Falcon ROV to detect anomalies and investigate them (Keith 2008:2). The team was able to create a refined map and photomosaic of the *Endymion* site and identify six additional cannon, bringing the total up to 28 cannon and two carronades (Keith 2008:7). Photography and videography were employed while working on site. No artefacts were recovered during this investigation.

It should be noted that *Endymion* is accompanied by a later shipwreck at Endymion Rock. Known simply as the "Companion Wreck," this steamer lies primarily to the north of the Endymion site with the exception of a stockless anchor and connecting stud-linked chain that crosses the *Endymion* wreck site from east to west (Keith 2001:52). The site consists of large amounts of metal debris that includes a small auxiliary steam engine and screw propeller (Keith 2008:12). It is plausible that other, smaller debris from this wreckage is strewn across the *Endymion* site and obscures further features of the ship remains.

During Keith's 2007 investigation, he produced a photomosaic of the Companion Wreck site and tentatively identified the vessel (Keith 2008:6, 15). In addition, he located six magnetic anomalies several hundred metres northwest of Endymion Rock (Keith 2008:5, 8). These proved to be several riveted iron compartments that may be the remains of other shipwrecks (Keith 2008:8). Furthermore, an account from 1995 mentioned a third recognizable wreck of, "[…] a turn-of-the-century ship, with side plates, telegraph and some glass-intact portholes visible" (Keith 2008:10). Although no remains of this wreck have been seen since this remark, it may still be lying among the multitude of reef structures in the area. These vessels that wrecked after *Endymion* reinforce just how hazardous this area was for those who came upon it.

Keith's investigations were thorough for the limited time available at the site. That said, as with Bound, the historical background of the site was inadequately researched. Keith primarily went off Bound's chapter for his information, incorrectly stating the final voyage's route and the wrong date of sinking (Keith 2008:16). Besides these minor errors, the site plan created was especially helpful in this study along with the images and video taken of the site.

The last archaeological investigation occurred in 2019 by Ruud Stelten and Joost Morsink (Morsink and Stelten 2019; Ruud Stelten pers. comm. 2024). Although the visit was brief, the team was able to undertake extensive videography, photography, and photogrammetry of the main portion of the site. A high-resolution 3D model was produced using 369 photographs captured of the site. Measurements were not taken, nor were any artefacts recovered. It is important to note this investigation, however short, as it was the first scientific recording of the site that occurred since the impactful Hurricane Irma.

Although the site itself has been investigated multiple times using different methods, each inspection has been lacking a comprehensive product and publication afterward on the entire shipwreck story and essential surrounding elements. In addition, as mentioned above, there are multiple inaccuracies from these investigations that should be addressed. By analysing the shipwreck event from the vessel's logbook and then the preceding events and subsequent activities, a greater understanding of why the *Endymion* site appears as it does today unfolds.

1.4 Local shipwreck legislation

Understanding local legislation as it relates to the protection of the shipwreck site, how it is implemented and enforced, and how this may be improved upon can assist in safeguarding the site from anthropogenic threats. The different means by which underwater cultural heritage is protected across the world presents a continual issue. To combat this, the 2001 UNESCO *Convention for the Protection of the Underwater Cultural Heritage* (2001 UNESCO Convention) put forth proposed guidelines for the management of underwater cultural heritage. Unfortunately, the TCI government has yet to ratify this agreement. Instead, the government has in place its own guidelines for the management of heritage sites.

The TCI first published the *Protection of Historic Wrecks Ordinance* in 1974. This covers identifying a historic shipwreck site, the offenses that can occur within a designated protected area, the requirements for a license to interfere with the wreck, the consequences of trading or owning historic wreck artefacts, and the regulations regarding using explosives on site. Unfortunately, these guidelines have been amended only once, in 1998. This change included an increase in fines and length of imprisonment for removing artefacts from a designated shipwreck site, unlicensed diving or salvaging operations, deposition of material on top of the site, and the use of explosions and vacuums on protected sites. The fines increased from varied amounts and imprisonment lengths to a uniform $10,000 and two years or when upon conviction on indictment $50,000 and five years. Since 1998, the ordinance has been published unchanged in 2009, 2014, and 2018.

After Bound's 1992 visit, Endymion Rock and its surroundings were declared a National Historical Park (Bound 1998:216). By 2001, the site was deemed a Site of Historical Importance under the National Parks legislation (Keith 2001:50). In 2016, the TCI government produced the

Protection of Historic Wrecks Regulations which assisted with putting the *Protection of Historic Wrecks Ordinance* into effect. This legal notice deals with any shipwreck site that is at least fifty years old. The document primarily contains steps to apply for a license to investigate or interfere with a site. To be granted a license to remove artefacts from the shipwreck, a competent marine archaeologist with previous experience is required to serve as the project archaeologist, a conservation plan for the salvage must be approved, and all activities should be reported at the end of the project. One of the more interesting sections of the regulation deals with the valuation of any artefacts recovered, which then can provide the salvager with 50% of that value or from royalties earned from their display, all paid by the government.

In the 2016 *National Parks Ordinance*, which lists protected historic vessels, the Molasses Reef wreck and HMS *Endymion* are the only two named shipwreck sites. There are at least three other shipwreck sites having been discovered before and after this regulation was published. This includes a wreck site north of Salt Cay, *Trouvadore*, and another east of Great Sand Cay. Although few historic shipwrecks have been found in the TCI, based on the documentary record, there is the possibility to find many more (Turks and Caicos Museum 2017). A list of protected shipwrecks should be updated annually to apply full protection to all off TCI's shipwrecks.

Continuing, *Legal Notice 83* of 2016 in the *National Parks Regulations (Section 3 (4))* published the same year works to identify the direct areas of the national parks, nature reserves, sanctuary, areas of historic interest, and critical habitat reserves. *Endymion* is mentioned in the sections of the National Parks (Part I) and the Areas of Historical Interest (Part IV). The corresponding area sizes mentioned under these sections do not match. Additionally, at the time of writing, the coordinates dictating the area of the site in this legislation are incorrect, lying two kilometres north-northwest of the actual site. The cause of this inaccuracy is unknown; it could be due to an inaccurate GPS reading or deliberate vagueness.

Although the TCI government has produced a set of regulations for the protection of these historic wreck sites, a lot is left to be desired. One area of concern in these ordinances is the minimal fines, which have not been updated since 1998. The enforcement fines should be reevaluated as the amount has a significantly lower value today. Furthermore, although these rates may be costly for the common individual, large salvaging or treasure-hunting companies can shoulder such an expense easily.

Another issue concerns the difficulties enforcing heritage laws. The manpower and funding required to patrol the remote maritime archaeological sites such as *Endymion* is difficult to obtain for a small island nation. Another prevalent issue of these regulations is the licenses that can be granted, where issues of disturbing more than what was permitted have been seen in the past (Keith 1997). Furthermore, the inclusion of artefact valuation in these regulations may promote the salvaging of artefacts by treasure-hunting companies. Lastly is the lack of steps for the protection of sites prior to outside interference, which both the legislation and regulations do not address. This aspect should be included in any updates to the legislation. In sum, although there are steps to protect historic shipwreck sites of the TCI, the current legislation and regulations allow for too many uncertainties and broad interpretations which can lead to further destruction of underwater cultural heritage.

2.0 Historical background and analysis

During the investigation of a single shipwreck site, there are numerous variables that go into the study. Most important is the context in which the vessel sank. Understanding the influences of that period's events, the main characters involved and their background, the ship itself and its history, what influenced sailing strategies during this time, and what factors worked on these variables after the wrecking all ties into this. By recognizing the world in which a ship operated, one can comprehend how the vessel came to be in a situation that led to its wrecking. This is important as without this context, important variables can be missed during the examination of a site. All the subsequent sections are mentioned to create this background so that the full framework of the *Endymion* wreck site can come into focus.

2.1 The British Royal Navy in the Caribbean

Understanding the complex role the British navy played in the eighteenth century is vital to comprehending the HMS *Endymion*'s role in the Caribbean. The Revolutionary War (1775–1783) had recently resulted in the loss of the American colonies for the British, an outcome influenced by their division of forces and deteriorating navy in the previous years (Wilkinson 2004:209). That said, by the turn of the century, the Royal Navy had been restructured and emerged with the strongest naval fleet in the world, similar in size to the Spanish and French navies combined (Wilkinson 2004:212). The British continued with increasingly superior offensive capabilities as a result of their quality of naval leadership, discipline, and skill of seamanship which other countries of the time lacked (Bound 1998:11).

Innovations the British had been testing, such as the use of copper-sheathing and the invention and widespread adoption of the carronade, further launched the Royal Navy into the future (Cartellone 2015:6). Carronades were short and stubby guns that required fewer men to operate compared to a traditional cannon, took up less space and weight on board, and had a reduced windage as the gun and shot were made by the same company (Cartellone 2015:110). As a result, they were highly effective and relatively easy to operate. The addition of these guns allowed for better ship-to-ship tactics while capturing vessels when firing speed was more important than firing range (Cartellone 2015:111). Through this ingenuity in combination with strategic victories such as that at the Battle of the Saintes (1782), where the victory was partly contributed to these aforementioned innovations, Great Britain became the world's leading naval power by the late eighteenth century (Cartellone 2015:103).

The Caribbean islands the British had claimed, particularly those containing large sugar plantations such as Jamaica and Barbados, were the British Empire's most valuable possessions (McAleer and Petley 2016:14). The transatlantic and intercolonial trade that revolved around these islands underpinned a significant portion of Britain's economy (McAleer and Petley 2016:7). In turn, this financed British debts from the previous wartime efforts and helped prepare for any future conflicts, which would soon manifest itself in the form of the French Revolutionary Wars (1792–1802) and the Napoleonic Wars (1803–1815) (McAleer and Petley 2016:9). In addition, the trade covered the expenses for the continual protection of these vital islands and the transatlantic shipping routes (McAleer and Petley 2016:14).

The presence of the British navy in the Caribbean was pivotal after the American Revolution. The Navigation Acts, a set of laws that declared certain goods contraband, and more importantly restricted trade between the British West Indies and the fledgling United States of America, were supposed to be guiding British trade in the region (Kirby 1989:137–138). Prior to the Revolution, the American colonists intensively traded with the Caribbean islands, as goods were closer and therefore cheaper to receive than from England (Kirby 1989:137). After the war that all changed, and this trade became illegal, only allowing dealings with English vessels crewed predominately by English seamen (Kirby 1989:138). That said, this did not stop the Americans from doing business with the islands, and many ships entered ports under false pretences to conduct illegal transactions (Kirby 1989:138). The Royal Navy's presence in the Caribbean was partly to enforce these acts, however many local naval officers turned a blind eye to avoid scrapes and possible misunderstandings over the illegal trade (Kirby 1989:1378–139).

In addition to impeding illegal trade, the mere presence of Britain's naval power at these Caribbean ports became a large deterrent for slave rebellions, pirates, and privateers (McAleer and Petley 2016:7). This allowed for the continual control of activities that occurred along with the protection of principal ports and towns from outside invaders and local rebellions (McAleer and Petley 2016:11). Not only did the navy play a vital role in this protection, they also acted as a representative and symbol of the British Crown itself (McAleer and Petley 2016:12). This helped to reinforce a sense of identity to the homeland which was of greater importance for West Indian colonists than the rebellious North Americans (O'Shaughnessy 2000:xv–xvi). Citizens residing in these overseas islands commonly viewed them as a temporary home, unlike those in the American colonies, with most sending their children back to England for schooling or even becoming absentees from their plantations (O'Shaughnessy 2000:4, 10).

2.2 Shipboard life and social dynamics

Although the British navy was seen as a virtuous institution, a darker side pervaded this establishment. Many of the seamen had been impressed or "press ganged", a practice of coercing individuals into service through force (Brunsman 2013:2). On average, the number of impressed seamen amounted to about half of all British sailors, making it one of the largest groups of forced labourers in the British Empire, second only to enslaved Africans (Brunsman 2013:7). This institution peaked during the eighteenth century and contributed to the British navy maintaining its superiority through a numerical advantage (Brunsman 2013:6–7). Due to a frequent lack of distinction in the documentary record between volunteers and those pressed, it is impossible to say exactly how many men may have been impressed on vessels such as HMS *Endymion* (Brunsman 2013:6). That said, given the above, it is likely that at least a portion of the men on the *Endymion* were forced into service.

This system undoubtedly created resentment in some men, leading them to lash out and gain harsh naval punishments, from lashes to other draconian inflictions as laid out in the *36 Articles of War* (1757) (Brunsman 2013:197). Records of these occurrences can be seen throughout the *Endymion*'s logbook, with increased disobedience during the time of the wrecking, as will be discussed later on. In addition to the threat of harsh punishments, life on these vessels was tough, hazardous, and unsanitary, with disease a more dangerous adversary than an enemy's gun (McAleer and Petley 2016:12). Food was typically monotonous, living quarters were cramped, and the Caribbean heat could be debilitating to those who were used to colder climates

(Brunsman 2013:106). These men, the supposed symbol of virtue, would regularly indulge in their carnal desires by visiting brothels and drinking dens while in port, getting caught up in brawls, and engaging in other vices such as gambling (McAleer and Petley 2016:18). Through these experiences and the journeys undertaken they became intertwined with places and people that those back in England could never dare to imagine.

2.3 Sailing in the Caribbean

The Caribbean, a region that comprises hundreds of islands, islets, reefs, and cays, is packed with navigational hazards that are crucial for sailors to know of. Mapping the circum-Caribbean first began in the 1490s during Columbus' expeditions (De La Cosa 1500). Initially, the mapping of this region focused largely on islands, landmasses, and any other features visible above the water's surface (Ortelius 1601). By the mid-eighteenth century, cartographers had produced increasingly accurate depictions of the Caribbean and the region's geographical details gradually came into clearer focus (Stelten 2023:9). It was around this time that cartographers' attention shifted to below the water's surface and the hazards lurking underneath were depicted with increasing detail and accuracy (Ottens and Ottens 1745). With these advancements, mariners voyaging through the perilous Caribbean came to have a more comprehensible understanding of safe sailing routes.

As this region was of vital economic and strategic importance to European powers of this time, understanding the safest and most efficient sailing routes was a necessity. With the transatlantic trade as the backbone of many European economies, having the Caribbean region mapped out allowed for safer passage. Vessels sailing from Africa and Europe would utilize the trade winds to quickly cross the Atlantic to the Caribbean (Brunsman 2013:55). Unfortunately, that was the "easy" part, as departing the region proved more difficult than entering. Leaving required vessels to sail north through the Windward Passage, a series of channels snaking between the northern Caribbean islands. By the time of the *Endymion*'s wrecking, most of the passage was mapped and pilot books were written solely on sailing through these treacherous stretches of water (Fig. 2). Nevertheless, errors abounded, and several hazards remained undiscovered.

Pilot books were used throughout the colonial period as guides to safely sail in a given region (Bishop and Hester 1789; Purdy 1823). Such books included information concerning coastlines, water depths, anchorages, remarks on locations, courses and distances from one place to another, tides and currents, coastal views, and charts. These books were continually updated as new editions were published or additional pages with new information were added to existing books. This knowledge was gathered by mariners during their time abroad and upon their return, passed on in order to revise the pilot books in addition to navigational maps and charts. This is discussed further down in regards to the *Endymion*.

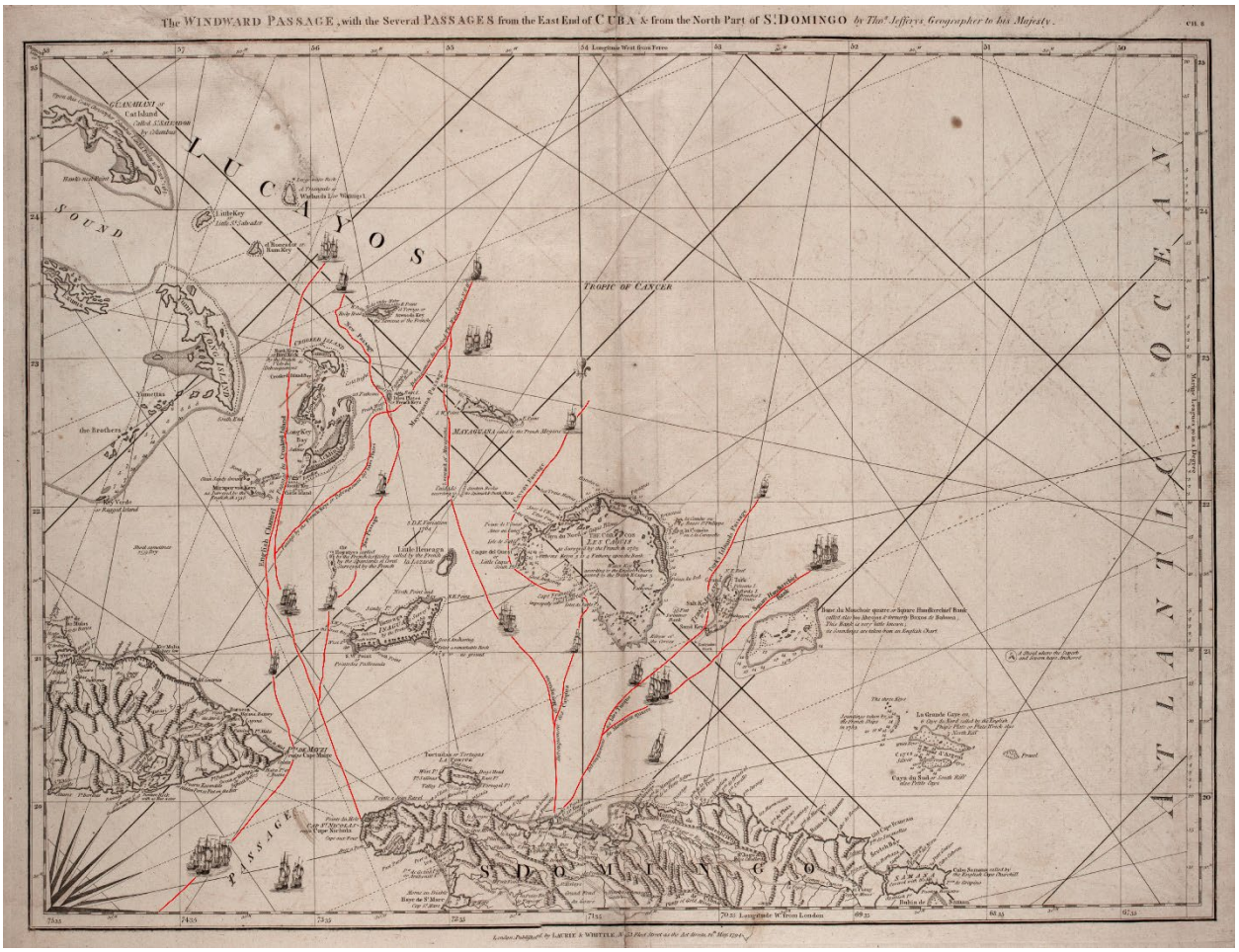

Fig. 2. A map originally by Thomas Jefferys and reprinted by Laurie & Whittle in 1794 showing the Windward Passage and other passages marked in red from the northern Caribbean to the Atlantic (courtesy of Ruud Stelten, personal collection).

During the eighteenth century, the study and practice of navigation began to change rapidly. Inventions such as the sextant and octant allowed for more precise measurements, overtaking the quadrants and sectors for observing altitudes (Schotte 2019:152). New techniques such as the "lunar distance" method were said to minimize the error when determining longitude and latitude (Schotte 2019:153). Other tools such as the marine chronometer, marine timekeeper, and extensive tables were additionally used while navigating (Schotte 2019:176). Navigators could carry a variety of items to assist them during their voyage, including regional charts, atlases, almanacs, and navigational textbooks (Moore 1776; Schotte 2019:5).

By the turn of the century, English navy officers were required to be mathematically adept, able to determine magnetic variations, zenith angles, use trigonometry, and also prove their understanding of the basics of seamanship—a notion previously untested (Schotte 2019:156). The ideal English officer proved to be mathematically adept while grounded in the rudiments of piloting (Schotte 2019:170). It should be understood that although there were more precise means of gathering information on board, typically taking extensive mathematical calculations

and time, this was occasionally discarded for more rudimentary means of gathering navigational data (Schotte 2019:170).

Logbooks were commonly kept on board by the captain and by all other officers on board of a Royal Navy vessel (García-Herrera et al. 2005:13). These detailed day-by-day accounts typically included the location of the vessel, the weather and winds, the vessel's courses and speed, the water depth below the ship, and occurrences on board (García-Herrera et al. 2005:28). The vessel's location was determined by compass headings and estimating the distances to nearby land masses and/or calculating latitude and longitude when weather permitted away from shore (García-Herrera et al. 2005:26). Distances were estimated in both nautical miles and leagues (García-Herrera et al. 2005:26). At the time of the *Endymion*'s wrecking, the English nautical mile equalled 6,120 feet (modern international nautical mile = 1.852 kilometres), with an English foot equivalent to today's length of 12 inches, making it equal to 1.865 kilometres (Howard 1788:1300). A league was measured as three nautical miles, a total today of 18,360 feet or 5.596 kilometres (García-Herrera et al. 2005:26).

The weather was described in detail multiple times a day with the wind direction taken using a 32-point compass (García-Herrera et al. 2005:25). Depths were measured in fathoms, although at this time different countries measured different distances for it. During the late eighteenth century, the British navy measured the fathom at 1.8288 metres, a distance that is equivalent to a fathom today (Howard 1788:1344, Stelten 2019:61). Determining the water depth was especially crucial when sailing in such a hazardous area. A seaman determined the depth underneath the vessel through sounding. This was performed using a sounding weight, often lead, on the end of a piece of rope creating a plummet line. Markers would be tied at various intervals on the line marking different fathoms (Shipwreck Centre and Maritime Museum 2024). As the century progressed and New World charts were further refined, soundings were added and updated to provide a comprehensive view of the surrounding waters (Purdy 1848).

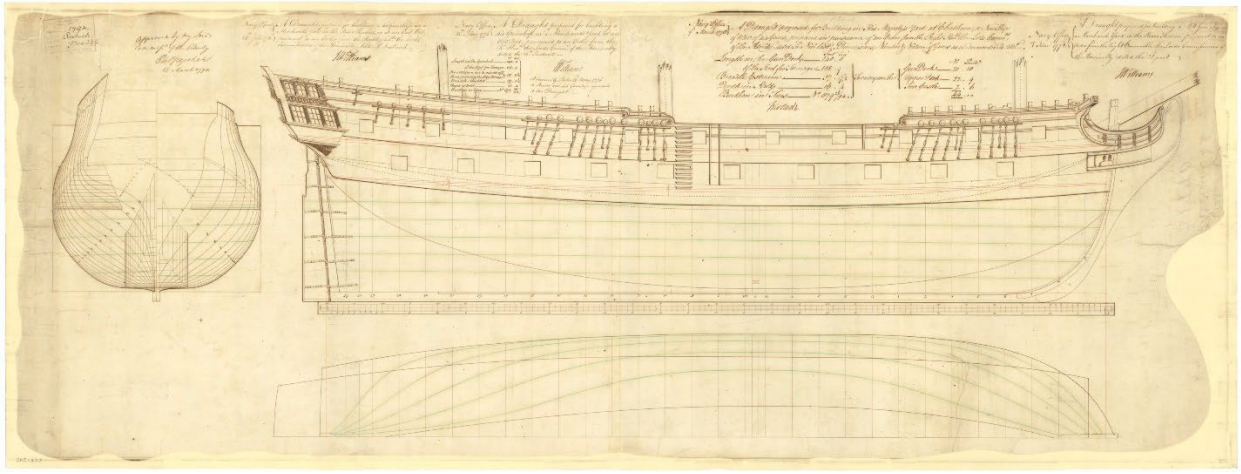

Fig. 3. Architect's draughts showing the lines and measurement details for the construction of the HMS *Endymion* and other Roebuck Class vessels in 1778 (Royal Museums Greenwich ZAZ2237).

2.4 HMS Endymion

HMS *Endymion* was 44-gun Fifth-Rate Roebuck Class British warship designed by Sir Thomas Slade (Fig. 3; Table 1; Winfield 2007:162–185, 176;). Commissioned in 1778 and launched on 28 August 1779, this ship of the line was square-rigged with a copper-sheathed hull (Three Decks 2024; Winfield 2007:178). Within the British naval rating system there were six designated rates that a vessel could be classified as based on its size and the number of guns it carried (Winfield 2007:vii). Fifth Rates were designated to hold between 32 and 44 guns (Winfield 2007:162). Specifically, *Endymion* was originally designated to carry 20 × 18-pounder guns on the lower deck, 22 × 9 pounders on the upper deck, and 2 × 6 pounders on the quarter deck along with six anchors (Curryer 1999:56; Winfield 2007:176). Fifth-Rate vessels ranged between 700 and 1450 tons and were fully crewed with 200 to 300 men (Royal Museums Greenwich 2024).

These were quick ships that could outmanoeuvre larger vessels and run down and capture those of lesser force (Dickson 2012:1). Due to this, they were typically used in coastal battles, for scouting and patrolling, as independent fast cruisers, convoy escorts, or to disrupt enemy shipping routes (Dickson 2012:1; Winfield 2007:176). Unlike other Fifth Rates, Roebuck Class vessels had a low draught designed for the shallow waters around North America and many from the class were built with two gun decks (Winfield 2007:176).

For 11 years, *Endymion* provided service for the British navy. During this time, *Endymion* first sailed with the African trade and to the West Indies and back (Winfield 2007:178). Afterwards, the ship spent time sailing throughout the Americas (Winfield 2007:178). In 1782, *Endymion* took part in one of the most important naval battles of the eighteenth century, the Battle of the Saintes (Winfield 2007:178). In April of this year, this conflict ensued between British Admiral Sir George Brydges Rodney and French Rear-Admiral Comte De Grasse at a small chain of islands between Guadeloupe and Dominica (Cartellone 2015:100). The English victory established British naval dominance despite losing the Revolutionary War (McAleer and Petley 2016:27). In November 1782, *Endymion* took place in the blockade of Cape François (Winfield 2007:178). Following this event, there is no known record of continual service aside from a small repair at Woolwich Dockyard in December 1783 and in 1787 for a brief commission from October to February (Winfield 2007:178). *Endymion* returned to full-time service as a troop ship in 1789 under the command of Lieutenant Daniel Woodriff (Winfield 2007:178).

Table 1. HMS *Endymion* dimensions as built in both imperial and metric measurements (Winfield 2007:178).

Dimensions	**Imperial length**	**Metric length**
Gundeck	140 feet	42.67 metres
Keel	115 feet, 7 inches	35.06 metres
Beam	38 feet, 1½ inch	11.60 metres
Hold depth	16 feet, 4 inches	4.89 metres
Tonnage	893 $^{59}/_{94}$ bm	-
Draught forward	10 feet, 3 inches	3.12 metres
Draught aft	14 feet, 2 inches	4.28 metres

Post-Revolutionary War, many Fifth-Rate vessels were refitted as troop- or storeships (Winfield 2007:180). As they were less advantageous during naval battles due to their limited fire power, many were converted to these transports, allowing for quick transfer of goods and personnel without the need for a convoy as the vessels could retain their upper-deck guns (Winfield 2007:180). Ships such as the HMS *Guardian*, HMS *Chichester*, and HMS *Assurance*, were converted at one point in time to complete this new assignment. Several cannon were typically removed in order to make room for the large amounts of goods or personnel that would be aboard the vessel, leading the vessel to be labelled as armed *en flûte* (Dickson 2012:2). Such as with *Guardian*, where only 16 guns were left for its transportation of convicts and provisions, it is likely that *Endymion*, having been refitted as a troop ship, also carried a lesser number of guns than it was originally rated to carry (Dickson 2012:2). This can also be confirmed by the mention in *A Naval Biographical Dictionary* of, "[…] the Endymion 44, armed *en flûte* […]" (Marshall 1835:104).

2.5 Daniel Woodriff

Born in November 1756 in England's West Country, Daniel Woodriff was descended from a family who had served in the British navy for generations (Cox 1993:128; Fig. 4). Becoming one of the longest-serving members in British naval history, Woodriff's formative years were spent aboard naval vessels (Cox 1993:3). At the mere age of six, he sailed with his uncle to the African coast and on to the Caribbean before returning to England (Cox 1993:5). From 1764 to 1770, Woodriff studied at the Royal Hospital School (Cox 1993:10). With his uncle at sea, Daniel decided to serve an apprenticeship with the merchant company Long, Drake & Long (Cox 1993:13). Between 1770 and 1774 he worked as second officer aboard three of their ships engaged in the Jamaica trade (Cox 1993:13). Unfortunately, the British navy had other plans for him. While returning on a merchant convoy back from Jamaica in 1778, Woodriff's ship was halted at the Nore by the naval vessel *Conquestador* and Daniel was impressed into service (Cox 1993:14).

Fig. 4. A portrait of Daniel Woodriff in 1830 (original portrait, courtesy of Margarite Scott, descendent of Woodriff).

From *Conquestador* he shortly transferred to *Amphitrite*, and for two years from 1779 he patrolled the North Sea until he sailed for North America (Cox 1993:16–17). During his time sailing around America, the West Indies, and back to England, Woodriff was appointed to multiple vessels such as the guard ship *Britannia*, the galley *Dependence*, and the sloop HMS *Bulldog* (Cox 1993). By 1783, he had made the rank of lieutenant and commanded the vessels he sailed (Marshall 1825:540). Woodriff spent this time abroad patrolling and protecting British Loyalists and refugees (Cox 1993:20–21). After rescuing his wife, one of these Loyalists, they were soon married with children on the way (Cox 1993:21–23). The crew was soon ordered to Jamaica to have *Dependence* dismantled before returning to England aboard HMS *Bulldog* (Cox 1993:24).

By this time, Daniel had steadily worked his way up the naval ladder, gaining the trust of his superiors and in January 1789, Lieutenant Woodriff was given command of HMS *Endymion* with a contingent of 96 men (National Maritime Museums Greenwich WDR/1). For some time, *Endymion* worked as a troop ship transporting hundreds of men across the Atlantic to different English outposts (Appendix 2). Its last troop transport was that of the 47th regiment from Cork and France to Halifax and on to New Providence (Appendix 2). From there, the ship continued to Port Royal, Jamaica (Cox 1993:25). The route Woodriff took from Nova Scotia to Jamaica can be seen in the ship's logbook entries and coastal drawings.

2.6 Endymion*'s final voyage*

All subsequent events are as told in the *Endymion* logbook described by Lieutenant Woodriff (National Maritime Museum Greenwich WDR/2). *Endymion* and its crew stayed in Port Royal, Jamaica until 14 August 1790. During this time, the crew went about repairing and cleaning the ship from having the 47th regiment on board for several months. Further duties included working up junk, repairing rigging, clearing out old provisions, painting the jolly boats, and other necessary activities. During their stay in port, the vessel *Cygnet* was presented with orders from Philip Affleck Esquire, Rear Admiral of the Blue and Commander in Chief of His Majesty's Ships and vessels at Jamaica. The command was to deliver guns to Turks Island, today known as Grand Turk, in order to defend the island from a potential Spanish attack. Due to unknown circumstances, the *Cygnet*'s captain was not able to complete the request. As *Endymion* was the only vessel in port besides *Diana* and cutter *Liberty*, Woodriff and his crew were directed to carry out the mission.

Table 2. List of additional materials received on board after launching orders were given on 9 August 1790 (Appendix 2).

Amount	Item
12	Nine-pounder cannon
2000	Shot
8	Cannon carriages
-	Muskets
360 Pounds	Fresh beef
120 Double Pieces	Pork (Cask)

The crew were additionally directed to accompany the merchant vessel *Lord Hood* to facilitate safe passage, as it had missed the sailing convoy for England. A William Miller, his family, and servant were also sent to sail aboard *Endymion* to be delivered to Grand Turk. Woodriff was provided a pilot, Mr. Samuel Barnett, to navigate to Grand Turk and back again. Barnett had at least 12 years experience navigating the Turks Island Passage and was exceedingly familiar with its waters (Appendix 3). After this undertaking, according to Woodriff, *Endymion* was to:

> …return to Port Royal, re-equip her armament and to be used particularly in the suppression of piracy still rampant and it was the Admiral's intention to promote me to the rank of Commander (Cox 1993:27).

From this, it can be argued that the crew had offloaded a part of the vessel's armament prior to departing Port Royal, although a reference to the exact number of guns the ship was carrying has yet to be discovered.

Prior to departure, the vessel was loaded with provisions along with the guns and ammunition required to deliver to Grand Turk (Table 2). As *Endymion* embarked from Port Royal, the ship had a slow journey up to the Turks Bank. Based on the positions provided in the logbook, the vessel headed east, first meeting up with *Lord Hood* off Port Morant on Jamaica's southern coast, before heading north to Cuba and onward to the eastern edges of Haiti, at the time known as Saint-Domingue. From there, the crew sailed north around Cape Nicholas and along the northern edges of Tortuga. The vessel started to head northeast but current pushed the ship further north than intended, to within 10 nautical miles from the southwest edge of the Caicos Bank. *Endymion* tacked south until reaching Monte Cristi, Dominican Republic, and then slowly began to head towards the Turks Bank. During this brief voyage, the crew practiced exercising the guns and carried out repairs as necessary. On the morning of 28 August, the crew, unbeknownst to them, began the last day of sailing on *Endymion*.

The vessel's final journey can be reconstructed on a map based on the compass bearings and distances from certain landmarks noted in the logbook (Fig. 5; Fig. 6). All distances were converted to modern measurements, as mentioned above (league = 18,360 ft; nautical mile = 6,120 ft). The bearings given relayed the direction from the ship towards an identifiable terrestrial landmark on the 32-point compass. These were converted to degrees for each entry and then inverted by 180 degrees to calculate their reciprocal heading. With this information, the heading from the landmark mentioned in the log was taken and the distance calculated was measured, producing the vessel's location. These locations were plotted and the route was further confirmed by the courses noted during each day in the logbook.

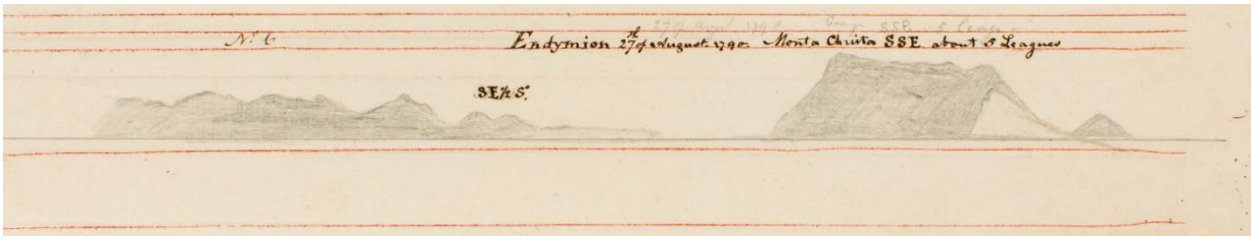

Fig. 5. 'Number 6' coastal sketch by Daniel Woodriff. The caption reads, "Endymion 27th of August 1790. Monte Christa [sic] SSE about 5 Leagues." The sketch depicts the views as seen aboard *Endymion* the day before the wrecking occurred (original sketch, courtesy of Ruud Stelten, private collection).

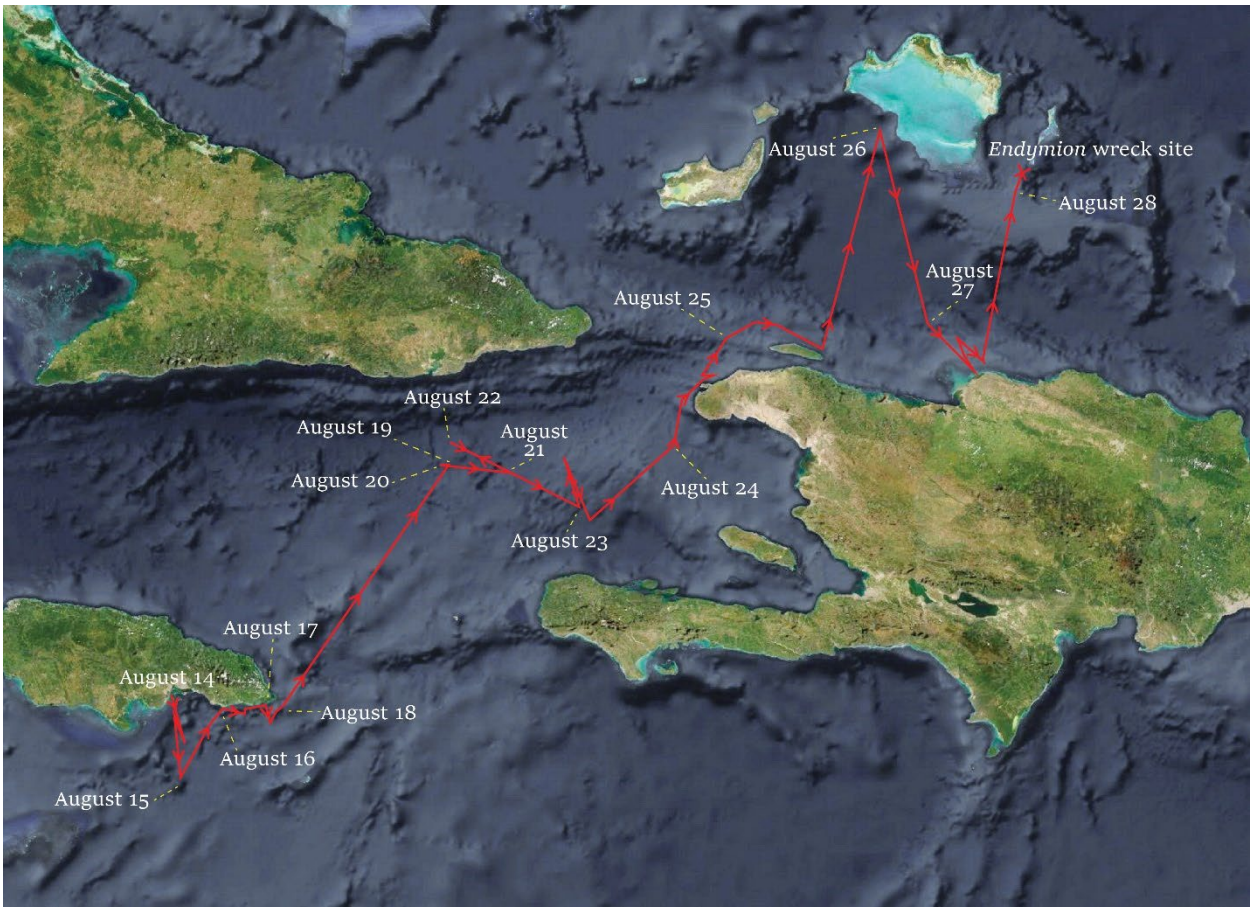

Fig. 6. HMS *Endymion*'s final journey in 1790 reconstructed from the positions given in the logbook (created by the author).

It should be noted that there is a variable degree of accuracy from these determined locations for various reasons. Distances given by the crew were determined by estimation and are by no means precise (Schotte 2019:80). Additionally, multiple locations mentioned throughout the log are large and general landmarks, allowing for a greater degree of variation in distance. This is especially true of the bearings determined in the instances where land was sighted from a considerable distance, and as such these points are not included in the map due to the uncertain nature of the landmark. Although the logbook does provide latitudes and longitudes, these were not used as the degree of accuracy is unknown, making plotting these unreliable (Schotte 2019:80). In summary, although the recreated route shows the *Endymion*'s final journey, the map created depicts the most accurate generalization of the vessel's path.

Although there may be some inaccuracy, understanding the ship's route is important for two primary reasons. First, having a visual representation of how the vessel sailed shows the difficulties Woodriff had while sailing north and how tedious the journey was. The crew continuously had to tack, partly because of the *Endymion*'s square-rigged sails. Square-rigged vessels only had the capability of sailing 60 degrees into the wind, making them hard to manoeuvre upwind (Harland 1984:126). To combat this, these ships commonly sailed in a zig-zag pattern to catch the wind from behind or at oblique angles (Harland 1984:126). In addition to

this hindrance, *Endymion* faced continuous northern winds while heading north, delaying its progress further.

Secondly, it is important to recreate the final journey as there may have been events that would further affect what remains on the shipwreck site. For instance, if the vessel lost an anchor for any reason during the voyage—not an uncommon occurrence—then one could expect one less anchor on the site than is designated to be carried by that class of vessel. Additionally, if *Endymion* had received any other goods after its departure from Port Royal, dropped any off, or jettisoned part during a grounding, that may also be reflected on site. Therefore, the days leading up to the wrecking—which have thus far been largely overlooked—warrant a close examination in order to gain a better understanding of the wreck site.

2.7 The shipwreck event

As the crew headed north from Monte Cristi on 27 August, the vessel struggled and tacking occurred regularly as several miles were lost due to a strong headwind. The next morning at 06:30, the crew caught their first glimpse of Sand Key—today known as Great Sand Cay—from the masthead, lying 4 to 5 leagues away. At this time there were no known navigational hazards in this area, as confirmed to Woodriff when, "The pilot stated there was no danger—nor any shoal to bring a ship up". A sounding of 7 ½ fathoms was taken at 08:00, and less than five minutes later the vessel struck upon an unidentified structure. The captain ordered further soundings to be taken around the vessel which revealed that they had become lodged upon a large, shallow rocky outcrop (Fig. 7).

Multiple attempts were made to get *Endymion* off the rock, including hoving the sails aback, clewing up the sails, and letting the stream anchor drop to pull on the stream cable, all the while pumps were running. Unfortunately, the vessel was well and truly stranded, and as water continued to pour into the hold, it slowly filled up. The officers conferred and agreed to cut the main and mizzen masts to relieve the ship's burden as it seemed impossible to relieve it from the incoming water. During this time a passing ship, *New Hope*, was flagged down and assisted in taking aboard the crew and provisions.

Although the vessel had struck the reef, the rate at which it sunk was slow, allowing for the crew to disembark safely and many of the stores to be offloaded. Various sails were unbent and made up so that they could be taken off the vessel. The crew also tried to save the rigging but it was unable to be retrieved. At 22:15 that night, the men cut away the foremast and sprit-sail yard, and took in the jibboom. Fifteen minutes later, Woodriff described the vessel to be almost completely submerged and starting to break apart. The crew cut away the two bower anchors in hopes that it would relieve the burden of the bow that was fracturing midships. At 22:45 they fired the remaining loaded guns to signal the *New Hope*'s crew as Woodriff expected the vessel to be completely submerged any minute, with only the bowsprit and the stern still visible (Fig. 7). A reconstruction drawing of *Endymio*n's final moments as Woodriff lowered the flag was commissioned by the author and can be seen on the cover.

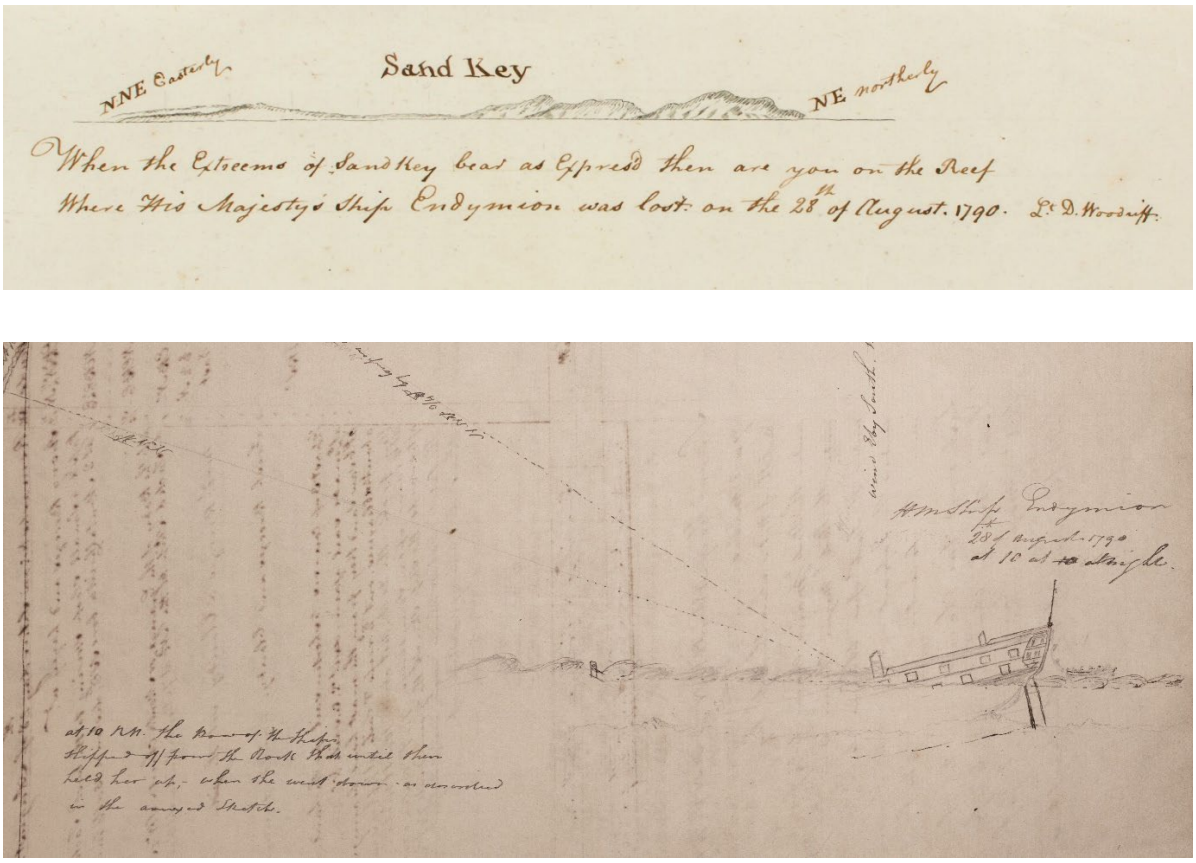

Fig. 7. (Top) 'Number 2' sketch by Daniel Woodriff. The caption reads, "When the Extreems [sic] of Sand Key bear as Expres'd [sic] then are you on the Reef Where His Majesty's Ship Endymion was lost on the 28th of August 1790. Lt. D. Woodriff" (original sketch, courtesy of Ruud Stelten, personal collection). (Bottom) HMS *Endymion* slowly sinking on the reef as drawn by Woodriff (National Maritime Museum Greenwich WDR/2).

At 07:00 the next morning *New Hope* could take no more men. The ship was sunk up to the area of the main mast and no other provisions could be retrieved that had not already been brought up to the remaining dry decks. The schooner *Twins* arrived shortly afterward to assist in the rescue as well. More of the small arms were sent aboard *New Hope* while other stores were brought onto *Twins*. Later that morning, other small boats that had sailed from Grand Turk reached the foundering ship. A Mr Deane, a figure who would continually assist the men throughout their ordeal, arrived offering help to save more of the stores and parts of the ship. Woodriff agreed to this, also stating that he would be duly compensated. The vessel continued to become slowly submerged and at 16:00 Woodriff's final act was to haul the colours down himself. After 34 hours at this sinking vessel, the remaining officers and Lieutenant Woodriff departed *Endymion* for the last time. These men went aboard *Twins*, which had lost anchors during their assistance of the *Endymion*'s crew. The *Endymion*'s launch and cutter were sent with *New Hope* while the jolly boats were sent aboard *Twins*. At last, the remaining crew sailed for Grand Turk, an island lying 38 kilometres to the northeast, and first sighted the extremes of the island at 01:00 on 30 August.

2.8 After the wrecking

The events that unfolded after the wrecking described in the logbook give some insights into the salvage operations that took place along with the survivor's camp the *Endymion* crew had until they were retrieved by the British navy (National Maritime Museum Greenwich WDR/2). Upon arrival to Grand Turk, the first order of business was to construct a tent for the sick, finding suitable accommodations, and sending a number of men aboard *New Hope* back to Jamaica to report on the wrecking. During the time spent on the island, Woodriff did his best to maintain discipline amongst a crew of men who had no standing orders. As mentioned previously, disobedience was a common occurrence in the navy, and with a shipwreck event that likelihood greatly increases. This was seen during the wrecking with the insubordination of a few crew members before Woodriff was able to reestablish order (More Than Nelson 2018). The day after his arrival on Grand Turk, Woodriff purchased 63 gallons of rum from Mr. Rob Wilson and an additional 64 gallons on 18 September for his men after their ordeal. Despite the alcoholic incentive, or perhaps because of it, there continued to be the misconduct of a few sailors. There are seven recorded instances of punishments for disobedience of orders during the time on the island, with lashes being given out in punishment.

Other activities that occurred while the crew waited included drying the rescued sails, assisting with the sick, sounding the road of Grand Turk, making note of the incoming and departing vessels, and most importantly, locating and acquiring water and food for the men (Table 3). Procuring these necessities was an issue, as the water on Grand Turk, "[…] is scarce and very bad" and the island, "[…] have no provisions, but turtle and fish may be caught at times" (Bishop and Hester 1789:67). Woodriff repeatedly tasked men in search of fresh water, who frequently returned with water of poor quality or none at all. For food, fresh beef was purchased from an inhabitant of Salt Cay and possibly also on Grand Turk. Most provisions were allocated for the shipless crew, but a portion of goods were sent with the men sailing to Jamaica and another part of the retrieved shipwreck provisions were given to those who rescued them.

Of particular interest to this study was the interaction with the wreck site after the men arrived on Grand Turk. Woodriff had sent parties of men on two separate occasions to examine the wreck site and retrieve material when possible (Table 4). During these missions, the pilot re-examined the depths around the site, and Woodriff specifically had asked the men to retrieve any guns, the grapnel, anchors, or rope from the site. That said, all that was noted as retrieved from the sunken *Endymion* from that visit was one 9-pounder cannon, a carriage, and a poop lantern. It was stated that the grapnel and the anchor that was lost from *Twins* were unable to be retrieved at the time. Once back on Grand Turk, the retrieved cannon was then placed at the fort where the ordnance was meant to have been brought if the unfortunate accident had not occurred.

It should be mentioned that in addition to *Endymion*'s men retrieving items from the wreck, other interested parties were most likely salvaging from the site as well. Wreck sites are full of items that can be sold for profit or kept for personal use. A shallow site such as *Endymion* was likely easily salvaged in its early stages, weather and water conditions permitting. Besides profit, certain materials recovered were likely useful to those living on these islands, which was heavily reliant on imported manufactured goods.

Table 3. Goods purchased by Woodriff during the stay on Grand Turk. £1 in 1790 is equal to £141.80 in 2022 (based on commodity calculation from measuringworth.com).

Item	Total amount	Cost
Rum	127 gallons	49 pounds, 10 shillings, 8 pence
Fresh beef	944 pounds	25 pounds, 18 shillings, 4 pence
Water	3 small casks; 312 gallons	4 pounds, 15 shillings, 8 pence
Boat hire	-	1 pound, 13 shillings, 4 pence
Sick necessities	-	13 shillings, 4 pence

Bermudians comprised the majority of those living throughout the TCI since their colonization in the late seventeenth century (Jarvis 1998:179). Although salt raking was the most profitable occupation of the time here, Bermudians continued to engage in various other maritime pursuits (Jarvis 1998:317). This included whaling, privateering, and most relevantly, salvaging (Jarvis 1998:317). Between Turks and Caicos and Bermudian waters, salvaging on average contributed to the Bermudian economy between £1,000–£2,000 annually, though this amount increased during especially lucrative years (Jarvis 1998:462). Materials such as iron fittings, ammunition, rigging, cables, timbers, and even cannon and anchors were especially useful to the Bermudian shipbuilding industry and could be sold for a good profit (Jarvis 1998:461).

The remaining crew stayed on Grand Turk from 30 August to 21 September. On 20 September, the sloop *Batchelor* arrived at the island with orders from Admiral Philip Affleck instructing the company to return to Jamaica with as much of the saved stores as could be conveniently carried. The remaining goods that could not be brought were left with Alexander Murray and Robert Wilson Esquire. Before departure, Woodriff paid the debt owed to the men who assisted during the wrecking and their stay on the island (Table 3). He also left the saved ammunition and small arms from *Endymion* with the abovementioned persons. On 22 September, the crew set sail once again, back to Jamaica on *Batchelor*. This sailing proved swifter than heading north, only taking six days compared to the previous fourteen. The men dropped anchor back in Port Royal on 26 September 1790.

After arrival in Jamaica, the crew stayed in port aboard HMS *Centurion*. During this time, Woodriff and the *Endymion*'s clerk proceeded to get the books in order. On 1 October, Woodriff made an application by letter for a court martial over his loss of *Endymion*. This hearing occurred a few days later on the morning of 6 October 1790 aboard HMS *Blonde* (Appendix 3). Woodriff's statement in conjunction with that of his pilot along with the records kept in multiple logbooks were examined. The *Endymion*'s crew and officers were brought on board as well and questioned about the events. Based on the lack of knowledge of the shallow reef, verified by both nautical charts and local testimonies, Woodriff and company were acquitted in just a few hours.

Table 4. Materials mentioned by Woodriff as retrieved from the *Endymion* wreck from the time of the event until their departure from Grand Turk.

Item	Description
Various sails	Foresail, foretopsail, jib, foretop staysail, middle staysail, top mast staysail, new sails, mizzen topsail, main top gallant sail, foretop sail, main staysail, mizzen main sail
Cannon	One 9-pounder cannon and carriage
Small arms and ammunition	-
Bower cable	Partial
Rigging	Multiple pieces
Junk	17½ and 11½ both about 4 fathoms in length
Old rope	Multiple pieces
Lead	Piece from the top of the starboard quarter gallery
Hawser cable	Fathom of a 6-inch hawser cable
Nun buoys	1
Flour	Damaged cask
Vinegar	Cask of vinegar
Oatmeal	Part of a cask
Stores	Various
Provisions	Various
Miscellaneous	Poop lantern

The following day, Woodriff was advised, "[…] by Admiral Affleck to take the earliest opportunity to go home to England as there were none of his majesty's [ships] then expected to go home". He received permission to proceed onto the slaver *Eliza* sailing to Bristol in a few days (Cox 1993:37). Upon departure, he brought with him eight of the late *Endymion*'s crew and two officers of the Royal Artillery. Woodriff reflected on the fateful event he had been through, stating that, "On this unfortunate occasion I lost not only promotion but all my possession by the wreck of H.M. Ship" (Cox 1993:37). The *Endymion*'s men left Port Royal on 10 October and sailed back to England after a journey they certainly would never forget.

2.9 Navigational updates post-wrecking

The wrecking of *Endymion* on a previously uncharted shallow rock meant that navigational charts needed to be updated. With the new inclusion of "Endymion Rock", the completion of charting the Windward Passage and the greater Caribbean region inched closer. This tiny addition to navigational charts may have saved countless vessels from wrecking here in the future. As thousands of ships sailed through the Windward Passage annually, mapping all the navigational hazards was thus a matter of life and death as well as an insurance for a successful journey. This hazard became explicitly known in the late 1790s, but previous wreckings had

most likely occurred here well before that time due to the hazardous nature of Endymion Rock. That said, remains of these probable shipwrecks have yet to be located or identified.

As the late eighteenth century progressed, cartographic depictions of the Turks Bank's southern end began to change as further soundings were added. The bank was drawn as extending only slightly around the southern end of Great Sand Cay halfway through the century but reached significantly further south at its termination (Dépôt de la Marine 1750; Sayer 1775). At Woodriff's court martial, the court examined, "charts […] among which was the latest survey published in 1787 […]" and found that, "[…] the reef on which the Endymion struck, was not found to be laid down in any of them" (Appendix 3). After the wrecking event, the inclusion of Endymion Rock extended the Turks Bank to the furthest point at the time (Fig. 8). Commonly, a annotation mentioning the wrecking was added as a warning to all who pass.

The first known chart depicting Endymion Rock was published in 1794 (Fig. 8). This annotation became increasingly common in the following years, however there were still maps in the early nineteenth century that had not yet included this hazard (Dirección Hidrografía 1815). Additionally, as the nineteenth century progressed, the depths of the Turks Bank came into clearer focus (Blunt and Blunt 1862; Purdy 1848).

In addition to the incorporation of Endymion Rock onto navigational charts, the inclusion of this hazard in pilot books was necessary for safe sailing through the region. A particularly helpful example of this comes from *The Complete Pilot for the Windward Passage* (Bishop and Hester 1789). This book outlines the features of the northern Caribbean, typically outlining the recommendations of sailing from one point to another, and the various smaller passages available between different islands. Tables are also included with the courses, distances, and latitudes between two locations. As such, these books were invaluable to pilots of the time in an area comprised of many hazards and possible routes.

In the 1789 version of the aforementioned pilot book, the Turks Island Passage is described as, "[…] the nearest, shortest, and least dangerous of any for ships going from Hispaniola […]" (Bishop and Hester 1789:6). That said, due to the strong easterly winds, it was also stated by a Captain Hester in 1770, who had been heading through the passage from the northward, that, "Though I should not much recommend Turks Island Passage in coming from the South, looking upon it to be both tedious and hazardous […]" (Bishop and Hester 1789:67). This difficulty can be seen in the laboured route *Endymion* was forced to take from the moment it left Port Royal (Fig. 6). It was thought at this time that the southern entrance of the Turks Passage was only guarded by Great Sand Cay in the east and the Bush Cays in the west, and as mentioned in the pilot book, vessels must, "[…] get within a league or two of it; you may pass by it at that distance […]" (Bishop and Hester 1789:60). Furthermore, the hazards around Sand Cay are listed, such as the shallow rocks on the eastern side of the island, but no other danger is mentioned proceeding it (Bishop and Hester 1789:61–63).

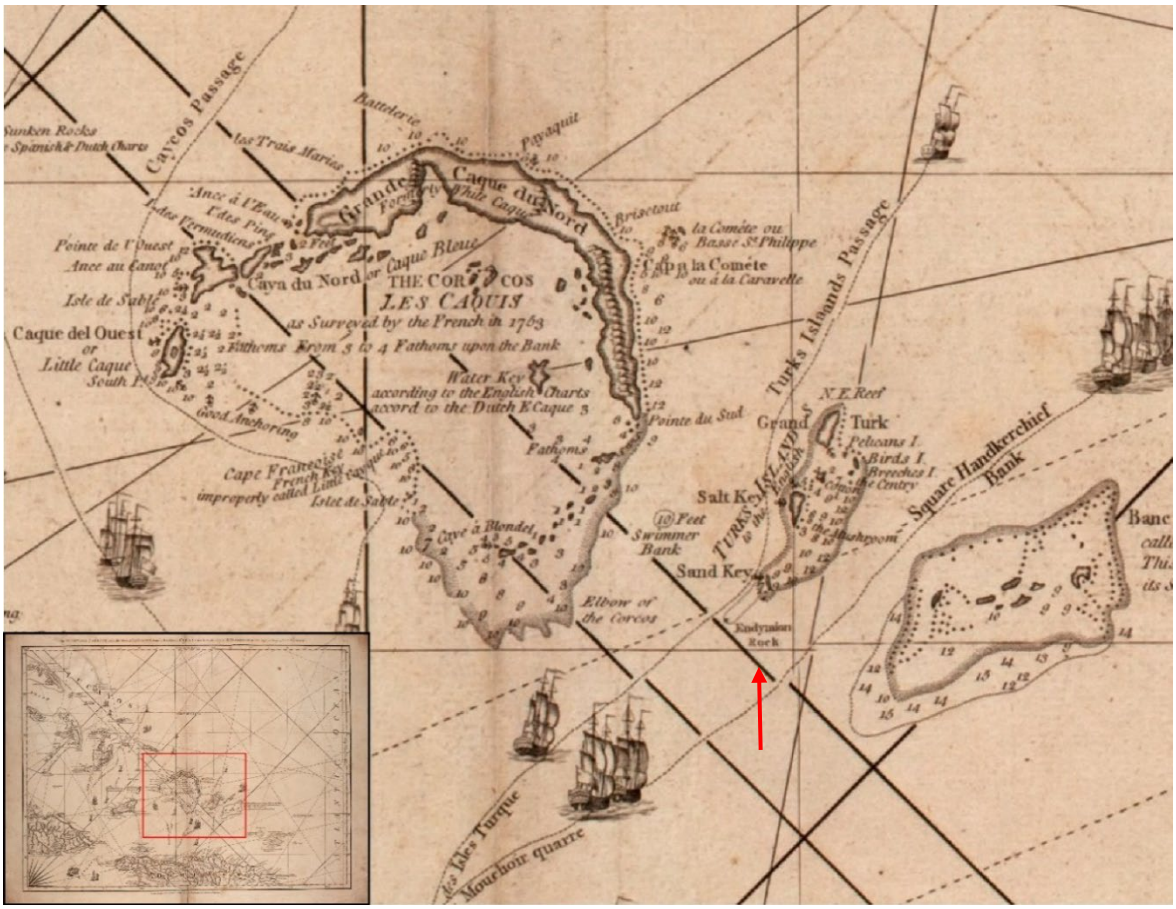

Fig. 8. A map originally by Thomas Jefferys and reprinted by Laurie & Whittle in 1794 depicting Endymion Rock for the first time (courtesy of Ruud Stelten, personal collection).

An affixed page at the beginning of the book mentions the, "Corrections, Additions, &c. made by Lieutenant Daniel Woodriffe, of his Majesty's Ship Endymion, in 1790" (Bishop and Hester 1789). This is critically important, as it presents the remarks that Woodriff made during the journey through the Windward Passage. Not only is Endymion Rock mentioned, but smaller adjustments such as slight changes to latitudes and longitudes, depths, distances, and courses during the journey as well. Regarding the wrecking of his ship, a note from Woodriff states that, "The Endymion Rock lies S.W. by S. from the body of Sand Key, distance 8 or 9 miles, and has only 8 ½ feet water on some rocks other have 2 fathoms," (Bishop and Hester 1789) giving warning to all who passed. Despite updated navigational information and the appearance of Endymion Rock on charts, ships continued to wreck here.

3.0 Theoretical framework

The study and theory of marine site formation processes appeared as soon as the field of maritime archaeology began to establish itself. Maritime archaeologists must understand the complex processes that influence a shipwreck site for their study. From pre-impact to the wrecking event, through to post-disaster, the intricacies of each of these temporal divisions are crucial to systematically reconstruct the environmental and cultural processes that have affected the site in question.

In what is generally considered the first attempt at quantifying underwater site formation processes, Muckelroy (1978) explains the importance of distinguishing the different influences on a vessel from the moment of the wrecking in a general sequence of events. He primarily focuses on the environmental factors that work on a wreck site, with a rather brief mention of the cultural aspect. Additionally, Muckelroy concentrates on the influences on the vessel and the associated artefacts after it has sunk with a very brief mention of material deposited post-wrecking, creating the view of the ship as a time capsule from a singular depositional event (Gibbs 2006:5). Once deposited, a site can be affected by either filters—forces that extract material from the assemblage—or scrambling devices, which rearrange a vessel's material throughout the area (Muckelroy 1978:159). From his discussion, Muckleroy produces an underwater site taphonomy flow chart which serves as a foundation for further studies (Muckelroy 1978:158). Using this baseline, further studies into underwater processes, such as Schiffer (1987), McCarthy (1998, 2005), Ward et al. (1999), and Gibbs (2006), were produced.

Multiple other researchers have either touched on or further discussed the different aspects that go into this dynamic theory with every author contributing and discussing a missing aspect. Schiffer (1987) mentions the important distinction as the wreck moves from a systematic to archaeological context, and the re-use and secondary use of related artefacts. Keith and Simmons (1985) make a distinction between the post-wrecking act of salvage during antiquity and modern salvaging. On the same line, McCarthy (2005) discusses the difference between primary and secondary salvage. When studying a wrecking, the event itself should be further looked at through the cultural lens of disaster response. Leach (1994), as mentioned by Gibbs (2006), produced a useful list that consists of five major stages of disaster response. Most importantly, with this he examines the pre-impact and post-wrecking factors within a broader sense (Gibbs 2006:7–8). Although human behaviour is hard to quantify, by trying to understand it using different lines of evidence, systematically evaluating it, and through the creation of a quantifiable sequence, maritime archaeologists can get closer to comprehending this crucial influence on shipwreck sites.

A more contemporary discussion was presented by Harpster (2013). He specifically addresses the issue of how maritime shipwreck site investigations are typically ideographic and historically particular (Harpster 2013:589). Harpster states how researchers studying shipwreck sites have applied affiliations using four different methods (Harpster 2013:592). These current methods can ignore the multicultural nature of seafaring activities, instead presenting only a single cultural story line (Harpster 2013:617). *Endymion* falls under Harpster's "Type A" category, as a shipwreck identified through historical research and then located (Harpster 2013:592). Through its location and features of the site, *Endymion* was confirmed as the wreck in question. The historical data concerning the vessel plays a primary role in all investigator's perceptions of the ship and site. Most of what is known about the *Endymion* site comes from this history, with the archaeological material being studied to provide details not seen in the located documentary record.

A particularly notable study was conducted by Gibbs (2006), who worked to expand on Muckelroy's model. In his paper, Gibbs reviewed other site formation studies with a concentration on how they were insufficiently addressing the cultural aspect of a shipwreck site. Through studying these other theories and Muckelroy's model, Gibbs proposed an updated site formation processes flow chart that allowed for an increase in the understanding of the human behaviours surrounding a shipwreck (Fig. 9). His inclusions are especially important as they

incorporate what led up to the event, how the event itself was handled, and how the aftermath was managed.

In turn, this influences what is left on the site for maritime archaeologists to study. By structuring our understanding around the nature of the wrecking event, a sequence and range of potential responses at each stage can be produced. Gibbs furthermore made the important point that these influences, both cultural and environmental, do not cease to exist on the site (Gibbs 2006:18). This is especially useful for understanding salvaging operations and how to quantify them. As salvaging is one of the greatest influences on what remains on a site, understanding the process of it, from opportunistic to systematic, is necessary to see how the site may have changed.

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Fig. 9. The flow of cultural site formation processes on a maritime archaeological site (Gibbs 2006:16 fig. 2).

In the case of the *Endymion* shipwreck, this site has been greatly influenced by cultural and environmental factors. The cultural influence occurred primarily during the time of the event. The crew initially had time to recover most of the provisions, personal items, and sails before leaving the site. Further visits by the crew and locals allowed for additional material to be salvaged, both noted in the logbook and looted. This leaves the larger and heavier items such as anchors, cannon, and ballast as the primary evidence left behind. Further cultural influences have acted on the site since, at a more intermittent pace. The environmental impacts on site, working on the remaining material to degrade, deteriorate, and destroy, have worn away most of the organic remains. This will be further discussed later on.

4.0 Research methodology

Various preparatory steps were taken prior to visiting the *Endymion* wreck site. First, extensive archival research was conducted in order to establish a comprehensive historical context. A visit by the author to the National Maritime Museum Greenwich in England along with requests to The National Archives in Kew to procure relevant historical documents was conducted. These documents were then transcribed by the author. This line of evidence was explored in detail to establish the vast context in which *Endymion* existed. By realizing this, the archaeological remains on site can be predicted and understood to a higher degree. Secondly, previous investigations of the wreck site were assessed. This was necessary in order to see how the site may have changed since the initial recording in 1992 and what influences may have caused these alterations. Third, a permit for scientific investigation was applied for and granted by the TCI government (Appendix 4). In July 2023, in the employment of The Shipwreck Survey, the author visited the island of Salt Cay for a period of two weeks.

Lying approximately 23 kilometres northeast of Endymion Rock, Salt Cay is the southernmost inhabited island in the Turks Bank. The team chartered the 9.5-metre, double-decked catamaran boat of the local dive operation, Salt Cay Divers, in order to visit the wreck site. The boat ride took approximately one hour, during which the island of Great Sand Cay was passed at 9.6 kilometres northeast of the wreck site. On 9 July conditions were relatively calm for open waters, a necessary calculation in order to be able to both reach the site and dive there. Upon arrival at the site, the boat anchored 50 metres from the site to the west, which was the closest it could get due to the shallow reefs surrounding the wreck site. The research team, consisting of three archaeological supervisors and six students, was able to enter the water for a single dive of 80 minutes. Water conditions that day included clear visibility reaching 30 metres, a temperature of 28°C, and a medium to strong current coming from the east. The diving depth ranged between 8 and 13 metres. Equipment brought on the dive included recording slates, tape measures, scale bars, and an underwater camera.

Photogrammetry was performed first, as it was deemed the most important and useful recording technique for multiple reasons. By initially creating an accurate 3D rendering of the site, the area could be quickly mapped in its entirety in the limited time allotted. Second, by using the model and comparing it with the site plans made during previous investigations (1992, 2000, 2007) along with the 3D model created in 2019, the changes that have occurred could clearly be seen. Third, by using the photogrammetric model, an elevation model could be created to better portray the site's topographical differences. As the site lies surrounded by a reef system, it was important to note the height variation. Fourth, creating this model also aids in monitoring the site over time. By making multiple photogrammetric models over subsequent years, the changes that occur on the remains can be seen with more clarity, Lastly, a 3D model provides a means of presenting the site to the TCI government, other researchers, and the general public. By producing models such as this, those who cannot access the site are able to experience what it looks like in an interactive way.

An Olympus EM-5 Mark-III mirrorless camera with a Panasonic-Leica 8–18mm lens shot behind a 6-inch acrylic dome port was used to capture photographs of the entire site. A total of 1,215 photographs of 20 megapixel resolution were taken across the entire site and the neighbouring passage. The shallow areas of the reefs were unable to be included in the model due to current and swell. Top-down photographs were taken in a U-pattern transect, followed by

oblique photographs across the site. In addition to photogrammetry, artefacts selected prior to the dive were investigated and photographs taken of each. These included the four anchors, a horseshoe clamp, keel bolts, the cannon pile, wooden hull remains and sheathing, metal ballast, the stem, ammunition, and the hanging knee. These artefacts were chosen as they had been previously identified at the site.

Besides creating a photogrammetric model and the survey of particular artefacts, further archaeological investigations were planned. These included taking detailed measurements of the four anchors, all cannon, and other noted prominent features. The visit was limited to a single dive during the research day due to strong currents, and continual bad weather for the remainder of the research trip prevented additional visits to the site, and therefore these tasks are still outstanding. This is the unfortunate reality when studying underwater archaeological sites in remote locations that are significantly exposed. The conditions, both weather and water, dictate the availability of site visits, and is a further reason why this site has only been briefly studied previously even though it rests in shallow Caribbean waters.

Data processing began with detailed editing of every photograph in Lightroom Classic (v. 11.1). Photographs were initially sorted into 54 folders based on light and colour composition. Each folder was then batch-processed within the software where colour and lighting were adjusted to create a uniform set of images. Smaller edits in single photographs were made when necessary. The final images were then uploaded into Agisoft Metashape software (v. 2.1.1) in order to render a complete photogrammetric model of the site. The model was created by aligning photographs, creating a sparse cloud and then with more detail a dense cloud, lying a mesh over the points, and finally a texture. All steps were performed at either high or highest resolution in order to produce the most detailed model. After its completion, an orthomosaic was exported with a resolution of 50216 × 33706 pixels (1.69 gigapixels). Subsequently, the produced image was placed into Adobe Illustrator (v. 26.5.1) and a site plan was drawn.

In addition to the model that was created, local interviews were conducted on Salt Cay with persons who have visited or have knowledge of the wreck site. During the visit, the author volunteered specifically for The Shipwreck Survey's "Cultural Continuity in the Turks and Caicos Islands" project which includes oral histories told by local residents. Three interviews were conducted, with the questions aimed at looking at what has changed since the interviewee had heard about and/or visited *Endymion* (Appendix 1). With their permission, a voice recorder was used to capture the interviews, which were later transcribed. These are reproduced in Appendix 1 courtesy of The Shipwreck Survey archives. These insights assisted in determining the differences the site underwent in the years before and between the archaeological investigations.

5.0 Results

Using the two photogrammetric models created in 2019 and 2023 in conjunction with first-hand accounts and data from previous archaeological investigations, the site formation processes of the *Endymion*'s wreck site can be studied in detail. Notable differences can be observed over the years since the initial documentation of the wreck site. The following sections discuss the different prominent features of the site and selected artefacts and their changes seen since 1992. These elements were chosen for analysis as they are the most identifiable features from the remains of the wreck and comprise the majority of the site.

5.1 Site plans and photogrammetric modelling

Site plans were created during the initial archaeological investigations of the *Endymion* site. During Bound's brief visit, the team mapped 18 cannon, 1 carronade, 3 anchors, and 1 unidentified artefact across a 40-metre baseline (Fig. 10). A decade later, Keith produced a photomosaic and site plan of a portion of the site (Fig. 10). For the first time, other artefacts are included, such as iron pigs, hull remains, keel bolts, the intrusive anchor, the horseshoe clamp, the iron hanging knee, and the stem. Furthermore, the surrounding reef structure is also drawn, showing the context of the vessel remains. No scale bar was placed on either the mosaic or site plan. Keith states this site plan was drawn based on a preliminary sketch plan of the area that the team created over three dives on site lasting an hour each. There is no mention of the methods used to create the sketch underwater within the published article.

During Keith's subsequent visit, another photomosaic was produced (Fig. 11). After stitching the images together, cannon and anchor outlines were placed overlaying the image. Newly located cannon were specifically identified on this plan in yellow. Unfortunately, no new site plan was created nor a complete photomosaic that included the entire site and other associated artefacts. Additionally, no scale or north arrow was placed on the photomosaic. During the 2019 visit, a photogrammetric model was produced but no site plan was drawn (Fig. 12).

The use of site plans in archaeology have accurately related the contents of an area under investigation. By applying scientific methods such as baseline-offset measurements, and trilateration, a two-dimensional rending of the site can be precisely created. This is especially useful when identifying the location of smaller artefacts and features not easily seen in photographs. Implementing this practice underwater is more difficult and time-consuming than in a terrestrial setting. Limitations to the dive, water and weather conditions, or project timelines may not allow for the most complete or accurate site plans to be created. This is reflected in the three plans below. When overlayed with one another, all show a variable margin of distance and error.

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Fig. 10. (Left) Bound's 1992 plan of the *Endymion* site (Bound 1998:213 fig. 8). (Right) Keith's 2000 plan of the wreck site (Keith 2001:51).

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Fig. 11. Photomosaic and plan of cannon and three anchors from 2007 site visit with the addition of newly located cannon in yellow (Keith 2008:7 fig. 8).

In 2019, the first photogrammetric model of the *Endymion* site was produced (Fig. 12). The conditions during the visit allowed for easy collection of photographs and the clear visibility is reflected in the model. Although only showing a portion of the site, this model represents one of the most accurate depictions of the area. The details of the reef structure, elevation differences, sediment coverage, and marine life in relation to the *Endymion* wreck are all seen for the first time. Furthermore, key artefacts and their context within the site can be seen in greater detail in these models. The 2019 model is particularly important as it shows the changes that have occurred since the impactful Hurricane Irma a few years prior.

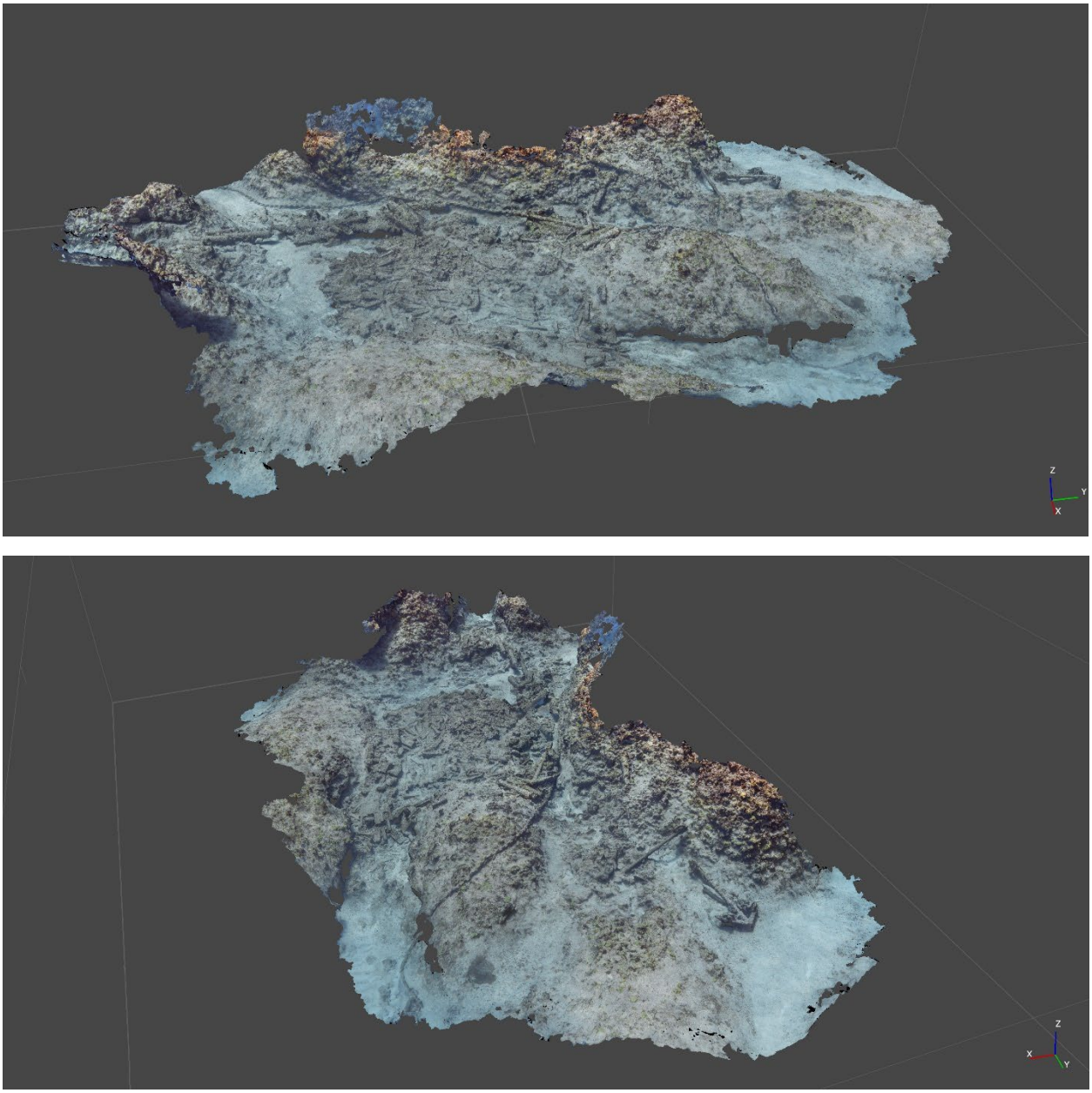


Fig. 12. Photogrammetric model of the *Endymion* wreck site in 2019 (courtesy of Ruud Stelten).

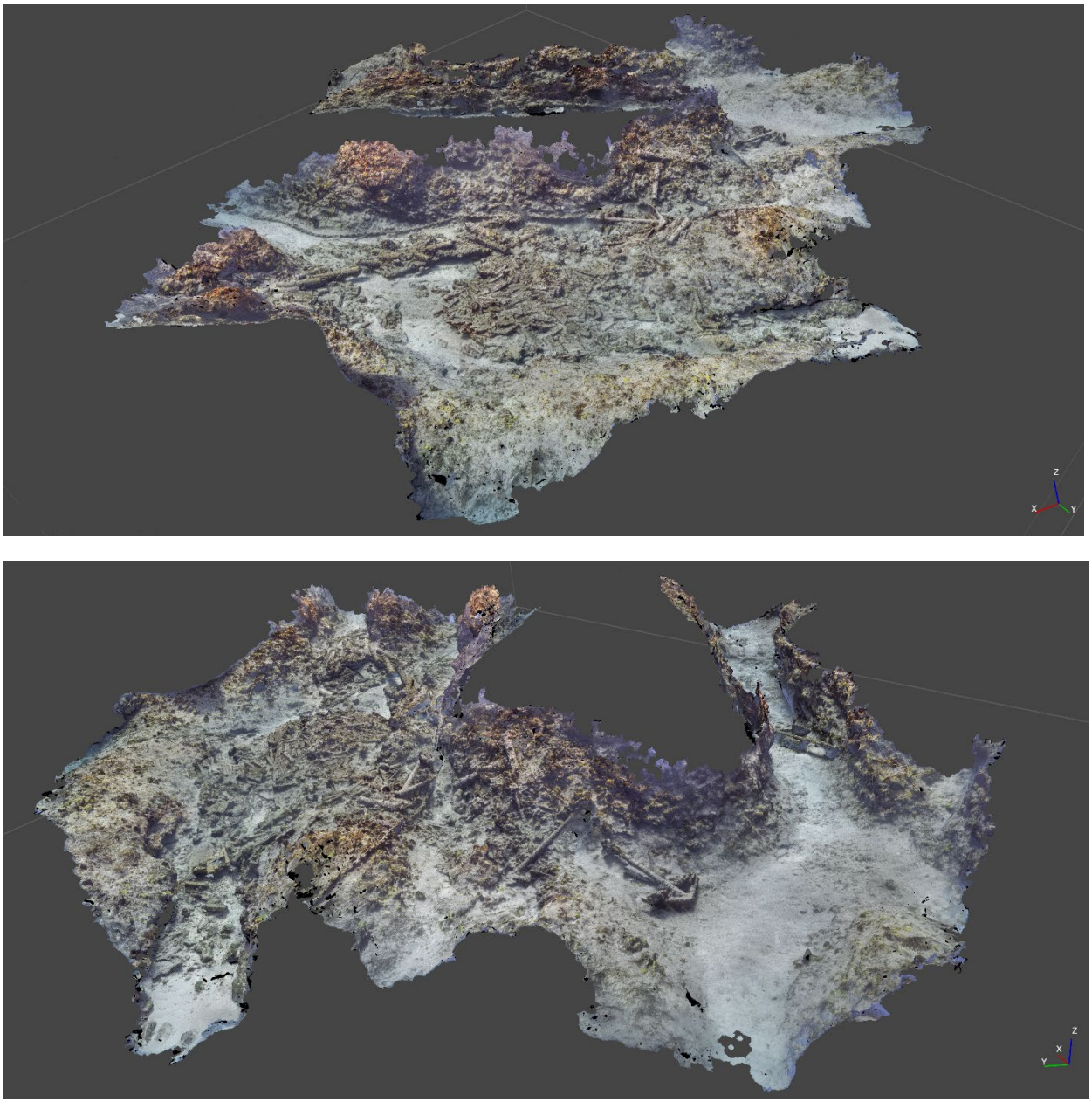


Fig. 13. Photogrammetric model of the *Endymion* wreck site during the author's 2023 visit (created by the author).

During the 2023 archaeological site visit by the author, photogrammetry was given priority due to the limited time at *Endymion* (Fig. 13). After the photographs were processed and the model produced, an orthomosaic was exported from the software and a site plan drawn based on the mosaic and model (Fig. 14; Appendix 5). A more detailed rendering of the site was produced with detail of remaining artefacts. By creating a site plan based primarily on this 3D model, an accurate depiction of the layout of the artefacts was produced.

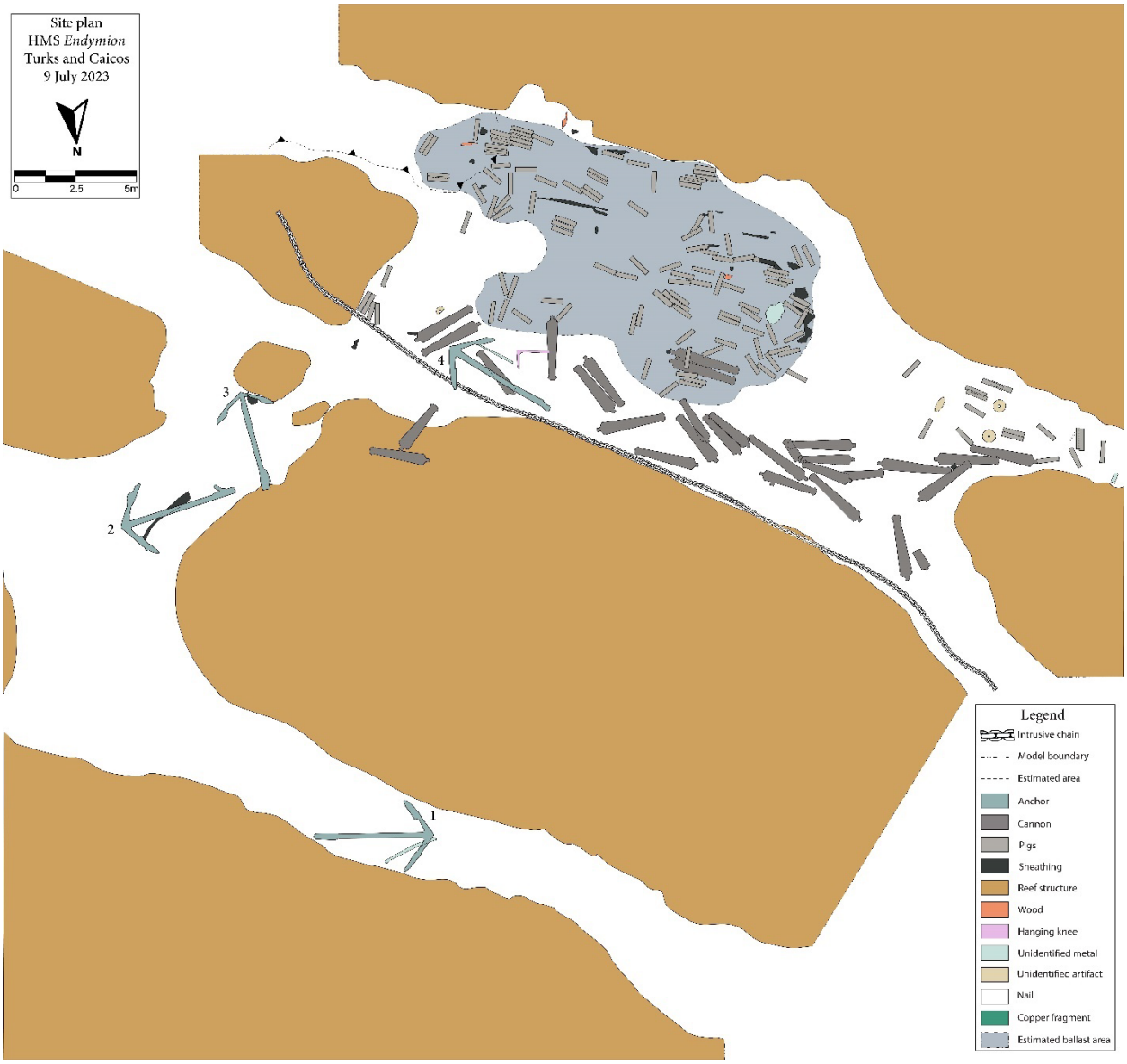


Fig. 14. Site plan of the *Endymion* wreck site based on the photogrammetric model produced from the 2023 visit. A further detailed model can be seen in Appendix 5 (created by the author).

While the use of 3D modelling has assisted maritime archaeologists in recording sites and artefacts in greater detail, there are limitations with this method. As mentioned previously, smaller artefacts and features are harder to see with only the model as a reference. Concerning the *Endymion* site, the pieces of sheathing and fastenings were the most difficult to identify due to their diminutive size. Furthermore, by only basing the identification of artefacts on the produced model there is the possibility of mistaking natural features as shipwreck remains or vice versa. Therefore, by utilizing both photogrammetry along with artefact identification while on site, the most precise site plan of the *Endymion* wreck site to date could be created.

5.2 Anchor 1

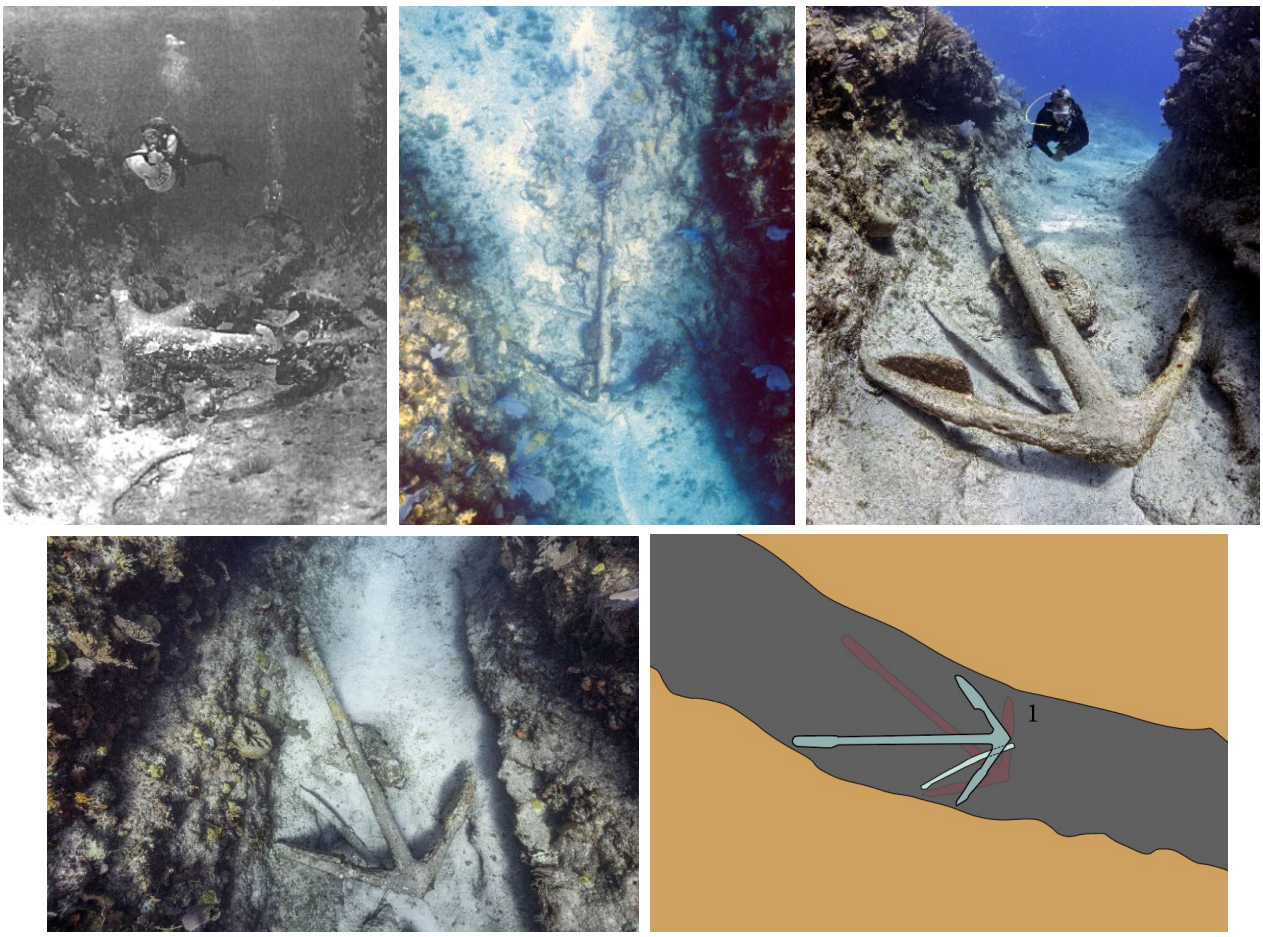


Fig. 15. (Top left) Anchor 1 from Bound's investigation, facing east (Bound 1998:214 fig. 11). (Top middle) Anchor 1 photographed during Keith's 2007 visit (courtesy of Donald Keith). (Top right) Anchor 1 photographed during Stelten's 2019 visit, facing southeast (courtesy of Ruud Stelten). (Bottom left) Anchor 1 photographed during the author's 2023 visit (image taken by the author). (Bottom right) Diagram showing the changes in location of anchor 1 from 2007 (in red) to 2019 (in blue) (created by the author).

Anchor 1 is located between one of the grooves of the reef structure, to the north of the main wreck site. The anchor measures just over five metres according to Stelten, making it the largest out of the four (Morsink and Stelten 2019). It lies almost parallel atop a long strip of metal. Photographs of the anchor have been gathered from site visits by Bound, Keith's 2007 investigation, and Stelten (Fig. 15). Although there are photographs of the anchor, is has not been included in any previous site photomosaics, photogrammetric models, or published site plans. This may be due to the distance from the site, the time constraints mentioned in the previous investigations, and possibly other considerations. Based on Bound's image along with video references provided from Keith's 2007 expedition, the anchor was originally oriented in a northwest-southeast direction, with the ring against the south side of the gully. In these images, the anchor is encrusted with marine growth as is the seabed it lies upon.

By the time of the 2019 survey, the anchor had drastically changed. It had been moved to lie in an east-west direction with the ring now on the northern side of the gully (Fig. 15). In addition,

the anchor and surrounding gully had been stripped of most of their sea life. During the 2023 investigation, the anchor was in the same position as seen in 2019, with new marine growth, although nowhere near what it had been in the earlier surveys. Lastly, the long metal fragment beneath the anchor has shifted in the years between each of the investigations.

5.3 Anchor 2

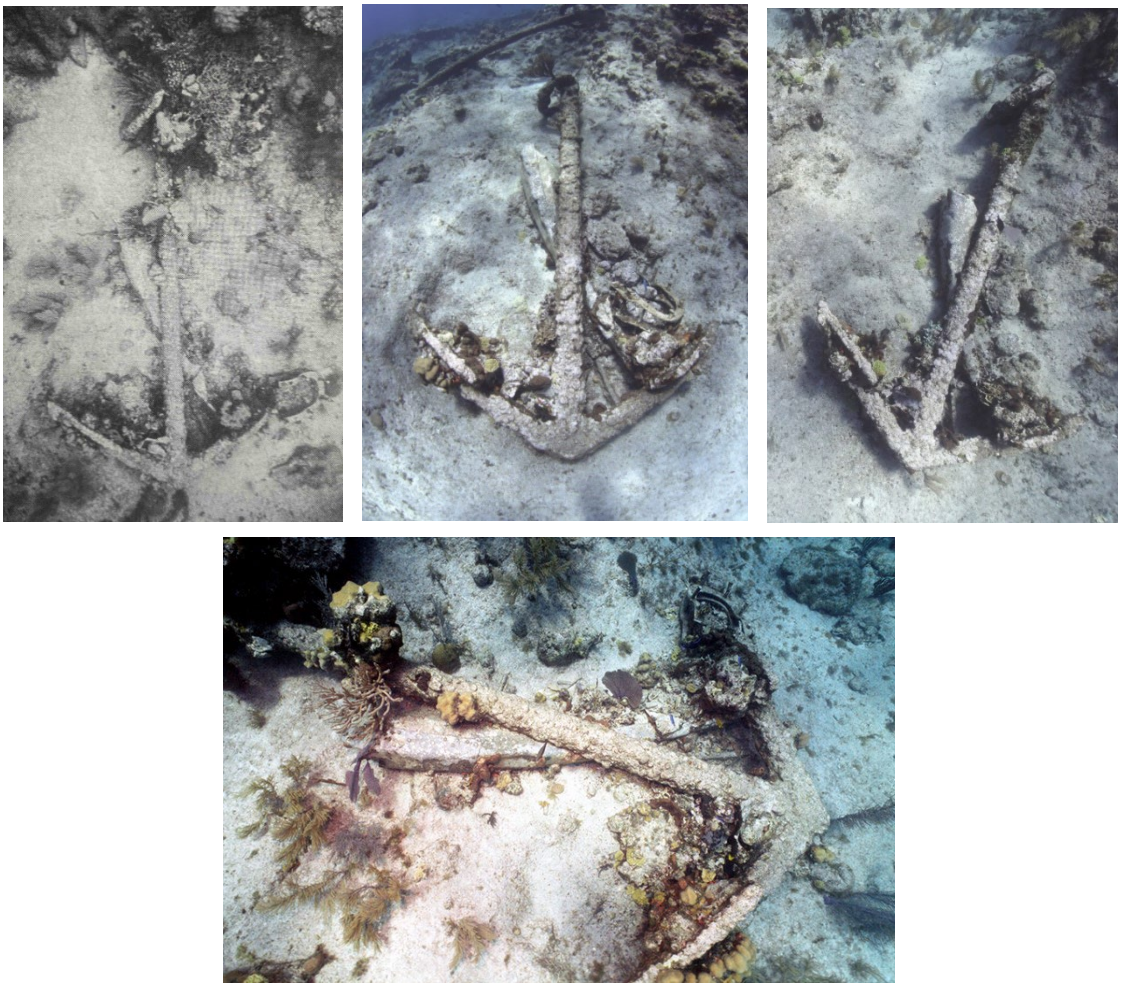


Fig. 16. (Top left) Anchor 2 photographed by Bound in 1992 (Bound 1998:214 fig. 12). (Top middle) Photograph of anchor 2 during Stelten's visit in 2019 (courtesy of Ruud Stelten). (Top right) Anchor 2 as seen during the author's visit in 2023 (image taken by the author). (Bottom) Anchor 2 photographed during Keith's 2001 visit (Keith 2001:52).

Anchor 2 is located on the far eastern side of the main wreck site. The anchor is oriented in a northwest-southeast direction with the ring to the northwest and has a shank measuring 4.5 metres according to Keith (Keith 2001:52). The anchor superimposes the stem while a horseshoe clamp used to sit on the northern fluke, both of which will be discussed below. Photos and/or videos from all archaeological investigations are available, allowing the changes to this cluster of artefacts over time to be more easily studied (Fig. 16). Both Bound and Keith only briefly discuss the anchor, with a greater discussion of the surrounding artefacts. In these earlier

recordings, the anchor is heavily encrusted, with large spots of marine growth by the ring and surrounding the arms and flukes. By 2019, the anchor, as with the others, is almost entirely clear of marine growth. During the 2023 investigation, marine growth had reappeared along and surrounding the anchor, particularly on the arms and flukes. No other changes or position movements were noted from the earlier investigations.

5.4 Anchor 3

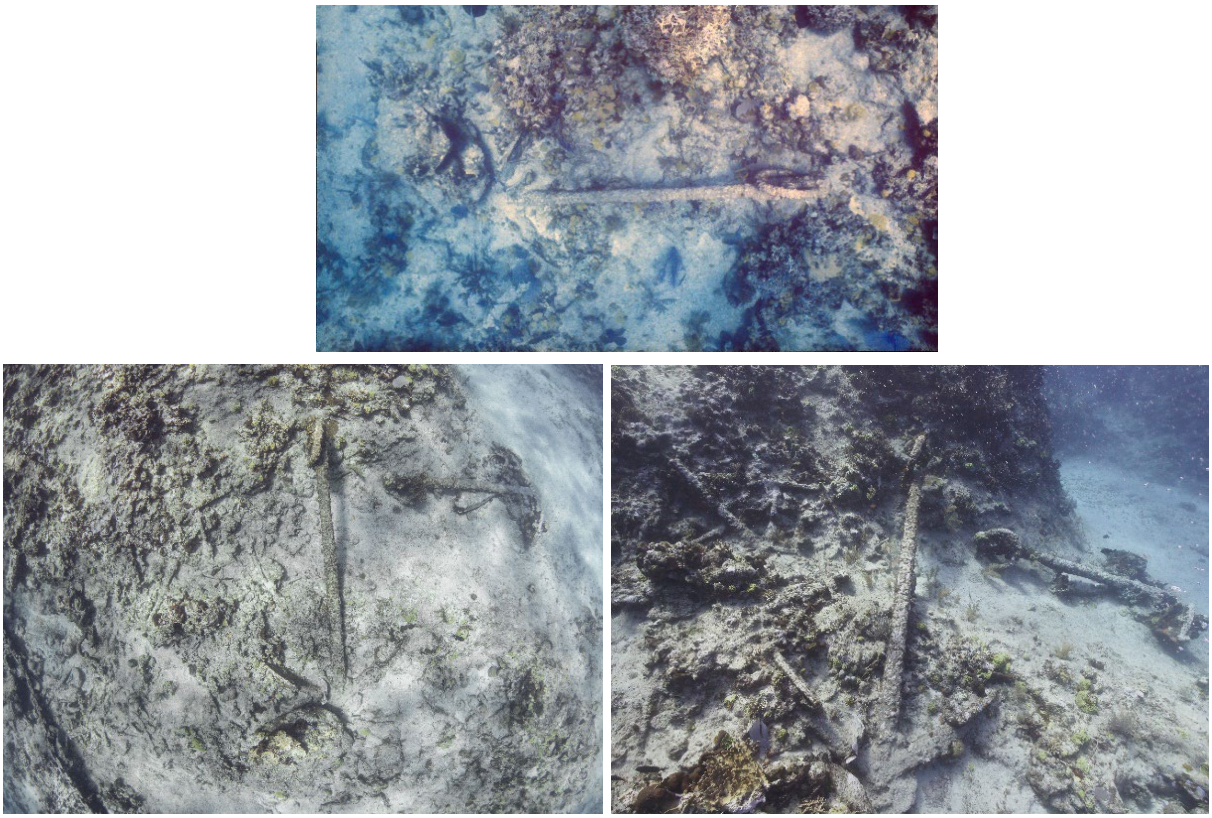


Fig. 17. (Top) Photograph of anchor 3 from Keith's 2007 site visit (courtesy of Donald Keith). (Bottom left) Anchor 3 as it lay during the 2019 investigation (courtesy of Ruud Stelten). (Bottom right) Anchor 3 photographed during the author's visit to the site in 2023 (image taken by the author).

Anchor 3 is situated directly west of anchor 2 and is oriented in a slight northeast-southwest direction with the ring towards anchor 2 (Fig. 17). Also measuring 4.5 metres, the anchor lies slightly upright along the side of the central reef structure and is surrounded by a rocky bottom and several metal fragments (Keith 2001:52). No images are available from the initial two site visits. An image from the 2007 investigation was provided from Keith's personal collection, in which the anchor is partially buried from the crown to halfway up the right arm and a section of the left. This image, in conjunction with the photographs from 2019 and 2023, show that the anchor was never heavily overgrown by marine life and possibly was very similar in appearance during Bound's visit. Since 2007, anchor 3 does not seem to have moved significantly, but the crown seems to have become slightly uncovered by sand. Lying around the left arm near the

crown is a metallic object, possibly another piece of stem sheathing based on its location, which has not moved since 2007.

5.5 Anchor 4

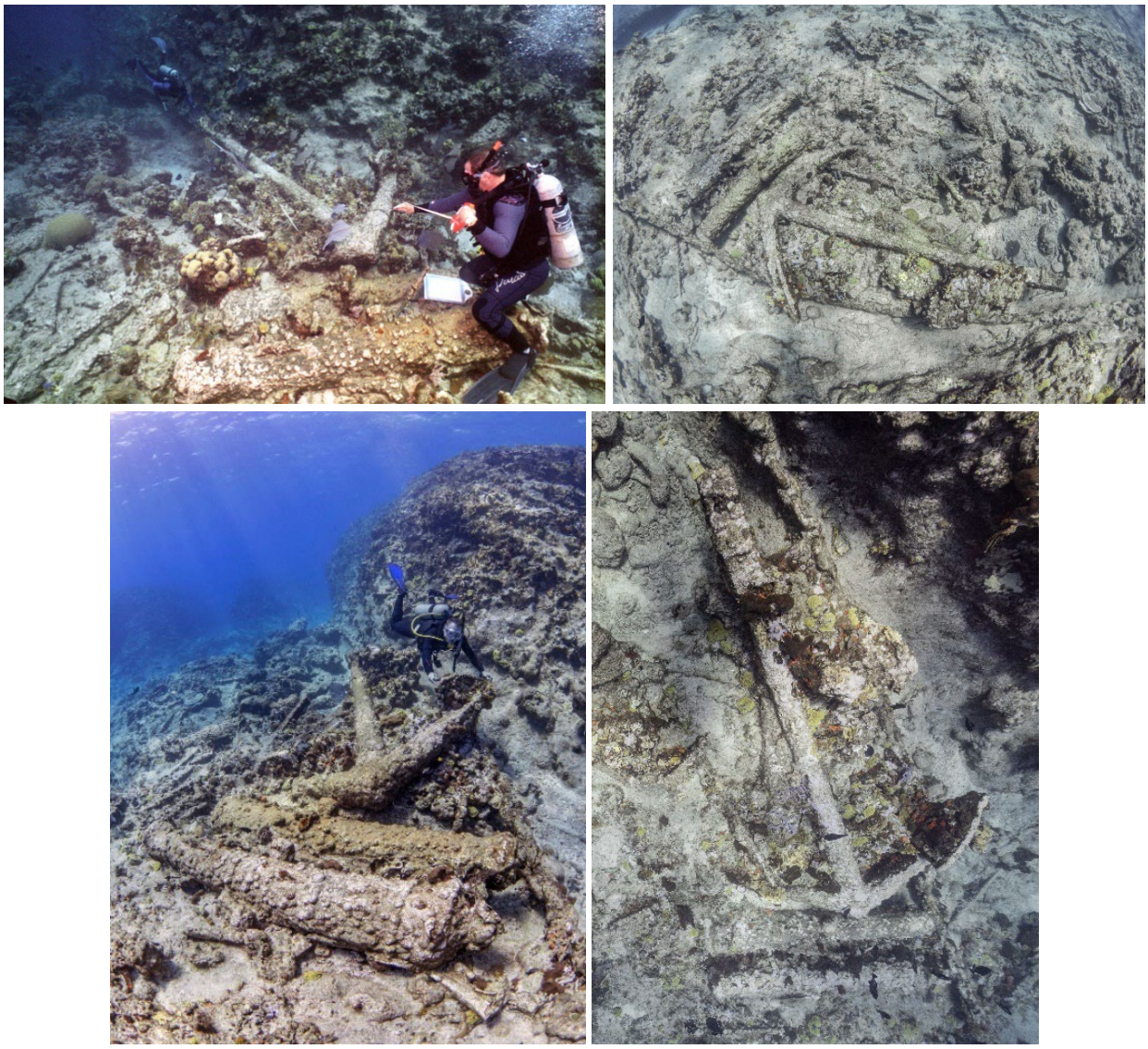


Fig. 18. (Top left) Image of anchor 4 at the distance (Keith 2001:55). (Top right) Anchor 4 photographed during Stelten's 2019 site visit (courtesy of Ruud Stelten). (Bottom left) Anchor 4 with two cannon in the foreground and a diver in the distance (courtesy of Ruud Stelten). (Bottom right) Photograph of anchor 4 during the author's 2023 visit (image taken by the author).

Anchor 4 is located on the south side of the central reef structure, in the northern area of the site. The anchor itself is surrounded by cannon, ballast, and various metal fragments (Fig. 18). Its shank measures 4.5 metres and is oriented in a northwest-southeast direction with the top of the shank towards the northeast (Keith 2001:52). This is the only anchor on site that does not have a ring, though the hole for one is present. The left fluke is partially buried as the anchor lies at a

slight angle against the reef. Two cannon sit parallel to the southern arm and an intrusive anchor chain runs underneath the northern arm. Although it is counterintuitive to have an older artefact superimposing a younger one, this chain from the Companion Wreck's vessel was likely caught underneath anchor 4 during its wrecking event. Additionally, the anchor shaft lies atop another cannon which is positioned at a slight angle to the shaft. Although no images were published in Bound's report of anchor 4 nor in Keith's 2008 report, an image with the anchor in the distance was included in Keith's 2001 article. The marine growth surrounding the anchor has decreased since 2001, but no other changes have been observed.

5.6 Cannon pile

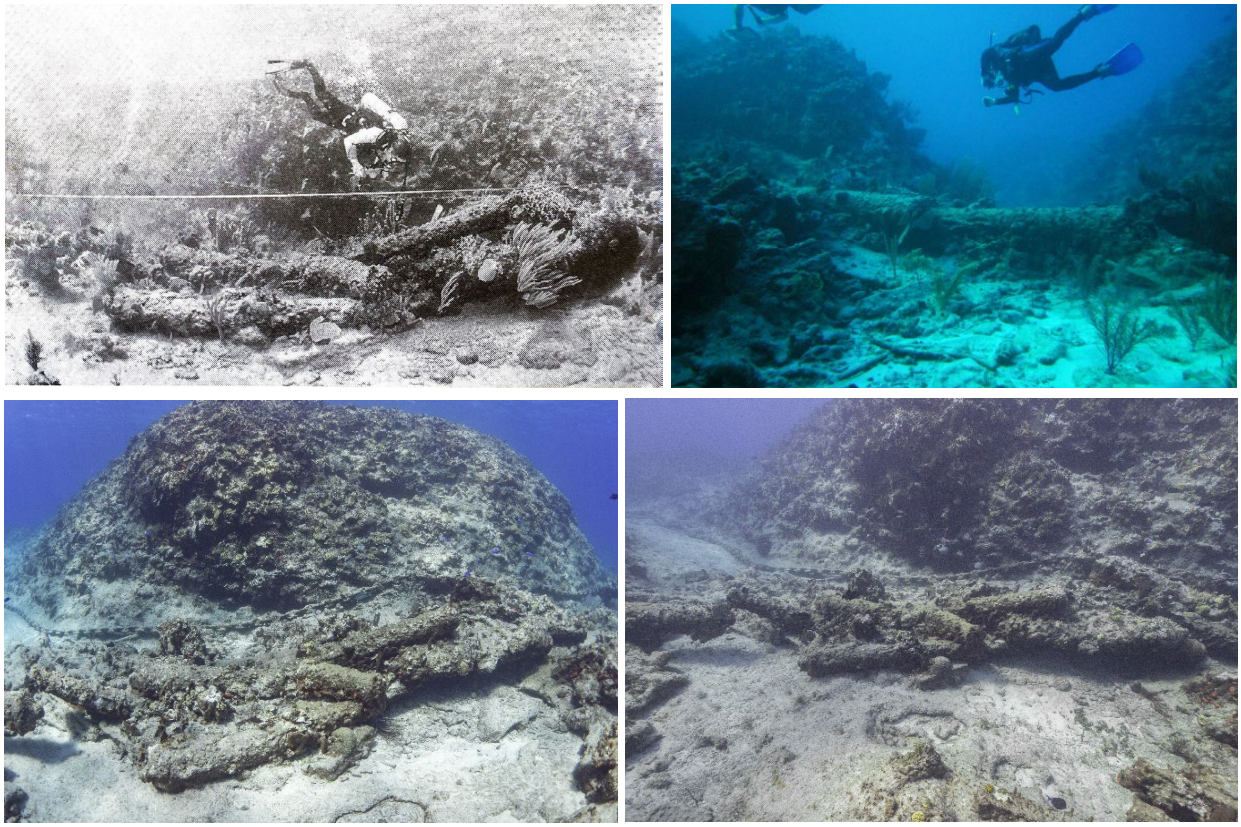


Fig. 19. (Top left) Photograph of a section of the cannon pile during Bound's 1992 visit, facing north (Bound 1998:214 fig. 10). (Top right) Image showing only a limited view of the pile during one of Keith's investigations, facing north (courtesy of Donald Keith). (Bottom left) Overview of the centre of the cannon pile during Stelten's visit, facing northeast (courtesy of Ruud Stelten). (Bottom right) Overview of a majority of the cannon from the author's 2023 visit, facing northwest (image taken by the author).

A large concentration of cannon are located on the southern side of the central reef (Fig. 19). Most cannon lie along the reef structure and continue further into the western gully in an east-west orientation. Two cannon in the easternmost part of the line rest on the central reef structure at a shallower depth. Two carronades are also present within the concentration on the western section. A pair of cannon that were difficult to recognize are located in the main ballast area and covered by iron pigs. The number of identified cannon during the archaeological visits have

increased from 18, to 22, and a few years later to 28, all excluding the two carronades. During the 2019 visit, the cannon were not counted (Ruud Stelten pers. comm. 2024).

A total of 28 cannon and 2 carronades were located during the 2023 visit (Appendix 5). All are heavily concreted making the identification of some difficult, although the rings and trunnions were still visible on a majority of cannon. Between the 2019 and 2023 site visits, the cannon have not moved. When comparing between the earlier investigations, slight discrepancies are seen in the cannon location, although it is unsure if this is due to the objects moving or inaccuracies in plotting. Compared to the earlier investigations prior to Hurricane Irma, the cannon are now only slightly covered in marine growth which looks to have been regrowing since the 2019 visit. Bound and Keith identified the majority of the cannon as the eighteen-pounders that the vessel sailed with, although the concretion and marine growth hampered a complete confirmation (Bound 1998:213; Keith 2001:54). No measurements were taken of the cannon during 2019 or 2023 and as such there is no verification of their classification.

5.7 Stem

A fragment of the vessel's stem, sheathed in copper, is located underneath anchor 3 at an east-west angle. The stem of a vessel is comprised of curving timbers that form the curve of the bow. Keith states that this fragment was part of the vessel's cutwater, the area of the bow that cuts the water as it sails (Keith 2001:56). Comparing the images from 1992, the stem fragment has not undergone any noticeable changes. As it is pinned beneath a heavy object, unless anchor 2 moves it is likely the stem will continue to remain in place. Images of this artefact can be seen in the figure above (Fig. 16).

5.8 Horseshoe clamp

One of the more distinctive artefacts at the site is a large horseshoe clamp (Fig. 20). This clamp is an iron plate used in vessel construction to connect the junction between the stem and forefoot (Steffy 2011:273). This double clamp is comprised of two pieces of U-shaped bronze that are held together with eight bolts. In Bound's chapter, the clamp is not mentioned but is photographed on the tip of the northern fluke of anchor 2 (Fig. 16). This is again seen in Keith's 2001 and 2008 papers, in the same position as seen in the 1990s (Fig. 16). Keith mentions the clamp and its purpose along with recording its location on the 2001 site plan (Fig. 10). By 2019, although still present, the clamp had moved from its previous position to in between the right fluke and shank. During the 2023 investigation, although the site was fully surveyed, the horseshoe clamp was not located.

Fig. 20. (Left) The horseshoe clamp from Keith's 2007 investigation (courtesy of Donald Keith). (Right) The horseshoe clamp photographed during Stelten's 2019 visit (courtesy of Ruud Stelten).

5.9 Sheathing

For centuries, experiments were conducted to discover the best way to protect ship hulls from wood-boring marine organisms and fouling from growths. While the Dutch may possibly be attributed with the first experimental use of copper sheathing in the early 17th century, the British navy began testing this advancement in 1761, and in the following years widely adopted it in vessel construction (Rees 1971:86; Van Duivenvoorde 2015:349). This entailed tacking various cuts of copper of different thicknesses onto a vessel's hull below the waterline (Staniforth 1985:30). Copper sheathing would be of a thicker density on the bow while the thinner pieces rested on the stern (Staniforth 1985:43). Not only did it solve the two main issues mentioned above, but it also increased sailing speed (Rees 1971:86). By 1780, almost all British naval vessels were coppered (Rees 1971:86). The following years had many of these same ships replacing their iron bolts and fastenings with copper to reduce the effects of galvanic corrosion (Rees 1971:86).

Evidence of the *Endymion*'s copper sheathing is mentioned by Bound and Keith (2001) as pinned beneath the metal ballast with other crumbled masses of sheathing throughout the site. By 2019, the sheathing continued to be dispersed as the previous reports stated, however, additional loose pieces showing initial stages of corrosion were seen (Ruud Stelten pers. comm. 2024). These were likely recently uncovered during the powerful surges of Hurricane Irma. During the 2023 visit, the vessel's sheathing was still seen compressed beneath the ballast in large sheets along with additional loose pieces scattered throughout the site, primarily in the southern area (Fig. 21). A more detailed survey should be performed to find the location of all sheathing remains.

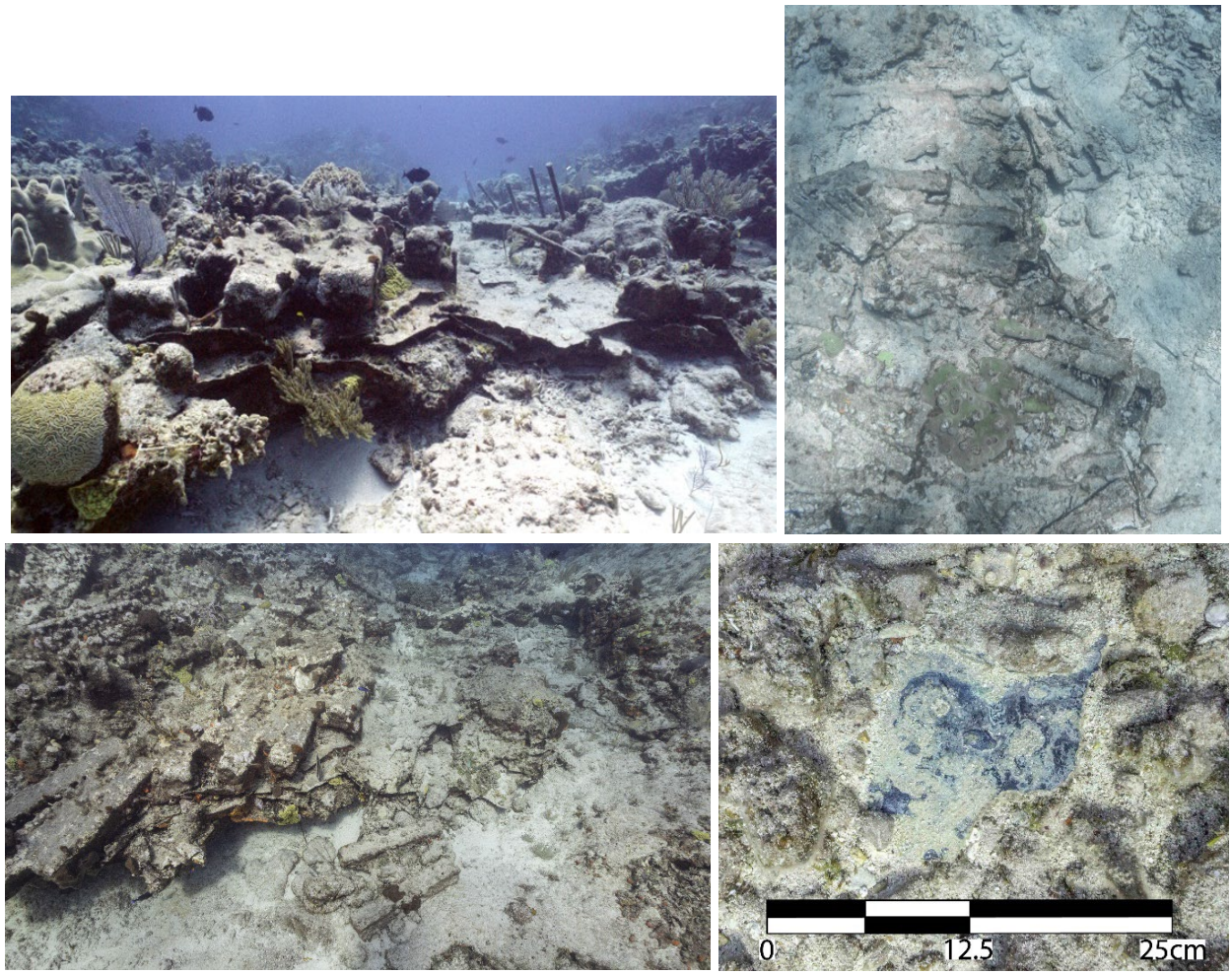


Fig. 21. (Top left) Copper sheathing pinned underneath iron pig ballast with keel bolts in the background during Keith's investigation, facing southeast (courtesy of Donald Keith). (Top right) Top-down view of sheathing fragments during Stelten's 2019 site visit (courtesy of Ruud Stelten). (Bottom left) Overview of main area of vessel sheathing as seen during the 2023 investigation, facing southeast (image taken by the author). (Bottom right) Detail shot of a sheathing fragment loose in the southeastern end of the site (image taken by the author).

5.10 Hull timbers

As *Endymion* was a wooden vessel, it is possible that wood remains have been preserved under the right conditions. Fragments from the wooden hull were not mentioned during Bound's brief visit. Keith addressed the wood remains after his visit in 2000. He stated that he identified hull fragments underneath the ballast, a large section of wooden planks on the southern side of the area, and outer hull planking at the northern end of the site between the cannon line and ballast mound (Keith 2001:55). The only image of these remains provided is the cross-section of a portion of hull sheathing, but the identification of the wood in the image is difficult (Fig. 21). No mention of the wood remains are mentioned during Keith's later visit. Based on Stelten's 2019 model, the hull remains are primarily seen under the ballast pile with few fragments in the southern section of the wreck site.

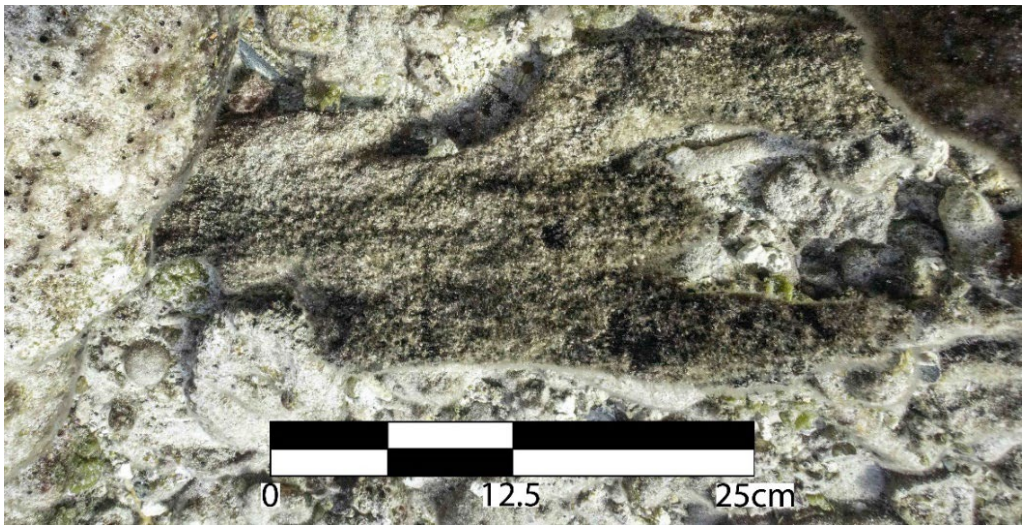


Fig. 22. Timber fragment from *Endymion* (image taken by the author).

In 2023, only a few fragments of timbers were seen (Fig. 22). These pieces were noted loose along the southern end of the site and pinned underneath some of the ballast. The areas with wood remains noted by Keith, such as the planks by the row of cannon and the large section of wooden planks on the south side, were both no longer seen on site. It is possible that these were damaged and dispersed by the impactful Hurricane Irma and that the majority of the surviving hull remains were pinned underneath the ballast and sheathing pile.

5.11 Keel bolts

A prominent feature previously mentioned in the surveys of the site was a row of keel bolts protruding from the seafloor along with a section of the keel. Keel bolts, used as a means of holding together the keel, frames, and keelson, are a vital part of vessel construction as they keep together the ship's metaphoric backbone (Keith 2001:52). Bound briefly mentions these artefacts, stating that there was, “part of the keel structure with a row of large, upward-pointing keel bolts” (Bound 1998:213). Unfortunately, besides an image showing only a section of this feature, no other mention was made about the number of bolts or the length they cover (Fig. 23). On the other hand, during Keith’s 2000 visit, he describes the feature in greater detail, stating that there were 13 bronze bolts, each measuring a yard long, jutting from the sand and running in an east-west orientation for 45 feet (Keith 2000:5; Keith 2001:52, 55). No mention of the bolts was made in the 2008 report but an image from Keith’s private collection shows the bolts still in place at the time of that investigation (Fig. 23). During the 2019 visit, Stelten stated that the keel bolts were no longer in place (Ruud Stelten pers. comm. 2024). For the author’s 2023 investigation, the site was searched for remains of the keel bolts and two were seen lying on the seabed around the area of their initial location.

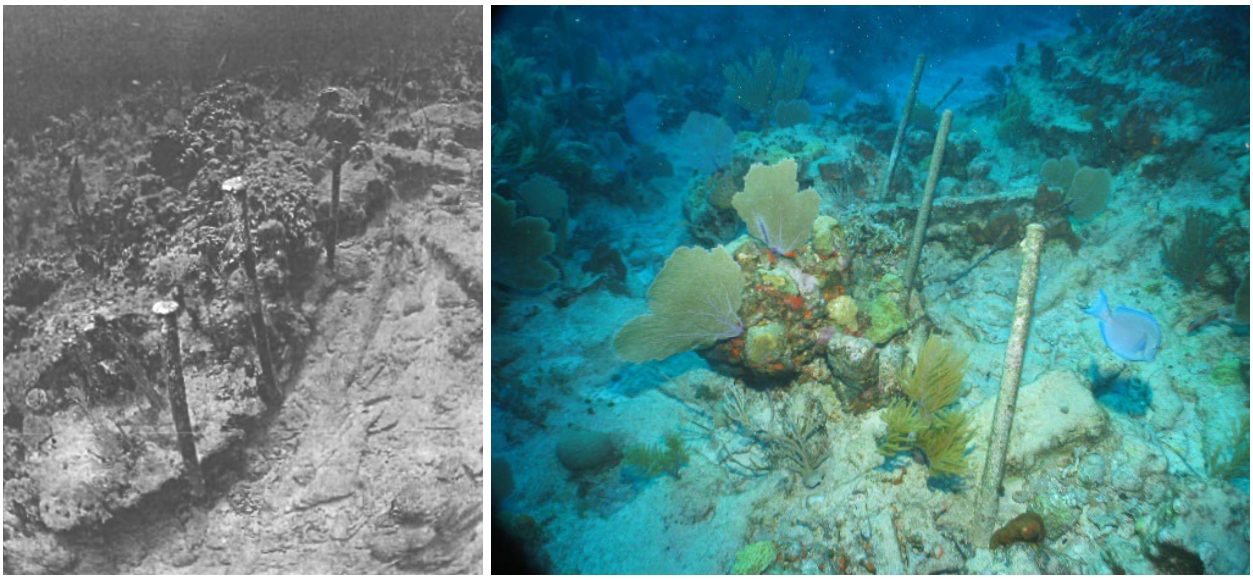


Fig. 23. (Left) Detail shot of three keel bolts protruding from the seabed in 1992, facing southeast (Bound 1998:215 fig. 14). (Right) Detail shot of four keel bolts and associated marine life in 2007, facing southeast (courtesy of Donald Keith).

5.12 Hanging knee

A hanging knee is located along the south side of the shank of anchor 4 (Fig. 24). This iron artefact was used as reinforcement for the junction of a beam and the side of the vessel to help with the support of a ship's deck (Steffy 2011:272). Experimentation of the iron knee as a replacement for a wood knee began c.1670 and lasted throughout the eighteenth century (Goodwin 1998:26). The French's initial use of iron knees in ship construction influenced England through the publication of Duhamel du Monceau's *Treatise on Naval Architecture* (1752) which depicted the further use of iron in shipbuilding (Goodwin 1998:28). Although the formal introduction of iron knees in English naval construction was not until 1805, shipbuilding designs implementing this as a means of structural repair or strengthening device had been seen already (Goodwin 1998:31). It is likely that the presence of this artefact on site shows a repair *Endymion* undertook during one of its refits.

During Bound's site visit, no mention of the iron hanging knee is made. During Keith's 2000 survey, he depicts the knee on his site plan and photomosaic (Fig. 10). Within the article, he further discusses the artefact and its importance for vessel dating (Keith 2001:55). That said, Keith's later 2007 site visit does not mention the hanging knee nor depict it in his photomosaic. The 2019 investigation noted the hanging knee on site which can be seen in the photogrammetric model. The location of the artefact was different from Keith's 2001 site plan, and it is unsure if this is due to the movement of the object or error during plotting. As seen in the 2007 photographs, the knee's position was the same as seen during the later investigations.

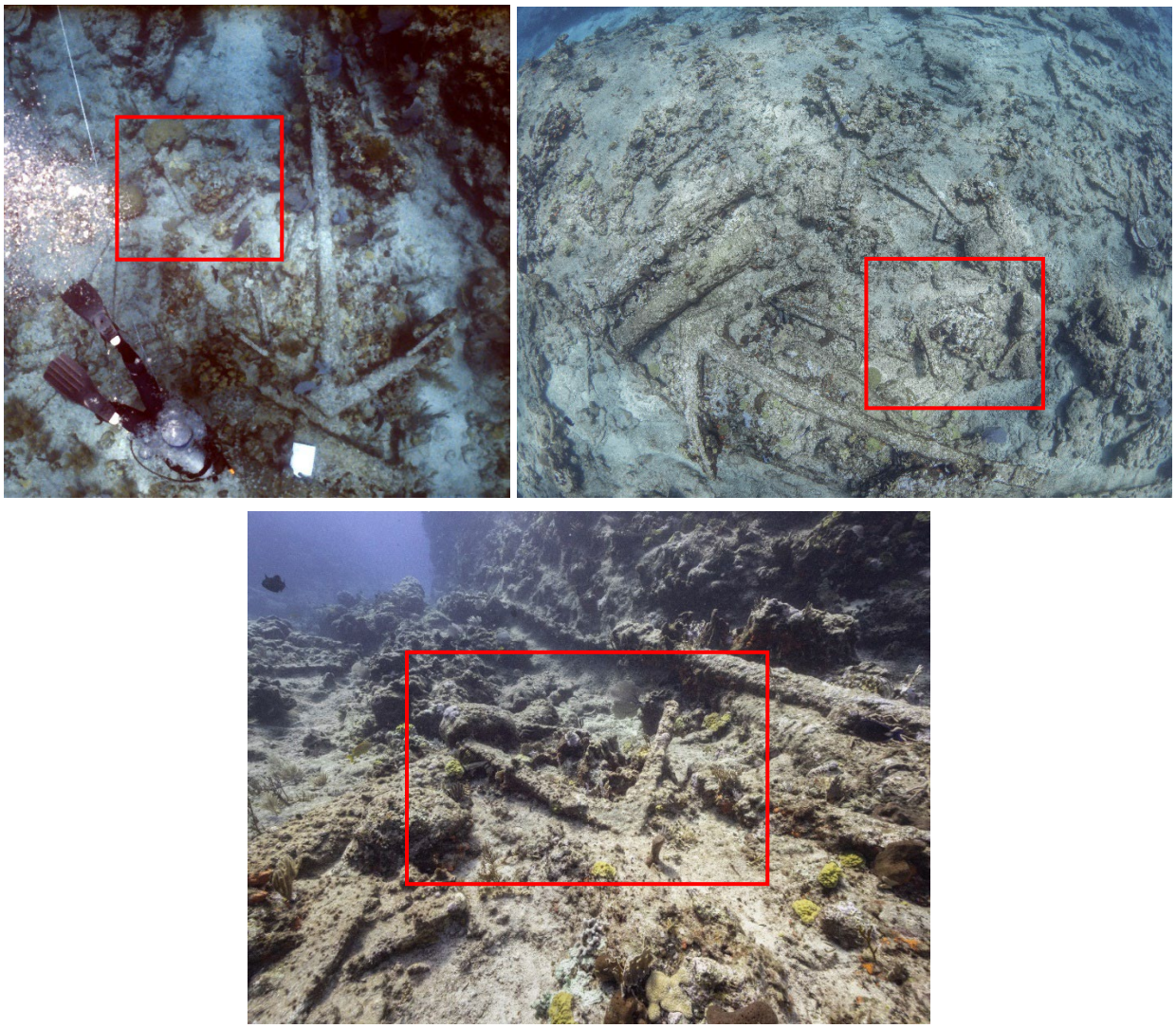


Fig. 24. (Top left) Distant image of the hanging knee on the left side of the anchor shaft during Keith's visit (courtesy of Donald Keith). (Top right) Overview photograph of anchor 4 and the hanging knee during the 2019 Stelten visit (courtesy of Ruud Stelten). (Bottom) Close-up of the iron knee during the author's visit to the site (image taken by the author).

5.13 Ballast

The main area of the site is comprised of a large pile of pig iron ingots (Fig. 25). These bars, or kentledge, were used as ballast placed along the bottom of the hold to make the ship more stable while sailing (Nantet and Martins 2023:1). First employed during the 1730s by the English, these uniform bars replaced the use of shingle or various scrap metal as ballast such as defective or damaged cannon or broken anchors (Nantet and Martins 2023:403). Although they occasionally varied in size, the standard for the English navy was 91 x 15 x 15 cm (3 ft x 6 in x 6 in) with a weight of 145 kilograms (320 pounds) (Nantet and Martins 2023:415). These bars were commonly stacked with a majority placed forward of midships (Lavery 1987:186).

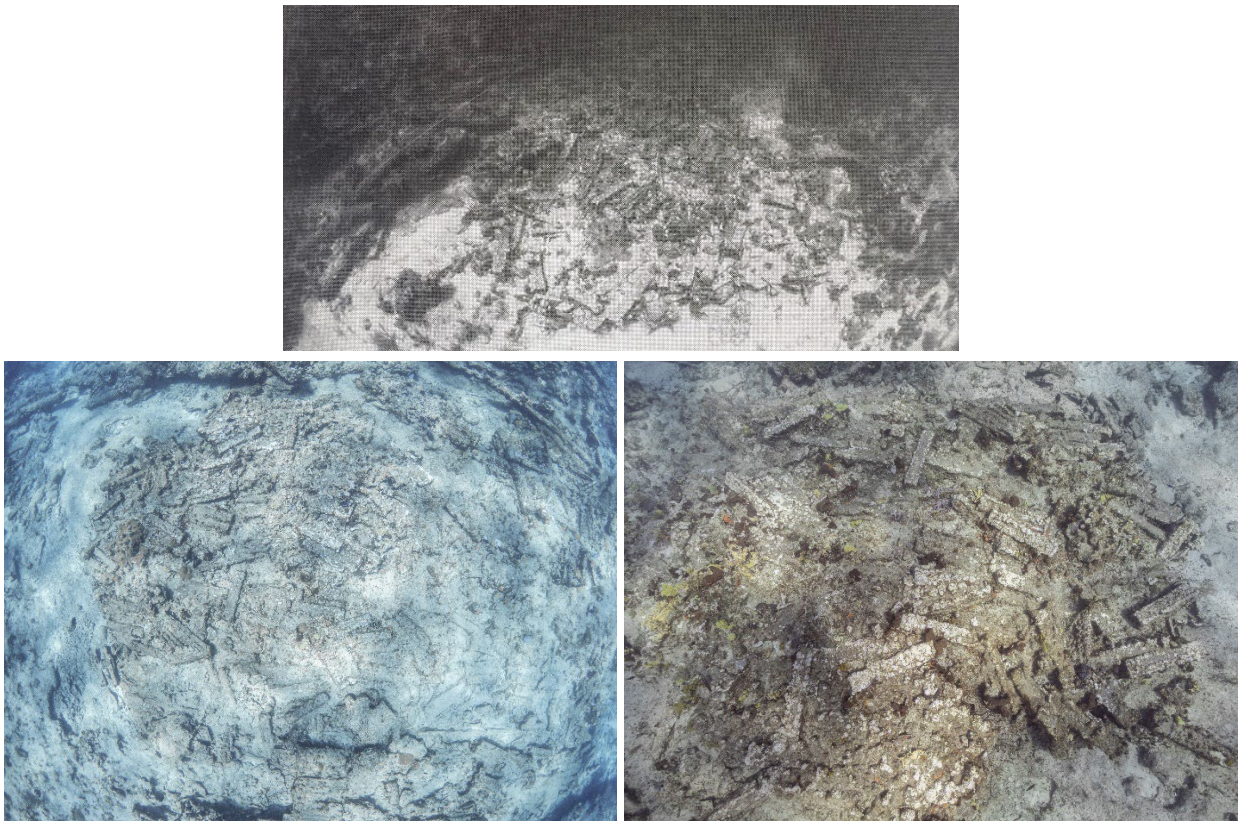


Fig. 25. (Top) Overview image of the main ballast area during Bound's 1992 visit, facing east (Bound 1998:215, fig. 13). (Left) Overview of the main ballast pile during Stelten's 2019 visit (courtesy of Ruud Stelten). (Right) Overview of the main ballast pile during the author's 2023 site visit (image taken by the author).

All ballast bars are located in the southern area of the site and extend to the western and eastern borders (Fig. 14; Appendix 5). A majority lie along a southeast-northwest axis showing their original placement along the bottom of the hull and reflecting their location in midships. These iron pigs were noted in all previous investigations except Keith's 2007 visit. No notable changes to the ballast pile were detected, but it seems that erosion of sand has exposed more bars than were previously seen. Further detailed recording of the bar's positions should be performed in future investigations.

5.14 Ammunition

As *Endymion* was carrying numerous cannon, muskets, and ammunition for delivery to the fort on Grand Turk, it would be unsurprising to find remains of these throughout the wreck site. Unfortunately, whether it is due to the time the crew had to safely remove the ammunition and muskets before the sinking, the possibility of the remains concealed on the site, or the ease at which they could be looted, there are very few examples of these left at the wreck. No muskets have been seen in the area and these were not mentioned in any of the previous investigations. Bound did not address the remaining ammunition on-site directly but recovered seven pieces of firearm lead shot (Bound 1998:215–216). During Keith's initial investigation, he notes the presence of small one-centimetre shot for either firearms or grapeshot along with cast-iron

cannon shot for both the 9- and 18-pounder cannon (Keith 2000:4). No location data is mentioned for this remaining ammunition. Keith's later visit only touches upon the lack of ammunition on site that would have been expected. There was no mention of ammunition remains at the time of the 2019 investigation (Ruud Stelten pers. comm. 2024).

During the author's 2023 visit, only six pieces of lead shot were identified across the eastern area of the site (Fig. 26). No iron cannon shot was identified among the vessel remains. More may remain in other areas, but given their diminutive size, they are easily missed. During the interview with Interviewee 1, he stated that a large number of these lead shot were uncovered after Hurricane Irma in 2017 (Appendix 1). They were initially exposed in multiple small piles but have since scattered further apart and are fewer in number. It is likely these artefacts will continue to disperse or become looted in the future.

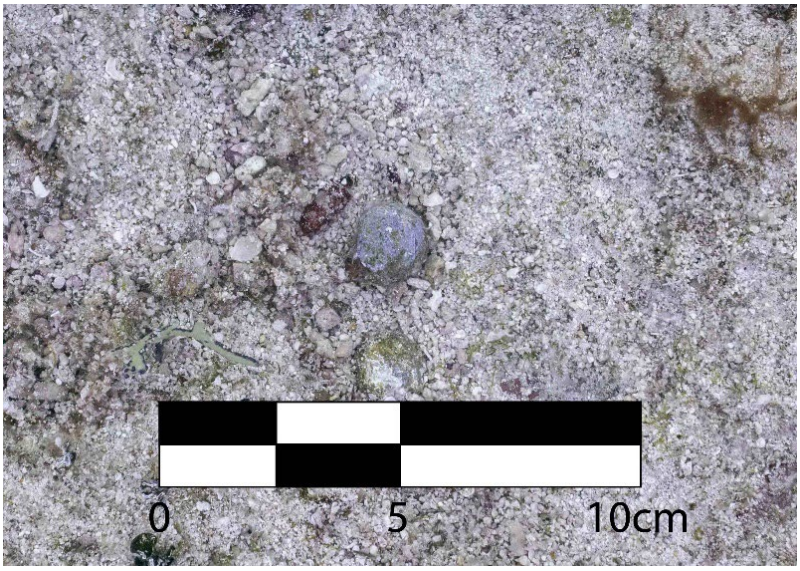


Fig. 26. Detail photo of a piece of lead shot in 2023 (image taken by the author).

6.0 Discussion

As maritime archaeology is a relatively new field with continually evolving techniques, it is imperative to revisit sites that have been examined previously in order to not only implement new techniques but also to monitor changes to a site. Recognizing the different processes that work upon the vessel remains and how those will continue to affect them over time is necessary to provide the best recommendations for site preservation. By analysing the *Endymion* site, the most significant changes since its deposition can be seen along with the processes that have been impacting the site.

6.1 Initial site formation

The process in which *Endymion* ended up resting on the bottom of the Turks Bank can be examined through a combination of first-hand historical accounts and the site layout as it stands today (Table 5). As the vessel foundered relatively slowly, Lieutenant Woodriff was able to

document the sinking and its effect on the ship in detail (Fig. 27). Having struck upon the rocks at 8 in the morning, after a few hours the water had filled the vessel up to the orlop deck and by that night, the entire bow was resting underneath the surface. During the event, the stream anchor was brought to the east-southeast to try and pull the vessel free of the rocks. Two bower anchors were also cut off to reduce the stress on the bow. There is no other mention of the *Endymion*'s anchors for the remainder of the logbook.

Upon his return to the shipwreck site from Grand Turk, Woodriff describes how the bow was the first to sink, having separated midships from the rest of the vessel. He further notes how the fore part of the vessel's bottom had separated from the upper vessel as it sunk. The poop rail was the last remaining ship part above the water line. It took a total of 22 days for *Endymion* to become completely submerged, coming to its final resting place where it can be seen today.

For the second line of evidence, the site layout is examined (Fig. 14; Appendix 5). This shows a clear reflection of the sinking and decomposition process of *Endymion*. The vessel likely was stranded upon the two reef structures to the south and east of the site and as the ship fell apart, it listed to port. This can be supported by both the line of cannon that resides along the southern side of the central reef structure, the location of the bower anchors, the horseshoe clamp, and the sheathed stempost. South of the row of cannon sits the main pile of pig iron ballast that rests upon fragments of the hull and sheathing. Based on Bound's chapter and Keith's site plans, the keel came to rest in the southern portion of this ballast pile. It is likely that the starboard and port sides of the hull separated along the keel due in part to the weight of the pigs, leaving the ballast on both sides of the keel.

The remaining number of cannon have been a continual debate since the first investigations. As only 28 have been identified to date, the missing guns of the supposed 44-gun vessel have not been located. A few may be hidden beneath the pile, corroded to the top cannon but unable to be seen. That said, due to the cannon arrangement, there would likely only be a few more, which would not account for all the remaining guns. Bound and Keith attributed this to salvagers soon after the wrecking and in ensuing years.

From research into other converted Fifth Rates, in order to function as a troop transport it is likely *Endymion* was not fully equipped with 44 guns to begin with (refer to page 13). With initial orders to transport over 500 men, there needed to be space for these bodies on a vessel of only 42 metres (Royal Museums Greenwich WDR/1; Winfield 2007:178). The documentation ordering the specifications of the refit has not yet been located, making the number of cannon *Endymion* carried during the final journey unknown. Furthermore, the additional cannon Woodriff was ordered to deliver to Grand Turk are likely part of the underwater assemblage, thereby lowering the number of cannon that can be attributed to *Endymion*'s armament. It should be noted that in July 1779, the Royal Navy began to officially arm their vessels with carronades although they were not officially listed as part of the guns on a Royal Navy vessel until 1817 (Cartellone 2015:111; Hepper 2023:x).

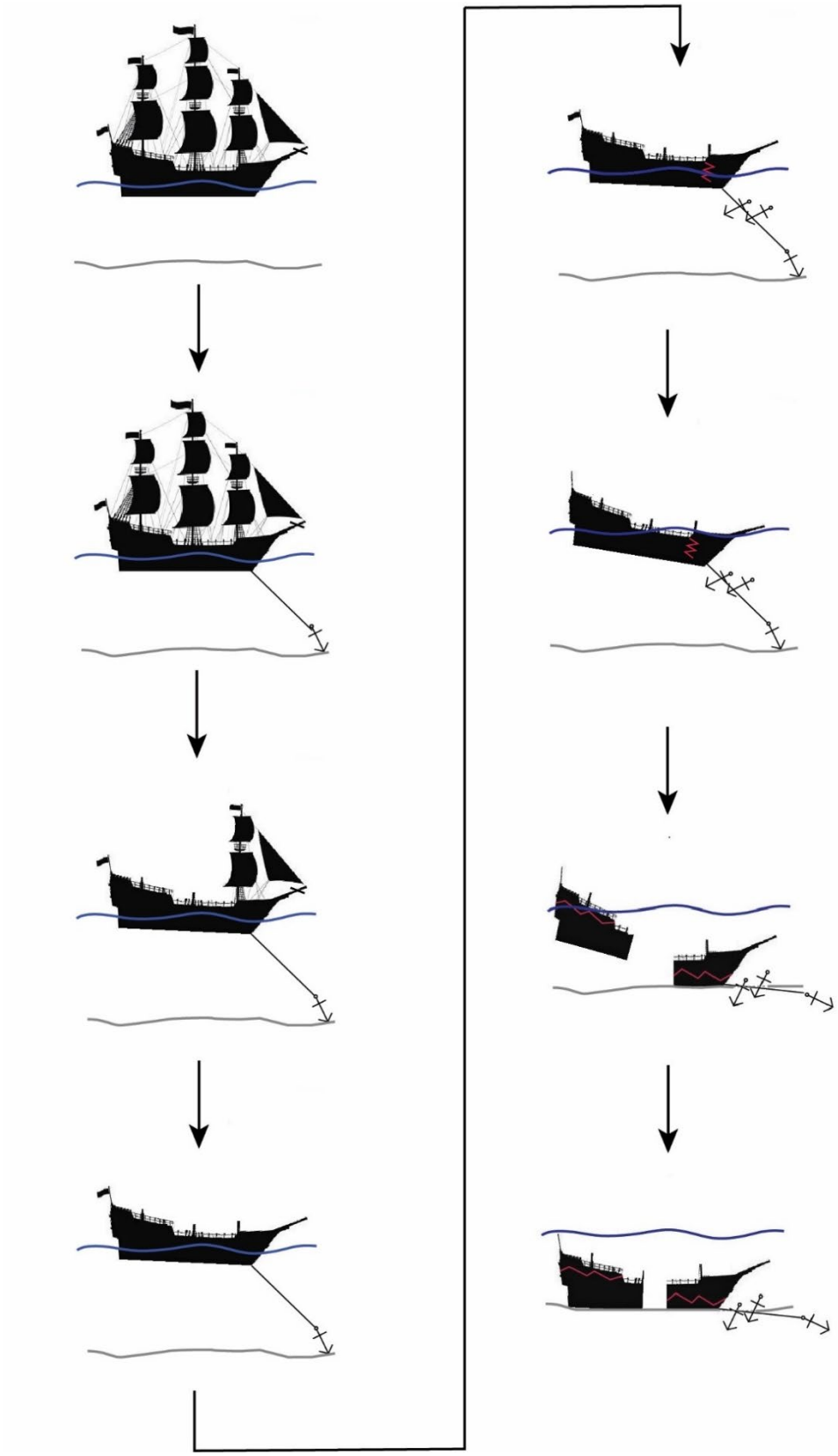


Fig. 27. Flow chart showing the hypothesized sequence of events *Endymion* went through during the wrecking based on Woodriff's account in the logbook (created by the author).

In regards to the four anchors that lie on site, based on the size, these were likely *Endymion*'s bower anchors of the Old Admiralty Longshank type (Stelten 2010:28). Vessels of the time commonly carried three types of anchors: bower (the largest known as the sheet anchor), stream, and kedger (Curryer 1999:51). The bower anchor, named because of its position at the bow, was the largest anchor on board. According to *Established Sizes and Weights of Anchors for the Royal Navy* (1763), a 44-gun ship should have four bowers, one stream, and one kedge anchor on board (Curryer 1999:56).

In the logbook, Woodriff mentions carrying out the stream anchor and cutting away two of the bower anchors. No stream anchor is seen on site leading to the likelihood of salvage. Additionally, the four large, 2-tonne anchors of similar size correspond to the typical four bower anchors on this class of ship (Curryer 1999:56). No kedge is seen but as it was never mentioned in the logbook, it was either removed during the sinking, salvaged, or covered by the ballast. Much of what is typically seen on a shipwreck site such as personal items, navigational instruments, and vessel fittings is absent from the *Endymion* site. A part of this may be attributed to the disruption caused as the vessel finds its resting place among the reefs. As the ship disintegrates, fragments of the ship break off and become flotsam. These flow away from the site propelled by the powerful currents in the area. Further removal of such artefacts is discussed below.

Table 5. Cultural site formation processes phases on a submerged archaeological site based on Gibbs (2006) and how the *Endymion* site reflects that process.

Phase	Action taken	Related archaeological material seen
Pre-impact (Threat)	Long-term: • Typical British navy navigational tools, charts, and training • Pilot hired for navigation of the Turks Island Passage • Soundings taken at various intervals • Armed *en flûte* Short-term: None	• Limited cannon on site • Cargo of ammunition and stores on site
Pre-impact (Warning)	None	None
Impact (Crisis salvage)	Decision to remain aboard: • Sounding around the vessel • Hoving sails aback • Clewing up sails • Dropping the stream anchor and pull on the cable • Pumps running • Cutting main and mizzen masts to relieve stress • Cut off both bower anchors to relieve stress • Stores offloaded onto *New Hope* • Disobedience from few crew	• Location of vessel remains • Location of bower anchors • Lack of a large amount of personal goods and stores

	• No mentioned material jettisoned Decision to abandon vessel: • Assistance rendered by *New Hope*, *Twins*, and smaller local boats • Removal of personnel • Retrieval of as many goods and possessions that could be saved • Removal of sails and flag	
Recoil (Survivor salvage)	On Grand Turk: • Establishment of survivor camp on Grand Turk • Woodriff re-establishing authority • Construction of sick tent • Locating food and water • Assistance by local persons • Sending men to Jamaica requesting rescue • Amicable business relationship with locals Returning to *Endymion*: • Dependent on local assistance • Salvaging both small and large vessel material, goods, and stores from the vessel	On Grand Turk: • None Wreck site: • One less cannon on site • Loss of material on site
Rescue/post-disaster (Opportunistic salvage)	• Independent local salvaging efforts	• Loss of material on site
Rescue/post-disaster (Systematic salvage)	• No known systematic salvage at the time surrounding the event • Possible visit by Jeremiah Murphy (1850–1870) • Teddy Tucker and TACMAR (1980s) • Modern looting and environmental impacts	• Loss of material on site
Material subsequently deposited on site	• Wrecking of the Companion Wreck vessel	• Anchor chain across the site • Possible other intrusive artefacts, especially metal

6.2 Post-depositional site formation processes

The *Endymion* site has greatly changed since its initial wrecking. The majority of organic material has disintegrated or been carried away, smaller items have continually been moved or looted, and even larger artefacts such as anchors are affected by outside forces. What remains on the site today is but a fraction of what would have been sunk and even less of what would have initially been on board the vessel. Understanding the specific anthropogenic, biological, chemical, and environmental aspects that have influenced the vessel since its wrecking allows for

a complete understanding of the site formation processes that have worked upon the remains and will continue to do so in the future.

6.2.1 Anthropogenic

Humans have carried out marine salvaging operations long before the introduction of modern SCUBA technology. To prevent a total loss of assets during a wrecking event, the crew would save as many stores and ship parts as possible while retreating to safety. If possible, the crew would return to the site to salvage more of the goods or hire an outside party to retrieve the remains. Although British naval vessels belonged to the Crown, other looters without salvaging rights to the wreck would recover anything of value. If a shipwreck location was known and accessible, it would typically be looted for all valuable goods, from treasure to iron fittings. This was the case in the TCI at the time of *Endymion*, with many Bermudians salvaging vessels to earn a profit (Jarvis 1998:462).

Salvaging on the *Endymion* site started from the moment it wrecked. As mentioned previously, the slow sinking allowed for a large amount of provisions and various vessel parts to be saved (Table 4). After his arrival on Grand Turk, Woodriff and other, local parties continued to visit the site in order to salvage as much as conditions would allow. Some of these other parties returned to the crew with pieces of *Endymion*, as noted in the logbook (Appendix 2). Although these instances were recorded by Woodriff, there were likely other, unknown visitors to the site who may have kept goods for themselves.

There are some speculations about these unidentified salvagers. Bound (1998) believed the site to have been frequented by treasure hunters and salvagers allowing a majority of the ship's cannon to have been recovered shortly after the wrecking. A line of evidence he presents is a letter from the Commander of His Majesty's ships at Jamaica, although the date it was written is not mentioned. In this correspondence, the Commander refers to a salvor's request for the payment of half of the value of any guns raised from the *Endymion* site (Bound 1998:214). Unfortunately, no other documentation has been located further expanding on this request or any other salvaging business. Keith (2000) builds upon this by stating that the wreck site may have been visited later in the nineteenth century by known salvagers of the region, such as Grand Turk's Jeremiah Murphy (active 1850–1870). He further confirms the site was visited by Bermudian treasure hunter Teddy Tucker and his company TACMAR in the 1980s, but there is no record of what was disturbed or looted (Keith 2000:2). As stated above, the lack of all 44 guns on site can likely be attributed to the ship's reduced armament at the time rather than later salvaging. These few examples are but a portion of the possible visitors, salvagers, and looters that arrived at the site over the last 200+ years.

In addition to historical salvagers, the new age has brought about modern salvaging using SCUBA and other advanced technologies. The *Endymion* wreck site has become increasingly more accessible to both salvagers and tourists over the last 50 years. This poses the challenge of dealing with tourists looting what little remains on site. During two of the local interviews, both interviewees recalled multiple artefacts being removed from the site over the years, from small musket balls to larger cannon balls and pieces of metal (Appendix 1). Therefore, the loss of smaller artefacts from the site and possibly larger objects, such as the horseshoe clamp, is partly attributed to modern SCUBA- and freedivers.

Anchor 1 is of particular interest, not only because of its change in position which will be discussed below, but because of its location. This anchor is separated from the main site by a large reef structure lying in a separated groove. The question that must be asked is how this 2-tonne anchor ended up so far away from the main wreck area. There are several possible explanations for this. First, the anchor might have been from another vessel. Whether this is from another shipwreck, a vessel that had lost an anchor, or one that was salvaging the remains of the shipwreck shortly after its sinking is not clear. That said, this seems an unlikely scenario as there are no other related shipwreck remains visible, and anchoring in that groove for any other reason would have endangered that vessel due to the shallow reefs. As mentioned above, a 44-gun vessel was rated to carry four bower anchors making it likely that anchor 1 was originally part of this set. Concerning the location of the anchor away from the main site, it is possible that another party tried to retrieve this anchor, moving it from its original position, but ended up dropping it in the groove north of the site. Based on the estimated position of *Endymion* while aground on the reef, the bower anchor could not have been dropped here as the tall reef structure was in the way and there is no mention of the crew carrying out the bower anchor far from the site.

The *Endymion* site is notably lacking any identified personal artefacts and crew items that are commonly found on similar shipwreck sites. There have been no recorded sightings of these during the previous investigations nor in 2023. That said, it is possible this deficiency in artifacts may also be attributed to lack of excavation on site, with the possibility of more personal items resting beneath the vessel remains. Nevertheless, this stark absence of both personal objects and other shipboard items should be analysed. When briefly comparing the *Endymion* site to the wrecks of two other British naval vessels resting in similar, shallow and turbulent conditions, the differences can be reviewed. HMS *Swift* (1763) and HMS *Sirius* (1781) are two vessels that sailed in the later eighteenth century, wrecked, and have been through several archaeological investigations. *Swift*, lying between 9 and 15 metres off the coast of Argentina, and *Sirius*, in 1.5 to 8 metres off of Norfolk Island, are both resting in similar conditions as the *Endymion* site (Bound 1998:178, 219). The sites show the remains of artefacts such as navigational instruments, coins, ceramics, glass, and personal items (Bound 1998:181; Elkin 2008:3–6). Hundreds to thousands of objects have been raised from these sites during archaeological investigations (Bound 1998:181, 219).

The distinct difference to the *Endymion* site is clear. Within the assemblage present on the site, no artefacts of this nature have been sighted. It is possible that they are present, but are covered by the cannon, ballast piles, or sediment on site and would only be encountered during excavations. That said, it is believed that the primary culprit of artefact removal from this site such as these objects is human intervention. As the vessel had time to be emptied, many objects could have been removed before the ship was abandoned. That said, as with the *Sirius*, which took two years to disintegrate and therefore also had time to have artefacts recovered, there should still be some left on site (Bound 1998:218). Additionally, both the *Swift* and *Sirius* wreck sites show items still remaining despite the turbulent environmental factors they are subjected to. Based on this comparison, it is possible that some person items moved due to environmental conditions, but a large amount were likely taken by the crew, other contemporary salvagers, and later treasure hunters and SCUBA divers.

To understand what the *Endymion* assemblage may have looked like prior to and immediately after wrecking, it is useful to examine catalogues of recovered artefacts from similar vessels that have wrecked. One of the best examples in this regard is HMS *Pandora*, a 24-gun Sixth-Rate

vessel built in the same year as *Endymion*. This vessel sunk in 1791 in 33 metres of water north of the Great Barrier Reef, and has been subjected to several archaeological studies (Bound 1998:230). During these investigations, a wide array of artefacts have been recovered, including medical equipment, a variety of ceramics, glass bottles, padlocks, and pocket watches (Bound 1998:233). These provide a good example of what an eighteenth-century ship assemblage would be like without the removal of material during the event and in subsequent years, and provides an indication as to the assemblage that would have been in use on *Endymion*.

It is outside the scope of this thesis to conduct an in-depth comparative analysis between *Endymion* and other British naval vessel wreck sites that have been investigated. Instead, this thesis will serve as a baseline for future comparative research. Through the analysis of different elements of these wrecks, similarities, patterns, and differences can be examined, and a deeper understanding of British naval vessel site formation processes can be gained. Wrecks such as the HMS *Swift* (1763), HMS *Pandora* (1779), HMS *Sirius* (1781), and HMS *Sirius* (1797) could all potentially be investigated in comparison to the *Endymion* site.

6.2.2 Biological

The influence of marine life on shipwreck sites is not always obvious. Coral and sponge growth are the most easily recognisable and can cover a site to the point that identification of features is difficult. This was partially the case on the *Endymion* wreck site prior to Hurricane Irma as described by Bound and Keith (2001). Both authors mentioned that there was significant coral growth over the site and the surrounding ecosystem was unusually rich (Bound 1998:204; Keith 2001:50). This thriving marine life surrounding the site played an important role in the site formation process.

Teredo worms (*Teredo navalis*), a plague to vessels sailing and sunk, thrive in these warm waters (Palma and Santhakumaran 2016:7). This wood-boring mollusc is capable of quickly causing high levels of degradation through the wood it infests until it is almost entirely honeycombed (Palma and Santhakumaran 2016:7). Although less known, other marine wood-boring macro-organisms include marine gribbles (*Limnoria* spp.), wood piddocks (Pholadidae), and pill bugs (*Sphaeroma* spp.) (Palma and Santhakumaran 2016:3). Species within these genera thrive in warm and salty waters and are prevalent throughout the circum-Caribbean region. Additionally, microorganisms that attack the wood's tissue such as bacteria and micro-fungi are prevalent in all bodies of water except those with low levels of oxygen (Palma and Santhakumaran 2016:18; Robinson 1981:4). As exposed pieces decay at a rapid rate, wood typically has the best chance of survival in this type of environment when covered by at least a 0.5 metre layer of marine sediments (Palma and Santhakumaran 2016:36).

Along with marine organisms, the influence of fish is surprisingly prevalent on shipwreck sites. For example, the sand tilefish *(Malacanthus plumieri*) is a western Atlantic Ocean dweller that builds mounds to cover their nests out of surrounding coral, rocks, and even artefacts (Krieg 2017:29). Fish such as these can remove artefacts from their original location or site, making their context questionable. Although there were no tile fish piles seen within the vicinity of the wreck, that does not negate the possibility of future piles developing or previous piles having been destroyed by hurricanes.

Endymion Rock was wiped clean of much of its coral and sponges by Hurricane Irma in 2017. In 2023, these organisms were starting to return, albeit slowly. The removal of corals and sponges allows for greater visibility of the site and its features, a positive effect for archaeologists. However, with the removal of marine growth along with the sand protecting areas of the site, objects such as wooden hull remains become exposed to invasion by the aforementioned wood-boring molluscs.

6.2.3 Chemical

With the introduction of a shipwreck—and particularly the metal artefacts—to seawater, chemical reactions occur causing corrosion and deterioration. Predicting the corrosion processes for an entire shipwreck is extremely difficult due to numerous factors that affect the metals. These interrelated influences include metal composition, water composition, marine growth, water temperature and movement, amount of exposure to the seawater, and position to other shipwreck materials (North and MacLeod 1987:68). These factors can suddenly shift in the ever-changing underwater environment, further promoting the corrosion of an artefact (North and MacLeod 1987:74). In waters of the TCI, where water temperature ranges between 20°C and 30°C and contain a surface salinity of 36 parts per thousand, the corrosion rate of metal is high (Jury 2013:18)

The *Endymion* wreck site is comprised almost exclusively of a metal assemblage. The identified metals to date have been composed of iron, copper, and lead. The close contact between a majority of the metal, especially in the large ballast pile, further adds to the corrosion process (North and MacLeod 1987:72). The large amount of iron on site is the metal most in danger of high rates of corrosion (North and MacLeod 1987:72). Whether above or below the seabed, iron becomes concreted and exposed pieces are covered in marine growth (North and MacLeod 1987:77). On the other hand, copper and copper alloy artefacts appear vastly different. These pieces are typically only slightly concreted or not at all due to the biological activity produced by the corrosion process (North and MacLeod 1987:80). As a result, marine growths tend to not attach to this metal (North and MacLeod 1987:80). Without this protective layer of thick marine concretions, the softer cupreous metal is more susceptible to mechanical abrasion (North and MacLeod 1987:84). Additionally, wood remains are commonly found still attached to copper as the coupling assists in the preservation of the organic material (North and MacLeod 1987:84). The close context of the iron and copper metals on the *Endymion* site can produce an effect of galvanic coupling which then accelerates the corrosion of the iron (North and MacLeod 1987:72). Lead, is generally rendered fairly inert quickly once submerged as a protective film covers the metal surface (North and MacLeod 1987:89). That said, in tropical waters such as the Turks Bank, lead is less likely to have marine growths due to the toxicity of the lead and its corrosion process (North and MacLeod 1987:89).

The layer of marine growth that was seen covering many of the artefacts at the time of the early investigations has mostly been stripped away from the 2017 hurricane. As a result, the layer that had helped protect the metal from mechanical abrasion and the chemical effects from the seawater is gone. Although it is growing back slowly, increased corrosion has occurred to the further exposed artefacts. The remaining material from *Endymion* that lies beneath the seabed has a greater chance of protection from this corrosion. Beneath this layer of sand, there is lower dissolved oxygen, a higher pH, and protection from shifting currents (North and MacLeod

1987:74). Further extensive investigations into the chemical properties of both the conditions on site and the composition of the metal artefacts should be performed to fully understand the complete level of corrosion that is occurring.

6.2.4 Environmental

The Turks and Caicos Islands are located within the turbulent Caribbean hurricane zone, with impactful hurricanes and strong tropical storms frequently affecting this area. Due to large surges and accompanying bottom currents that transpire during these storms, the underwater landscape can be significantly altered every year. Hurricanes can destroy entire cities on land and shift objects weighing multiple tonnes under water. An example of this power occurred during Hurricane Irma in 2017. Two metal shipwrecks lying on the leeward side of St Eustatius were impacted by the passing hurricane 40 kilometres north of the island. *Chien Tong*, a 52-metre trawler sitting at 24 metres was tilted from its original upright position while *Charles Brown*, a 100-metre vessel lying between 18 and 30 metres had its bridge collapse. With this in mind, it is imperative while examining formation processes of a submerged site to understand the impactful storms that have occurred in the area since the vessel's sinking.

The National Oceanic and Atmospheric Administration's (NOAA) National Hurricane Center (NHC) has created an interactive map—Historical Hurricane Tracks—from compiled hurricane and tropical storm data since 1851 (NOAA 2024). These storms are categorized based on their maximum sustained wind speeds. Using the Saffir-Simpson Hurricane Wind Scale, each hurricane is ranked from 1 to 5 (Appendix 6). From this data, a list of the hurricanes and tropical storms within varying distances, or zones, from *Endymion*'s wreck site has been compiled (Appendix 7). Further specifics, including the position of the storm in relation to the site, the storm's pressure, and the date it crossed within the impact zone have been included in the table.

Underwater features such as reefs and shipwrecks are highly susceptible to the influences of hurricanes and tropical storms. The impact from the created storm surge and accompanying strong currents can destroy coral, deposit layers of sediment, and move entire shipwrecks and their accompanying artefacts. Storm surge is created through a combination of storm pressure and wind force as water gathers, propelling toward shore (National Hurricane Center and Central Pacific Hurricane Center 2024). The complexities and variables that create a storm surge make it almost impossible to predict its strength during a storm (National Hurricane Center and Central Pacific Hurricane Center 2024). The composition of the seafloor affects the strength and height of these surges, with the highest recorded waves reaching up to 13 metres (Gearhart et al. 2011:33; Nott 2014:757).

Beneath these waves, a descending circular current is created (Fig. 2). As these motions reach the seafloor, they dissipate in a rapid, horizontal movement creating extreme stresses that have the power to move objects weighing multiple tons (Javanmardi n.d.:2). The underwater environment becomes similar to a tornado as these bottom currents reverse up to several times a minute (Gearhart et al. 2011:33). These storm-induced currents are the major contributing cause of hurricane damage to shipwrecks (Gearhart et al. 2011:24).

The influences of hurricanes and tropical storms on a shallow site such as *Endymion* can be extreme. Based on studies, sites between 3 and 10 metres deep are typically most affected, and

down to 20 metres for more severe hurricanes, marking the *Endymion* wreck site within this danger zone (Harmelin-Vivien 1994:218). There is currently no method for predicting these storm-induced currents and their damage potential on shipwreck sites. The water velocity created during a storm depends on wave height, wind speed, fetch, storm width, duration of strong winds, water depth, and wave direction (Gearhart et al. 2011:37). In turn, these variables are then influenced by the size and shape of the storm, the topographic makeup of the seafloor, and the orientation of the seafloor slope in relation to the storm track (Gearhart et al. 2011:37).

The wave heights build as the storm moves towards an increasingly sloping seafloor (Gearhart et al. 2011:33). The accompanying current can be amplified past the velocity of associated wind even as wave height decreases, making it hard to judge the damage on a shipwreck simply based on storm rating (Gearhart et al. 2011:33, 35). Additionally, seafloor topography greatly influences the surge generated, such as by enhancing the velocity between island channels (Scoffin 1993:203). Resulting strong currents and high waves increase the intense water movements and mechanical forces exerted on the underwater environment (Harmelin-Vivien 1994:213). These currents created by storm surges can also impact the sediment on site. It is not uncommon for powerful hurricanes to move layers of sediment, exposing previously buried and thus protected shipwrecks (Stelten and Hinton 2020). The addition of sediment over an area can also occur. Both events affect the preservation of the site by influencing the biological and chemical components that act upon the vessel's remains.

Tropical storms and hurricanes vary greatly in size. Typical hurricanes stay around 480 kilometres in diameter with minor hurricane winds reaching 40 kilometres from the eye and up to 480 for larger ones (National Weather Service n.d.). However, the strongest forces occur along the eye wall which can range from 30 to 64 kilometres from the centre of the hurricane (National Weather Service n.d.). In the northern hemisphere, the most severe conditions are to the right of the eye and can extend further than the left (Harmelin-Vivien 1994:218). It should be noted that determining the distance from the eye in which storms continue to inflict damage is continually debated (Harmelin-Vivien 1994; Scoffin 1993).

Figure removed due to copyright restriction.

Fig. 28. Diagram describing the processes of storm surge and the impact below the water line (Javanmardi n.d.:2).

To study the effects of hurricanes on a shipwreck site, each storm must be studied separately. The storm's path, the accompanying wind speeds and their direction, swell intervals, water depth, wave height and direction, and surface currents must all be measured over the area in question (Gearhart et al. 2011). Unfortunately, it is outside the scope of this examination to determine this for every storm that passed through the study area. Although there are numerous variables that influence the underwater environment during these storms, wind speeds do play a major role in creating storm surge. For the limited scope of this study, relevant hurricanes have been selected based on their ranking on the Saffir-Simpson scale.

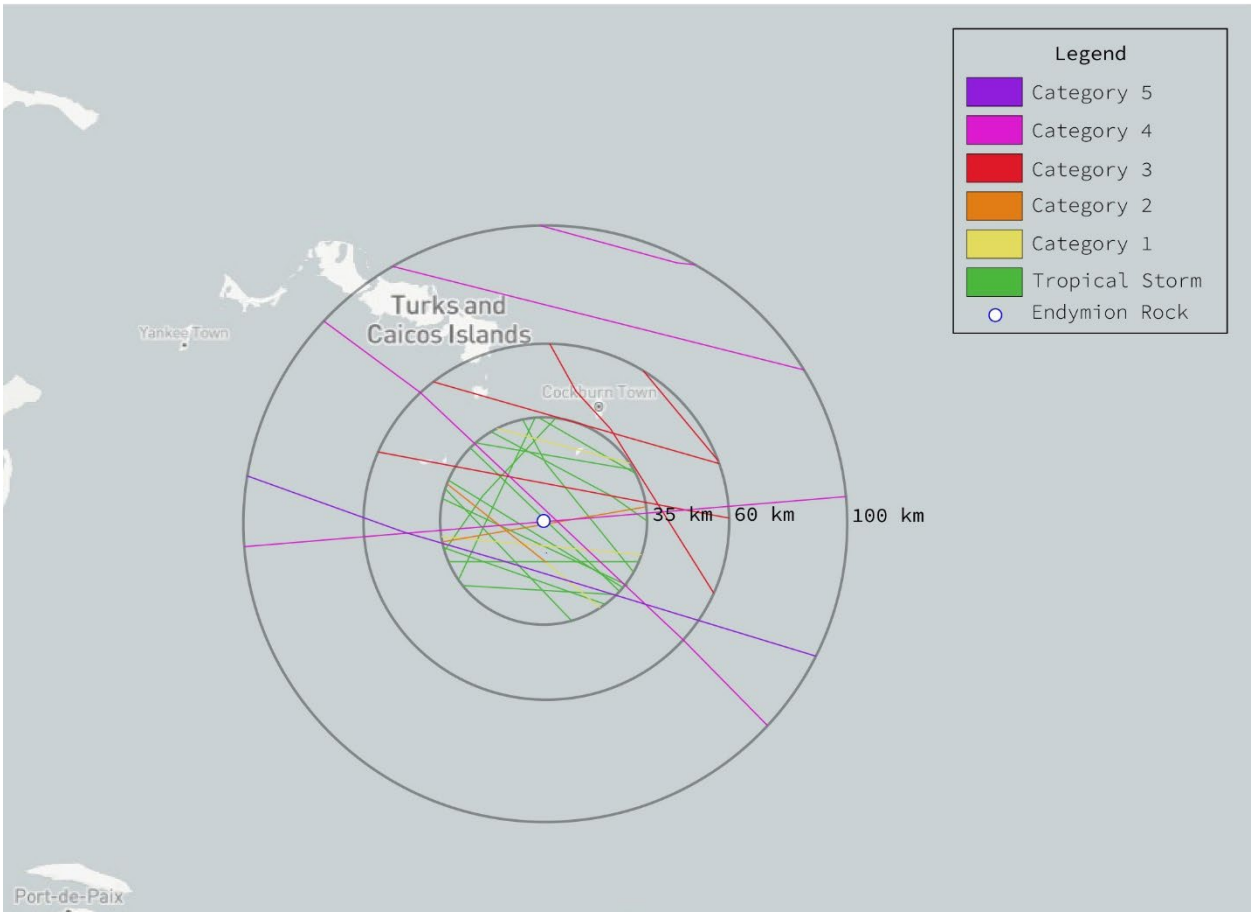


Fig. 29. The hurricane tracks and their respective impact zones within this study as referred to in the table above (created by the author; edited with data from NOAA 2024).

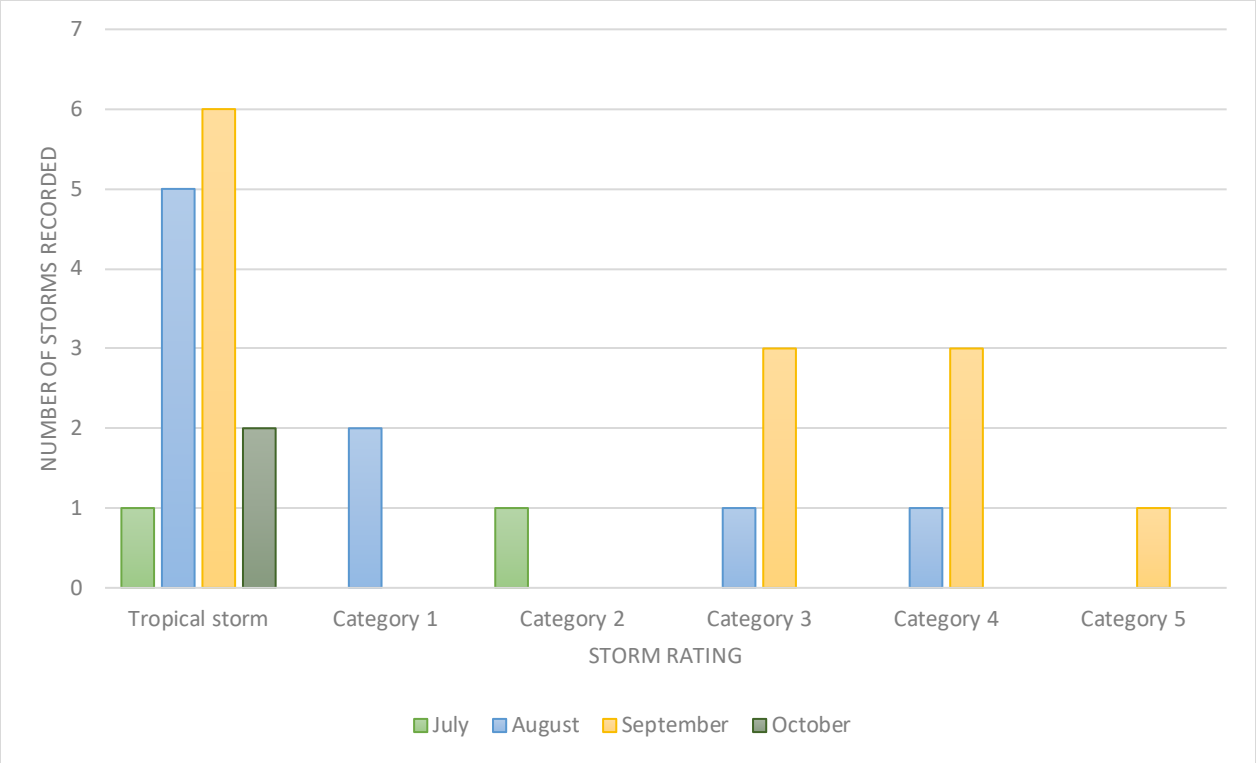
For this thesis, the number of hurricanes that have possibly affected the *Endymion* site since 1851 have been narrowed down based on their distance from the site and their wind speed (Appendix 7). The determined "impact zones" surrounding the site are based on previous studies investigating the influence of storms on tropical reefs (Gardner et al. 2005:176; Treml et al. 1997:542). As there is a greater amount of information on that subject in comparison to the study of hurricane effects on shipwrecks, the hurricane impact zones were thereby based on the coral reef research. With the *Endymion* site as the centre point, three zones are designated. The first is a zone with a diameter of 35 kilometres, which includes tropical storms and hurricanes of

Categories 1 and 2. Second is a zone with a diameter of 60 kilometres to capture Category 3 hurricanes. The largest zone captures Categories 4 and 5 hurricanes and has a diameter of 100 kilometres. These zones indicate that when a tropical storm or hurricane of a certain strength enters its respective zone or a zone closer to the site, it will impact the site. It should be noted that these impact zones may exclude storms passing the site at a distance greater than 100 kilometres that could have impacted *Endymion,* as the underwater impact zone of a hurricane is continually debated (Done 1992; Lugo-Fernández and Gravois 2010). Appendix 7 and Figure 29 therefore show the minimum number of storms that have affected the site.

From this, a minimum number of 13 hurricanes and 14 tropical storms were identified since 1851. As mentioned above, this is not an exhaustive list of all the hurricanes and tropical storms that could have affected the *Endymion* site. For instance, Hurricane Donna (1960) a Category 4 outside of the impact zone, is not included within the table although it was noted as the most powerful hurricane to hit the TCI in centuries (Visit Turks & Caicos Islands 2023). Additionally, extensive investigations into possible hurricanes prior to 1851 or storms not mentioned in the NOAA database are outside the scope of this thesis. Although the impact zones have been restricted, there is also the possibility of lesser-rated tropical storms and hurricanes not mentioned to have caused significant damage. Further investigation into the effects of each storm on the site should be performed in the future for a more in-depth analysis.

Quantifying the full effects of storms on shipwreck sites is a difficult and complex task. Every site has its own unique layout, is comprised of various materials, and resides within a specific environment. That said, regional hurricane data can be analysed in order to recognize any trends that can affect the site. According to the gathered data above, the impact zones around *Endymion* have the highest chance of experiencing a hurricane or tropical storm in September (Fig. 30). Additionally, there has been a noticeable trend since 1851. Smaller, yet more numerous storms were seen more frequently in the mid-nineteenth century (Fig. 30). In comparison, the number of storms that have occurred in contemporary times have been declining in frequency but are rated more powerful than those in the past. This effect is largely due to climate change and will continue to increasingly influence the site as time continues (Geophysical Fluid Dynamics Laboratory 2024).

Although changes to the site from all passing storms cannot be analysed previous to the archaeological investigations, those dating after 1992 can be studied. The most impactful storm over the site since 1992 seems to have been Hurricane Irma (Appendix 7). Irma is, at the time of writing, the strongest recorded Atlantic hurricane in history, with sustained wind speeds reaching over 160 knots (National Weather Service 2021). The eye of this Category 5 hurricane passed directly over the site, producing over 140 knots of wind speed at that time (Appendix 7). Between 2008 and the proceeding archaeological visit in 2019, many aspects of the wreck site appeared to have changed based on the evidence seen from the site plan, photomosaic, and photogrammetric model. With the frequency of more powerful hurricanes increasing, the danger these pose to the site should be addressed. Although these storms have the power to move large and heavy objects, it has been observed that most damage caused by hurricanes occurs in the first few years of a site's deposition (Gearhart et al. 2011:103). This, however, does not negate the threat these environmental disasters pose on archaeological sites.



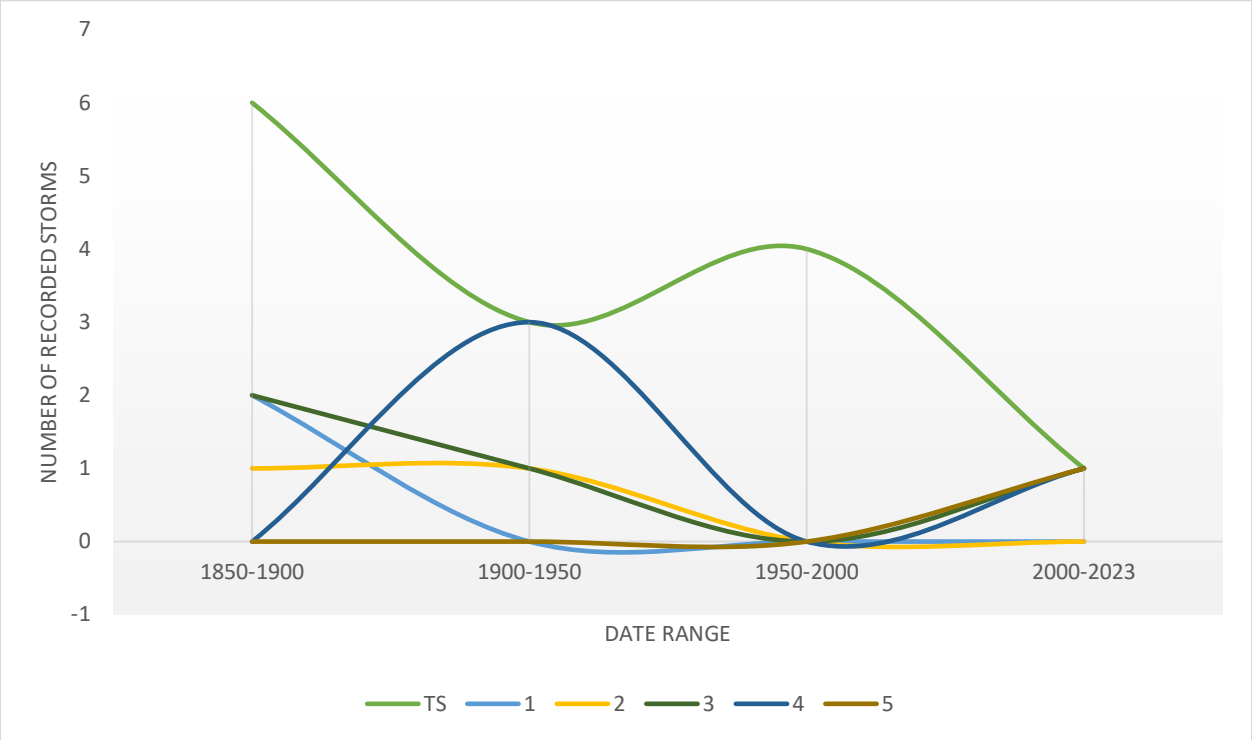


Fig. 30. (Top) The number of hurricanes and tropical storms in the *Endymion* zone recorded since 1851 per month based on category (created by the author). (Bottom) The frequency of hurricanes and tropical storms in the *Endymion* zone recorded since 1851 based on storm rating (created by the author).

One of the most notable differences observed is the change in anchor 1, which was moved a complete 90 degrees. An extreme amount of surge velocity is required to move a 2-tonne anchor. Attributing this movement to the 2017 hurricane was verified during the interview with Interviewees 1 and 2 who discussed the differences the storm made to the site (Appendix 1). Other changes to the site that may be attributed to Hurricane Irma include the removal and loss of many of the keel bolts, further exposure of artefacts, and the removal of the extensive covering of marine life.

What is of greater concern is the large volume of sediment that can move during a storm. The earlier investigations show a greater amount of sediment on site than was seen in 2023. During all interviews conducted, the interviewees specifically mention the impact hurricanes have had on the site (Appendix 1). Manos recalls that during Hurricane Ike in 2008, a large volume of sand had been placed across the site, obscuring marine life and part of the wreck. Surprisingly, smaller artefacts such as musket balls and pieces of loose sheathing are still present on site. Their presence shows that the majority of these were likely recently uncovered from under a layer of protective sediment during Hurricane Irma, as confirmed during the interview with Interviewee 1 (Appendix 1). Sediment covering shipwreck sites, if it remains in place, can act as a protective barrier from the forces of hurricanes. As soon as that sediment is removed, artefacts that were previously protected become exposed to distribution, chemical changes, and looting. Sites such as the *Endymion* may be possible candidates for rescue excavations after significantly disturbing weather events and should be considered by heritage agencies who handle shipwreck conservation. Although recovering and conserving every artefact from *Endymion* is unrealistic, the smaller and loose objects that will easily scatter in the next storm should be recovered and conserved.

7.0 Conclusion

As maritime archaeologists, there are numerous aspects that one must include while researching a single shipwreck. These include the historical setting surrounding the time of the wrecking, the historical and environmental factors of the region the vessel currently lies in, the vessel and crew history, sailing techniques used at the time, the final voyage and preceding events, influences of the wrecking event, and known salvaging efforts. All of these factors are necessary to completely understand a shipwreck. Without the answers to these questions, important details that influence the site can be missed.

The HMS *Endymion* was not particularly special in any way, just another British warship wrecked in the hazardous circum-Caribbean region during the Age of Sail. No great loss of life occurred, the ship was not carrying any treasure nor any prisoners of note, and the crew were returned safely to their port of origin. That said, *Endymion* presents the perfect case study for studying and quantifying the various processes that have influenced the site since its wrecking. From the multiple archaeological investigations that have taken place, the variations that have occurred on site over time can clearly be seen, leading to a greater understanding of how *Endymion* has changed since it foundered upon the reef.

Multiple advances have been noted during this revaluation of the *Endymion* site. Important historical information regarding the ship's construction, armament, and final journey missed in the previous archaeological investigations has been corrected. This in turn has assisted in solving

the mystery of the lack of cannon on site. Furthermore, the differences in artefact exposure and locations on site since 1992 were examined and their relation to the intense hurricanes of the region was discussed. This is especially important as understanding the damage that powerful hurricanes and tropical storms can cause on shipwreck sites is necessary while studying shipwrecks in hurricane zones.

Lastly, the importance of new archaeological innovations for site recording was seen through the product of a highly detailed photogrammetric model and orthomosaic. As new technologies are developed and new methodologies in examining underwater sites are produced, the re-evaluation of previously visited sites should be considered. Not only can this produce a higher-quality recording of the site, but also further note processes that have acted upon the remains. To continue this process, the author is planning on returning to the site in 2024 for further studies into the site's development. By investigating how site formation processes have affected the HMS *Endymion* wreck since 1790 and how these insights can be applied in the future study of other, similar shipwreck sites, this study has provided a thorough analysis of the HMS *Endymion* shipwreck. Through the review of the deterioration of this site since its deposition, a baseline has been created to which future studies can record further changes to *Endymion* in addition to being able to compare this site with other similar wrecks in order to fully comprehend the nuances of site underwater formation processes on British vessels in the Age of Sail. With this information, new procedures for the protection of underwater sites can be implemented, further safeguarding the world's important cultural heritage.

7.1 Future recommendations

The protection and preservation of an underwater site is dependent on its location, material remains, context, and legislation. Based on the 2001 UNESCO Convention, in situ preservation of underwater cultural heritage should be considered the first option when dealing with these sites. Regarding *Endymion*, the suggestion for complete excavation of the site is unnecessary from an informational point of view. Due to the prevalent historical records that are available concerning this vessel, excavating to gain a deeper understanding of its construction is not paramount. Additionally, the amount of material recovered from the site would take years of conservation without producing a significant amount of information. This is especially impractical in the TCI where there are limited conservation facilities and funding for such a proposition.

Instead, analysing small samples from the remaining wood, sheathing, and possibly other metals would be beneficial to learn more about the intricacies of the vessel's construction not seen in the builder's plans. Wood species identification can show the vessel's type of wood used in construction and whether different types were used during the repairs and refits that *Endymion* undertook. Through archaeometallurgical analysis and the sampling of copper sheathing, the different weights that were used in the construction and the composition of the metal can be determined. By sampling the remaining nails and bolts, further vessel modifications can be determined based on metal composition.

That said, excavation for the sake of ex situ preservation may be recommended. Based on what has changed on the site since 1992, it is recognized that there continue to be processes that work on deteriorating the vessel. This is especially true of the hull remains that are becoming exposed

by increasingly powerful hurricanes, significant artefacts going missing such as the horseshoe clamp, and smaller artefacts that are scattered around the area. If this was to occur, proper measures would have to be taken as excavation results in increased means of deterioration. The recovered artefacts could then be conserved and displayed to the public, dependent on funding.

The matter of in situ preservation is increasingly becoming an issue. Unfortunately, there are no preventative measures that can be taken against future hurricanes and tropical storms. Sand could be brought in to cover the site to protect it, however this may just be moved by the next hurricane and can further increase artefact corrosion through the introduction of new chemical processes, proving it as an unrealistic means of protection. By minimizing the vulnerable remains on the site by removal, this will reduce what can be damaged and lost during the next powerful storm.

As previously mentioned, the legal aspect of the protection of shipwrecks in the TCI ought to be updated. To support protection, public outreach and education should become more prevalent. The TCI play host to approximately one million tourists per year on average (Statistics Authority 2024). Although only a small percentage are able to dive the *Endymion* site, the continually growing number of tourists further increases the chance of looting to the site. Public education on the importance of shipwreck enjoyment and preservation should be brought to the forefront of the diving industry in the TCI. By providing education to the public and diving operations on these islands, the looting and damage that occur to these wrecks may decrease.

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Appendices

Appendix 1

The following presents the transcription of three interviews conducted by the author and Shipwreck Survey students.

Interview no. 1:

Interviewers: Alexandre Hinton (Speaker 1), Bree Cockx (Speaker 2), and Keira Fink (Speaker 3)

Interviewee 1: Anonymous (Interviewee 1)

Date: 19 July 2023

Speaker 1: Let's get started. We have quite a few questions so, and please feel free to elaborate or if you have stories while we do this. Okay. Well, my first question is, have you ever heard of the Endymion? And of course you have.

Interviewee 1: I heard the Endymion when I get here. I never heard of Endymion before.

Speaker 1: Before?

Interviewee 1: Ya, never. And then I, until I get here.

Speaker 1: When was the first time you heard of it? Was it like right after you arrived or was it a bit after?

Interviewee 1: Right after I arrived. Like, I think it was like March, my first dive, at the Endymion. March.

Speaker 1: Okay. March. Which –

Interviewee 1: I can't remember the date, but it was March because it was whaling season. And it was with the development company here. They, it was a charter dive. So it was just three of them. We were filming the Endymion.

Speaker 1: Oh, okay. And this was in twenty –

Interviewee 1: Nineteen.

Speaker 1: Nineteen.

Interviewee 1: 2009, ‘09.

Speaker 1: Okay. So they were filming in, you don't remember you, it's a been a long time so you probably don't remember what they were called.

Interviewee 1: No.

Speaker 1: But that's, but that's interesting that they were, they were filming.

Interviewee 1: They're from Czech Republic.

Speaker 1: Okay. I'll put that down. How many times have you been out on the Endymion? How many times have you dove it?

Interviewee 1: I could not count, but approximately, maybe 15 to 20 times a year.

Speaker 1: Okay. So there's quite a few times you go out. Do you go out usually with just charters or do you also go out just with, or do they usually have to charter the whole boat or if they're just paying for a dive, you don't really usually go out all the way?

Interviewee 1: Most of the time it's like a planned dive, meaning I have divers here and then it's flat and calm. I’ll, calm seas and then I –

Speaker 2: It’s like circumstantial.

Interviewee 1: Yeah. So I like, I plan on taking them to Endymion.

Speaker 1: Okay.

Speaker 2: Will you offer it to people if it's like calm?

Interviewee 1: Yes. If it's flat and calm.

Speaker 1: Okay.

Speaker 2: Do you, sorry. Do you ever get people that come here and they already know about the Endymion, and they wanna see it and they want you to show 'em? Or is it usually you that brings it up?

Interviewee 1: I think when they search about so Salt Cay Divers and they heard about the Endymion [inaudible].

Speaker 3: That makes sense.

Speaker 1: What is one of the things that you've noticed while diving? What's, I mean, besides all the cannons and anchors of course. Is that usually the most memorable thing when you think of the Endymion and your diving there or, or is there something else that usually pops to mind?

Interviewee 1: Well, the colors there.

Speaker 1: The colors.

Interviewee 1: The colors. Especially when there's like flat calm and no current and good visibility, clear. The colors, the swim throughs. There are more swim throughs on, farther north. And also there are two shipwrecks there. The other one was the Companion ship. And I normally take divers there to the other wreck. Where, the first time I got [inaudible], you'll still see the structure of the boiler. And now you don't see anything now. Like 2009, there's like more metal, like, yeah. And just collapsed, just blown by the current or waves.

Speaker 1: Yeah, the color, the swim throughs, is always, is it one of your favorite dives to do?

Interviewee 1: That's, that's one of my favorite dives. Because of the colors.

Speaker 1: Ever? Or just around here?

Interviewee 1: Just, around here. Yeah.

Speaker 1: Yeah. Okay. And going off that, how does this compare, like how does that shipwreck dive compare to other shipwreck dives you've done in the world?

Interviewee 1: Well, most of my shipwrecks I've been was like World War II shipwrecks, huge shipwrecks. So there're still, metal shipwrecks. So you can like, swim through. But this is different. Most of the shipwrecks I've been is like, hundred feet or deeper. Yeah. But this is shallow so you can see colors. Other shipwrecks I've been have been like no colors.

Speaker 2: Very dark.

Interviewee 1: Yeah. Dark.

Speaker 1: Oh, okay. That is nice having that. When the weather's nice, and the current's nice. Having it so shallow.

Interviewee 1: Yeah.

Speaker 2: I didn't think about that before. How it would eat away all the color. Yeah. I mean, makes a difference.

Speaker 1: Yeah. It's nice. I mean, they're impressive too, the World War II wrecks with the big structures.

Interviewee 1: Yeah. Big structures.

Speaker 1: You said about the companion wreck, how the structure has, you used to be able to see a bit of the structure, but now it's gone, for the boiler.

Interviewee 1: Yeah.

Speaker 1: But for the, or for that site and for the Endymion do you, can you think of anything else that's changed since you first started diving in 2009?

Interviewee 1: Well that musket shots. I just found that after hurricane 2000, in 2017. And also the big anchor, that was, the first anchor you see before you see the wreck, the other, the cannons. Yeah. That move a little bit here.

Speaker 1: Oh, it moved.

Speaker 2: After the hurricane?

Interviewee 1: After the hurricane moved

Speaker 1: Further into the channel or?

Interviewee 1: Further, like in here. Not towards, like –

Speaker 1: More towards the…

Interviewee 1: More towards the boat where we anchored, normally anchor. Yeah.

Speaker 1: Okay, cool. So that happened after the, the big hurricane.

Interviewee 1: The big hurricane. That was 2017. But there were big hurricanes before.

Speaker 1: Yeah.

Speaker 2: But so powerful.

Interviewee 1: Yeah. But the last hurricane, I think, because it cuts Great Sand Cay into three.

Speaker 1: Yeah.

Interviewee 1: You this was, Great Sand Cay was like cut. That's what happened. Because 2017 was like, bigger because they cut Great Sand Cay. Big waves cut through Great Sand Cay.

Speaker 1: It's crazy to have enough pressure to, and force to move something that big.

Interviewee 1: The anchor, yeah. Move the anchor.

Speaker 1: So the musket balls are super interesting too. But they're, and they're all kind of in the same area.

Interviewee 1: Yeah.

Speaker 1: You see any other interesting artifacts?

Interviewee 1: When I first saw that, there were like five together. But the last time we were there, we were like, like one, one, one.

Speaker 1: Oh, so it's scattered.

Interviewee 1: Scattered, I think.

Speaker 1: Yeah, those are a little easier to move. What about the cannons? Are they, I mean, it's kind of hard to tell 'cause they're all…

Interviewee 1: No, no the cannons were like, they're fused together. So they're not moving.

Speaker 1: So they're not moving. What about, you know, on the, the, you have the anchor and you have the cannons and then you have kind of the side of the wreck.

Interviewee 1: Yeah.

Speaker 1: You know, all the copper kind of sheathing that you see?

Interviewee 1: Yeah, yeah.

Speaker 1: Was there that much when you first started diving it? Or was there less?

Interviewee 1: Same, same.

Speaker 1: It was the same? Okay.

Interviewee 1: But you'll see more on the west side, meaning, I think they're already blown because of the current and then waves.

Speaker 1: Speaking of artifacts, do you know of any of them that have been taken from the site or moved around from the site?

Interviewee 1: No. Uh, I don't really know. But we don't practice, like touching anything. But you, but you never know because musket shots, you know.

Speaker 1: That's also, I was like, it's an easy thing to take.

Interviewee 1: Yeah.

Speaker 1: It's always just interesting to see 'cause that's another thing with wrecks. Little things like that are very easy to pick up and see. You were first here in 2009. So, there were some people here earlier in '92, 2001, 2007 who had done some research on that. But that was pre, pre-Richard on island.

Interviewee 1: Yeah. There was also a group of divers who came and they have big camera, meaning like two, three people take that out of the boat to put in. But they have communication system. Mask with like, that they communicate underwater.

Speaker 2: I wonder if that was Drain the Oceans. What year was that?

Interviewee 1: I can't remember, what year was that.

Speaker 2: Is it like recent?

Interviewee 1: Yeah, recent.

Speaker 2: I bet you that was Drain the Ocean.

Speaker 1: There's a show called Drain the Ocean. They do it on different shipwrecks around the world. What they do is they do a little bit of history on the wreck, and then they do drain the ocean and they do a CGI thing or drain everything away and so you just see the wreck. And they talk and they show footage and things like that. So that's why, and they did an episode on the Endymion. And that's why we think it may have been them also because they actually asked Ruud for footage for this. So maybe they, when they came here and did it, they didn't get what they, or the good footage for them.

Speaker 2: Maybe they just used like that big massive camera for like the CGI stuff.

Interviewee 1: Also the communication system they could not communicate well. You know, they're talking like, do this, do this. They could not hear each other.

Speaker 1: Yeah. That's the thing about new technology, it's great, but when it doesn't work then yeah.

Interviewee 1: Yeah, it causes a problem.

Speaker 1: Have there been any other researchers? I know you said them. Would you like, biologists go out there usually? Or it's just more fun divers?

Interviewee 1: More fun dives. Yeah. It's only them that I remember that they measured everything.

Speaker 1: Okay. For you, does this wreck mean anything special for you? Or is it just one of your favorite dives here to go on?

Interviewee 1: It's one of my favorite dives here because it's only us. No other people dives there. Fishermen of course. You know, like when I there they'll ask me, oh, did you see something? Those kind of things.

Speaker 2: I guess it'd be too far for Grand Turk.

Interviewee 1: Too far for Grand Turk and too far for other.

Speaker 1: Yeah. So it's only people from Salt Cay that really go here?

Interviewee 1: Yes. Yeah.

Speaker 2: It's a Salt Cay exclusive dive.

Interviewee 1: Yeah. It's, that a special. Okay.

Speaker 1: And do you think it means anything specifically to the island or is it just another dive that people go on? There's not really any special connection to it really that you've noticed?

Interviewee 1: No, no. Because of, I think now that we have that, that if Ruud will share us the knowledge. Or like other like, information about the wreck, maybe that will make more.

Speaker 1: It'll have more of an effect.

Interviewee 1: Yeah. Effect and more, interest to other divers to explore.

Speaker 1: Ruud said and you said there's a lot of fishermen that go out there. Who else do you think we should ask questions?

Interviewee 1: The guy, he dives all over the Caicos and Turks Banks. Every day, every day. Mostly like, Turk Banks. And they dive for fish lobster. Uh, his name is, we call him Butcher. We call him Butcher. Derek.

Speaker 2: Where would we find them?

Interviewee 1: In Grand Turk. Fish chef. But he's out almost every day, so he'll be back around three, four o'clock. At the fish.

Speaker 1: Okay. So he goes from there every day.

Interviewee 1: So he must have seen other ship wrecks around, but they didn't notice, you know, if we just…But we can try and ask him.

Speaker 1: But that's good to know, especially have you've seen anything else. And then what about on island? Are there local people here who dive it locally usually?

Interviewee 1: Uh, no. No.

Speaker 1: It's just usually you and then guests. I know Rick said he's been there, but it was a long time ago. What about, um, Kim and Clyde, do they dive?

Interviewee 1: No, only Clyde, I just certified Clyde, re-certified Clyde. But never been to Endymion.

Speaker 1: I know Liquor said he's been there before, so I wanted to ask him. But that was, I don't know when the last time.

Interviewee 1: Yeah, but not diving.

Speaker 1: But that would be really interesting to hear about. This is perfect. Thanks for answering these.

<End of interview>

Interview no. 2:

Interviewers: Alexandre Hinton (Speaker 1) and Jack Brown (Speaker 2)

Interviewee: Anonymous (Interviewee 2)

Date: 20 July 2023

Speaker 1: When did you first go there?

Interviewee 2: It was in 1992. That's when I was working with the dive operation. Not working with them, I was just filling tanks. I was just the tank guy, I was 14 years old around that time. So they had a trip to Endymion. They needed two guys, one of my other friends. They wanted us to help them, you know, help the people in the water. And the guy had like a barge, like a ramp that you put down, so that type of boat. And then its like kind of difficult to get in and out. So you put it as low as you can and people will just slide right in. It was pretty easy. You just ease yourself into the water.

Speaker 1: That was not the dive shop, it was some other person?

Interviewee 2: It was the first dive operation here, Bryan Sheedy. [inaudible]. The dive shop was right in the corner, where that little store is, like a little office. Right next door to you guys. It was right there. They changed the whole structure of that place. It was like a guest house. The guy who used to own it he was from Philadelphia. So he moved down here in 1989 and he wanted to start and restaurant and a dive operation. And two years after that was when I was in high school so I would come here for the summer and so all my summer jobs. It was really good pay, 50 cents a tank and it had like 60 divers a week.

Speaker 1: For a high school job that great.

Interviewee 2: One day he planned to go to the Endymion and he's like I really wanna go down there and see what its like. Ya know I hear people talk about it. But nobody really used to dive there until he came in, you know.

Speaker 1: What was his name?

Interviewee 2: Bryan Sheedy. And his dive operation name was Porpoise Divers. He started around '89.

Speaker 2: He was doing that as a regular trip, over that way?

Interviewee 2: He had some divers, people just diving going there to dive. And that's how I knew about the currents and stuff. Cause he explained it to the people, and they have dinners and be at bar and restaurant and you would sit there and hear them talking. And he would tell them about the tides and the currents and which days would be better to do. But the boat he had could have gone in rough seas too because it was a pretty stable boat. He would tell them with the moon phase you go with the lightest pulling of current, the quicker up and down tides, because the tide didn't have time to pull. So he'll pick a day and he's like this would be the best day to go. It might be a little windy but we would still have to go because that would be the best time for you to get in a lot of dives. But going there was like an adventure.

Speaker 1: Yeah, it is far.

Interviewee 2: It is far.

[interlude]

Interviewee 2: I was so excited. When we got everybody in the water, so we would normally snorkel. I was just snorkel the top. We wasn't allowed, we weren't certified to use tanks at that time. So we would snorkel the whole area. I mean, it was like the prettiest place I'd ever, ever seen. I mean the corals was like glowing. The colours were so pretty. I mean, its still that way in certain areas now. They was saying there was two wrecks there.

Speaker 1: Yeah.

Interviewee 2: Yeah, there is one further north of the Endymion. So you can see the chains but it was really clear at that time. I mean you could have seen the big boilers, the engines, you could have seen the big chain, anchors. And they had like a lot of different artifacts. You could have seen most of the structure of the boat laid out, how long it was. You could have seen all of that, you know. A lot of debris was there.

Speaker 1: So, a lot more then today? A lot of its gone down with the hurricanes?

Interviewee 2: Yeah, after the Hurricane Ike. We went out there just to do a little check on it to see how bad it was and it was like, it was pretty much turned up. The boilers was still there, still intact. And when you swim over you see like tons of fish. Tropical fish, you had like lobsters, I mean the reef was full of lobsters because nobody would touch them. So nobody ever knew about it. A lot of people didn't know, the Endymion, they heard about it but it was so hard to find. Cause at that time the coordinates was like, basically only the guy that would do the diving would have the coordinates. He wouldn't give it to the fishermen because they would interrupt the whole thing. And then, after that, they used to go there pretty regularly, just diving and stuff. And then they had the research, the guy with the research who came in and he wanted to do some, he said he was going to do some trying to find gold or whatever. I think he did.

Speaker 1: What year was that one?

Interviewee 2: That happened in I think 1995, '96. '96 I think. The lady that went with them on the trip I think she owns a house in Salt Cay. She has a house up by the Government House – the two story green and yellow place. And you see the two story wooden place that's next store to it? She owns that. She was here when they first went down to do the – to look at it.

[interlude]

Interviewee 2: When she went down, her name is Allison, Allison Williams. She comes to Salt Cay once in a while. She moved to North Caicos now.

Speaker 1: Ah okay, so she's not on island now?

Interviewee 2: No. But, the changes throughout the different hurricanes I mean it really, and most of the stuff I really believe it's like covered in the reef. Because the reef would grow on anything. I think the majority of the site, I think that there is a lot of stuff that is still trapped in there that is of good value but it very hard to get too because now you have to go through the coral.

Speaker 1: And especially how much fire coral is down there.

Interviewee 2: Yeah.

Speaker 1: Its crazy, it just covers the whole thing.

Interviewee 2: Whole thing.

Speaker 2: There is just a wall of it.

Interviewee 2: So I think its there for a reason. Trying to tell you stay away. Whatever treasures are there is like, don't touch it.

Speaker 1: So you first started just filling tanks you said.

Interviewee 2: Yeah.

Speaker 1: After that did you, you said you were off island for a while.

Interviewee 2: For ten years. I moved to Florida for ten years.

Speaker 1: When was that?

Interviewee 2: In 1996.

Speaker 1: To 2006. And when you came back did you do, did you do a bit of work for the –

Interviewee 2: I started diving for my dad here.

Speaker 1: Oh yeah, because your dad owned it.

Interviewee 2: Yeah, yeah. So I started working with my dad and Debbie. Got certified, got my Open Water then I went on and did my Dive Master. And then afterwards I was like, cause I have two daughters, they were young at that time. [inaudible]. Diving is of passion, its not something that will take care of your bills. Unless you become an instructor and then you can advance yourself into making more money by teaching people and extra stuff.

Speaker 2: Its not known as a high-income industry.

Interviewee 2: And its a fluctuation, and seasons. Cause some seasons would be good and some would be not so bad. And the weather vary.

[interlude]

Speaker 1: And so when did your dad sell it?

Interviewee 2: About 5 years ago?

Speaker 1: Oh yeah, it was recent wasn't it?

Interviewee 2: Yeah, recent. It had to been in 2017.

[interlude]

Speaker 1: Do you fish over at the Endymion also?

Interviewee 2: No, I fish far away from here. Where I normally fish is like way south of the Endymion.

Speaker 1: Oh, so its even further.

Interviewee 2: Further. Its about 40-something miles from here. When I go fishing I go way out.

[interlude]

Speaker 1: So from the first time when you dove the Endymion to a little more recent –

Interviewee 2: That was in 2004. Was my first time with my dad.

Speaker 1: It was your first time scuba diving it?

Interviewee 2: Mhm.

Speaker 1: Did you think it was a lot different scuba versus snorkelling?

Interviewee 2: A lot. It's a big difference. I mean, you get to see more, you get up close to it. But I would normally free dive some spots but SCUBA is much easier. We would anchor and go down in the sand and put the anchor in because it would be close to the dive site.

[interlude]

Speaker 1: It was incredible going down. Have you ever seen those cannons move?

Interviewee 2: No, they never moved. They're not moving. They're going to be there forever.

Speaker 1: Richard said yesterday, that after Irma that the big anchor in the little passageway moved a few feet actually.

Interviewee 2: It could have. It was really bad. It had to, something had to move down there in that sea.

Speaker 1: And since that's not really concreted to anything else that's why.

[interlude]

Speaker 1: What do you think was your most memorable part of your diving on the Endymion? Was it the cannons, the anchors, the corals?

Interviewee 2: The boilers. Yeah, that was my most exciting part. Cause there were lobsters standing on top of each other. They were peaking out a little hole, and you could just look in and they were like, lobster upon lobster. It was so pretty. You know, my dad has a lot of pictures, you know he's not here now. He has a lot of pictures at his house. That he took, of the Endymion. I know Debbie should have a lot of pictures.

[interlude]

Speaker 1: Who else would you think would be a good person to talk to about?

Interviewee 2: If my dad was here he could have tell you, he would tell you the whole life of the Endymion cause he'd been doing it from when he was a young boy. And he's now 70-something years old.

Speaker 1: Where is he now?

Interviewee 2: He's in Provo but you're going to miss him because he ain't coming back until August.

Speaker 1: So close.

Interviewee 2: He knows everything. I mean tells me some stuff about when he used to go down there when he was young and they could have seen, he could see the boat. The whole structure.

Speaker 1: Because the more recent one, its been a hundred years.

Speaker 2: All that is left is the metal work now.

[inaudible]

Interviewee 2: He knows how it was. He just goes out there, he knows where to go. He knows exactly.

Speaker 1: I'll definitely have to ask him if he knows who was the first person to find it out there.

Interviewee 2: To discover it.

Speaker 1: Because you know in some reports they're always like it wasn't discovered until 1990 and you're like –

Interviewee 2: No, it was before that.

Speaker 1: The people here knew it was out there.

Interviewee 2: Yup.

Speaker 1: When was the last time you dove out there?

Interviewee 2: Well, it was about, I took some boats there. [interlude]. That was about last year, no year before that. So it would be 2021.

[interlude]

Interviewee 2: But it was different still even when we went there. Cause that was after the 2017 hurricane. So it was totally different still. You could see the changes like, the boilers were more like broken up. And you could see that the next storm it would be gone. A lot of changes. The reef didn't look as pretty as it was. Cause after the sand probably beating on it and the waves.

Speaker 2: Its mostly hard corals down there now, the life isn't so visible.

Interviewee 2: After the storms it does it to it. A lot of the sand would be covering it for a period of time so it would get much sunlight. And that is what kills most of the corals.

Speaker 1: I mean its still gorgeous but I wish I would have seen it when you first saw it with the lobsters everywhere.

Interviewee 2: I mean fish, sharks.

[interlude]

Speaker 1: DO you remember a guy, I don't know if he came here or if he just did research coming from somewhere else, his name was Mensun Bound? He wrote a paper on the Endymion and said oh we went out there and did some research and then they brought up some nails also that are supposed to be in the museum but they're not. [interlude].

Interviewee 2: I've heard about him. Probably the same guy who I was talking about with Bryan. Which year that was again?

Speaker 1: That was 1992.

Interviewee 2: '92. That was a little early. Probably he was here too. Probably he came over. Cause I remember the guy they was talking about and he found some gold spoons and forks and they never made it to the museum. He took off the next day, and he never came back. He's never been back here since.

[interlude]

Speaker 1: Theres a guy who came and did research for the Turks and Caicos government in 2007. His name was Don Keith. But they didn't dive with here because they had their own boat. So I don't know if they even stopped here or if they just headed straight.

Interviewee 2: I think I've heard that name and I think I remember seeing a research boat out here one night one time and that's around the same time in 2007. And this boat was right out here and it was light up, it had these fluorescent lights around the side. And you could tell it was a research boat. And they was in the water doing something. It has to be around that same time.

Speaker 1: I'll show you a picture of the boat.

[interlude]

Interviewee 2: Yeah, that's the same boat I'd seen. Exactly. That's the exact same boat. Its been here a couple of times. Yeah, more than once.

Speaker 2: All around the same time in '07?

[interlude]

Speaker 1: Have you dove any other shipwreck sites around this area?

Interviewee 2: No, we've been looking to find another one.

[interlude]

Interviewee 2: But a lot of boats come up. You could be sitting here sometimes and you'll see boats coming up. You can tell they're going out there to do a dive.

[interlude]

Speaker 1: I wanted to ask. I know you've known the Endymion since you're a kid, and your dad has known it.

Interviewee 2: Ever since he was a kid.

Speaker 1: Does it mean anything special to the island or is it just a cool dive?

Interviewee 2: No, its something special. People really cherish that area. They protect it. Like I said the coordinates wouldn't be given to anybody. If you're a diver or something or taking people to do snorkelling or dive, yeah you could get it but to fish and stuff.

Speaker 2: So you see it as a bit of you're history, you don't want it messed with?

Interviewee 2: No.

[interlude]

Speaker 1: So for the Endymion, even though its not necessarily, like the history is not linked to the island, its still part of your island in a way?

Interviewee 2: Yes, oh yeah. When people come in and they come in here, the first thing they see pop up on their diving is dive the Endymion wreck. And everybody be like yeah we got to go down there. It's like a big thing to go there.

Speaker 1: Yeah.

Interviewee 2: I mean its really pretty, its some can say that oh I did the Endymion, you know?

Speaker 2: There is a lot of knowledge on the island about it, because obviously it's my first time out here. I didn't really know about it so before I came out they said oh we're going to dive the Endymion. I chucked it into Google and without going into the proper archaeological records which I'm not [inaudible] I could barely find anything about it. There was about four different ships with the same name, a few dates, and a very brief history of what happened. There's not a lot of knowledge about it anywhere else really. So its nice you've guys have managed to keep it alive in a way.

Speaker 1: What do you guys say about its history? What do you know about its history?

Interviewee 2: We just know the dates mostly when it wrecked. The year when it wrecked. Everybody wants to know when it was discovered like you say. Nobody knows who was the first one who actually found out about it. But I think someone who was on that ship who knew something and passed it down through histories in some book or something they probably wrote who came down on that boat and probably wrote a book probably somewhere in England somewhere inside of a library somewhere. I really keep thinking that because somebody had to get their hands on it.

Speaker 2: I mean the Endymion, it was a big British military ship so there got to be some history on it and those records.

Interviewee 2: Yeah. They've got to have it somewhere. So I think some people were studying or hearing about it and they ran an investigate into it. And they probably say alright we got to send a team down, probably a British team or something.

Speaker 1: I mean its very interesting, because if you lose a warship, especially the British, they aren't very happy. [interlude]. They probably passed it down and maybe some stayed in these islands and passed it down and then that's how.

Interviewee 2: Yeah.

[interlude]

Speaker 1: Thanks for answering all of these.

Speaker 2: Yeah, this has been awesome.

<End of interview>

Interview no. 3:

Interviewers: Alexandre Hinton (Speaker 1) and Luke Willis (Speaker 2)

Interviewee: Anonymous (Interviewee 3)

Date: 21 July 2023

Speaker 1: You used to own the dive shop, right?

Interviewee 3: Yes, I used to own the dive shop for 25 years and just sold it a couple years back. I sold it in 2019. No, twenty. Right before the covid time, it was time.

Speaker 1: And how long have you lived on the island? When did you move here?

Interviewee 3: In 1997.

[interlude]

Interviewee 3: I actually came in 1990, it was my first visit. But I just kept coming back and it was the first island I ever came back to twice. I loved it, it was for me. So then I just started the dive operation and here we have it.

Speaker 1: Here are some of the Endymion questions. So you were running the whole dive operation. How many times have you, do you think you've dove the Endymion?

Interviewee 3: 50 plus.

Speaker 1: How often would you usually, just whenever the weather was good? You would offer it?

Interviewee 3: The weather needed to be good. And so it limited us. You know the day you guys I think went down to Big Sand Cay I was shocked because it had to be rocking and rolling that day.

[interlude]

Speaker 1: When was the first time you actually dove the Endymion? Was it before you moved here then?

Interviewee 3: Yeah, in 1990. That was when I first visited. Maybe '91. Yeah.

Speaker 1: But people knew about it way before that I am guessing.

Interviewee 3: Not way before that. I'd say, Bryan Sheedy actually is the one who discovered it with some people. Bryan was here from the '80s so it had to have been discovered, I think maybe he was here before that.

Speaker 1: Did he own –

Interviewee 3: Yes, he owned Porpoise, he owned a small shop called Porpoise Divers. Nand so then I bought the rights to my own name and dive shop so that he didn't want to be in the diving business anyway.

Speaker 1: How did you end up hearing about this island in the first place before you came out here? Were you just looking at scuba destinations and then this came up?

Interviewee 3: I looked for the third largest barrier reef and saw Turks and Caicos and then I called around to Provo and Grand Turk and Salt Cay and Bryan actually was probably one of the best marketers I have ever talked to and he convinced me that Salt Cay was the place to be.

[interlude]

Speaker 1: So you've dove here since the '90s. Do you remember- there are two researchers that I have found looking into the Endymion. One was in 1992, his name is Mensun Bound, have you heard of him?

Interviewee 3: No.

Speaker 1: I don't think he actually stopped here. I think he went there from one of the bigger islands. And then the other one was Donald Keith.

Interviewee 3: I have his report. Don Keith and Roland Davis in 2000 came down and we took them out to the Rock and he has done this entire report that I can't give you but I can let you scan it.

[interlude]

Speaker 1: This one I don't have. I have his 2008 report when they came back but this one isn't online anywhere.

Interviewee 3: Look at this. It was so different back then from what it is now. And the anchors, and there are so many anchors and all of the cannons were so encrusted.

Speaker 2: He gave you this?

Interviewee 3: Yeah.

[interlude]

Interviewee 3: And then he came back and we took him out again. He came back twice I think, twice after that I think. And you've seen the map of the Endymion.

[interlude]

Speaker 1: It's a fun wreck to look into. There is so much left over there.

Interviewee 3: There is so much missing over there. So many people have taken so much from there. I mean each time I went back, even though we were only one of two operations that went there, dive operations that went there, then, every time I went more cannon balls, and little musket balls were missing and pieces of iron. You heard about the wreck next to it?

Speaker 1: Companion Wreck? Yeah.

Interviewee 3: And there are probably, there is 100s of wrecks that nobody has found yet that are somewhere out here. The one in Provo, the one in Grand Turk [inaudible] and then the Endymion and the boat that sunk next to it. You can tell the differences because, well you know how to tell the differences.

Speaker 1: You have this 18th century wreck and then you have these hunks of metal right by it. So the artifacts, when we were down there we saw a few little musket balls but there used to be a lot more on the site? Were there actual cannon balls too?

Interviewee 3: Yeah.

Speaker 1: That is impressive to bring up, because that is heavy.

Interviewee 3: It wouldn't be too hard if you had a bag. People from the DR, I mean just to even get the balls for metal. There is poachers and cause it's so shallow they can free dive down so they don't even need any equipment they can just go down.

Speaker 2: Just reading here in this report about looting.

Speaker 1: When you first started diving it, did you see any specific artifact that you really remember, besides musket balls and cannon balls. There wasn't anything like, personal items such as ceramics or that was all, they had time to empty the ship so I think they took all that but I just wanted to make sure.

Interviewee 3: No coins, no gold. We looked, we didn't find anything without disrupting anything. No there was nothing obvious. The cannon balls, the anchors, the shot pellet things, that's mainly it. And the chain. And the pins, people took pins sadly. If you look at the shape of the boat the pins are still in the bottom, or they were.

Speaker 1: Oh, the copper pins.

Interviewee 3: Yeah. People took those and then you can kind of see the outline of the boat where the wood was because of the copper pins.

Speaker 1: Yeah, because those are also an easy thing to take up.

[interlude]

Speaker 1: Speaking of other changes to the wreck, what kind of changes have you've seen besides the looting since you first starting diving? Have the hurricanes especially impacted it a lot?

Interviewee 3: Yeah. A lot more sand are on the corals which I believe are from the hurricanes. Because after Ike in 2007 we went down there and Ike blew a hole through Great Sand Cay that was never there.

Speaker 1: Yeah, I remember hearing about that.

Interviewee 3: Its like a slit through the whole island, separating it. Yeah, that was sad. But there is so much sand, so I that's why I think if it did that to an island then it put the sand up here. So we would go by and we would be brushing off the sand from the fans and all of that. There was a lot of sand which I think covered up a lot of stuff. And so if someone was to go down and really take time they might find a lot of stuff that I already saw and was there.

Speaker 1: Yeah, these hurricanes impact these sites like no other. Richard was mentioning after Irma or Maria that it actually moved that big anchor in the channel a foot or two from the wave pressure, since the force was so great. The cannons were all fine because they are concreted together.

Interviewee 3: Did you have much current when you dove it?

Speaker 1: Yeah.

[interlude]

Speaker 2: Just didn't get to do much of an archaeological investigation, more of a quick look around, because of how rough it was.

Interviewee 3: What is sad is that there is no way for us to know before we take off there. We always say it may or may not. So we usually have the Dive Master jump in the water and if you don't see them go any place and they're kicking like wild you know we're not going to be diving. So on some days there is no current at all and it is wonderful. A lot of people just come and snorkel because its so shallow you can just come and see. One nice thing is that not many people go out there. So the fans and everything that sometimes people kick isn't happening.

Speaker 1: That is nice, its not the easy dive site that people usually go to so it protects it a little more.

[interlude]

Speaker 1: So you said, Donald Keith, he came in 2000 and then did the research and then, was it a couple times you took him out to the wreck, and then- and then he came back again you said?

Interviewee 3: A couple times. I think he was back in 2004 or 5 and then maybe before the hurricanes.

Speaker 1: Yeah. In the one report I found, was his 2008 report where he said came back in 2007 but it was with a big research boat.

Interviewee 3: Right.

Speaker 1: For the Turks and Caicos Government to do a –

Interviewee 3: Right.

Speaker 1: Do you know if any other researchers have come out there or was that the only?

Interviewee 3: That's the only ones I know of, but like you suggested maybe they came down another island and stopped.

[interlude]

Speaker 1: How has this wreck for you, I don't know about your other diving history, but how does that wreck compare to any other shipwrecks that you dove before.

Interviewee 3: All the other shipwrecks I've dived were really deep and so I love this one just because its shallow and because even with currents you can swim in and out and around and through the swim throughs and then there is a whole other area. There is just differences. In La Paz, there was a lot to see on that boat because of the structure but not anchors and cannons. So, it was the oldest shipwreck I'd ever seen so I like that because of the history of that. And then I've, warships and you know, and Bonaire and [inaudible] but I like this one because its shallow. And the colours come through.

Speaker 1: It is rare to have that and I think it makes it special. And there are just so many cannon too everywhere. We'd seen photos before but until you go down there and see it in person then you're like okay, this is a very large anchor.

Interviewee 3: It is amazing how many people miss the cannons. But they miss the whole. And they were so encrusted with corals that they just thought they were diving over a bunch of rocks of some sort. They missed them.

Speaker 1: I think that there are so many of them too that you don't think oh gosh, all these. For you, what does, does this wreck site mean anything special for you or have you heard from the people on the island if it means anything special for them. Because its not linked to the history to here but since its, a lot of people dive it from here do you think it means anything particularly special.

Interviewee 3: No. Only that it is probably, no that it is the oldest shipwreck that's been found in the Turks and Caicos to my knowledge. So, they brag about it kinda of. So in that perspective. Is it special? Every dive is special. It is special from that perspective. But it doesn't have something that where I just, you know I got to get back out and see it again.

Speaker 1: Totally understand that. It is a very nice dive.

[interlude]

Interviewee 3: Bryan [Sheedy] claims to have found the Endymion but it looks like from what Donald found is that somebody else already found it themselves and never recorded it to anybody in document. And so Bryan, at least from the Turks and Caicos, is the first person. They found it going on a sled and they were dragging the divers behind on a sled to see, and they were purposefully out looking for dive sites. And so they, a guy by the name of Sye Marvel and him were together and Sye was the islands historian and so he was out. Unfortunately, he died a couple years ago. Most of the people that might know something more died already. I mean like the captain that was driving the boat when Bryan was pulling the sled.

[interlude]

Speaker 1: I think that is all my Endymion questions.

<End of interview>

Appendix 2

The following presents the transcription by the author of the *Endymion*'s logbook (National Maritime Museum Greenwich WDR/2).

Author's notes:

[1] Discrepancies and inaccuracies may arise throughout due to difficulty in deciphering handwriting.

[2] Dates from 22 September to 26 September and after 10 October 1790 are not transcribed due to irrelevance to the *Endymion* wrecking event.

[3] The below transcription keeps with the grammar and spelling of the original logbook as much as possible, with the exception of short-hand written out fully to avoid confusion.

[4] When transcribing an eighteenth-century British naval logbook, it should be noted that a navy day began 12 hours prior to the civilian day. Therefore, when reading a logbook, midnight appears halfway through the written day, with noon noted as the end of the day. This is important to understand during transcription to get the correct timing of events.

Endymion Troop Ship

24th Regiment from Cork to Quebec
53rd from Quebec to Portsmouth
22nd regiment from Chatham to Cork
47th from Cork to Halifax

And Hence to New Providence, and Landed the Regiment from Sea, there not being sufficient water on that land for the Ship. From Providence the Ship proceeded to Port Royal Jamaica and from Jamacia to Turk Island with guns etc. etc. etc. for the defence of the Island[.] Having on board a Mr. Miller deputed by Lord Dunmore the Governor of the Bahama Islands to Admiral Affleck at Jamaica for guns etc. etc. to defend the Islands from an attack by the Spaniards for the [Havana]. at this time the Diania Captain Macnamara Russel — bearing the flag — and the Cygnet Sloop of War[,] Captain Alan Gardner, and the Cutter Liberty[,] Lieutenant Searle and[.] The Endymion under Equipment and purifying, having from Ireland to Halifax and Providence had the 47th Regiment onboard for some months. The Cygnet[,] Captain Alan Gardener[,] Sloop of War, was directed to receive the Guns etc. etc. to be conveyed to Turks Island, but some demur or difficulty was stated on the part of Captain Gardener. The Admiral was pleased to say he must find an Officer to carry his orders into Effect, who had no difficulties to start. at this time the Endymion had the Liberty Cutter (Lieutenant Searle) alongside dismasting of her and no other Ship in Port. [illegible] the Diania with Flag. She was directed to carry into Effect the Service which Captain Gardener has been directed to proceed on. An able Pilot was furnished by the Admiral, and the Ship proceeded with Instructions to allow Protection to the Merchant Ship Lord Hood of London, then at Port Morant, which Ship had missed Sailing with the Convoy for England. On the 13th of August 1790 Received Instructions from Admiral Affleck relative to my proceeding to Turks Island and an able Pilot Samuel Barnett was first onboard by the Commander and Chief Admiral Affleck to Conduct the Ship to the Anchorage of Turks Island. Also received on board Mr. William Miller whom Lord Dunmore has deputed to with Dispatches to Admiral Affleck for assistance etc. etc. On the 14th of August proceeded to sea.

Week Days	**Month Days**	**Winds**	**Remarks etc. on board His Majesty's Ship Endymion. Port Royal 1790**
July Thursday	1790 22nd	SE [by] E ESE NNE E [by] S	Strong sea Breezes and hazy. unbent all the sails and Blacked the yards and mastheads. Employed overhauling the fore top mast rigging. AM Bent the sheet cable and got the anchor over the side clear for running. Answered the signal on board. The Flag for Lieutenants. The launch Employed watering the Ship from Rock Fort.
Friday	23rd	SSE SE [by] E	Ditto Weather. Employed overhauling the Rigging. The launch proved so leaky sent her to shore to the yard[.] hauled her up caulked her and launched her again and sent her off for water. got the fore top mast off from the yard, the defective part being

			secured by an iron hoop. Answered the signal on board. The Flag for a petty Officer. Received 150 [lbs] of Fresh beef.
Saturday	24th	SE [by] E Variable off ye Land SE [by] E	Regular Sea and Land Breezes. PM. got the Fore Top mast the thro' the Cap and Rigged it: Employed about the Rigging. Started all the Filled powder and dry'd the Cartridges they being damp'd by the Nitri in the Powder. at 6 AM sail'd hence H.M. Ship Acteon with such of the Merchant Ships as were ready to go under her Convey for England. Came on board by an Order from Admiral Affleck etc. the Masters of the Blonde and Diana with the Masters [illegible] of the former to survey the Beds that had been used by the 22nd and 47th Regiment and Condemned 448 of them which were all Thrown overboard. The launch watering. Received 203 [lbs] of Fresh beef.
Sunday	25th	SE [by] E NE ESE	Ditto Weather. PM got the main Top gallant mast down and struck the main and mizzen top mast. Stripted them and rigged them again. The Blonde shifted her birth farther out. at ½ 4 AM the Admiral shifted his Flag from the Blonde aboard the Diana. ½ past 5 His Majesty's Ship Blond with the rest of the Convoy sail'd out of the Harbour. Received 150 [lbs] of Fresh Beef. The Launch Employed watering.
Monday	26th	ESE NNE S [by] S	Ditto Weather. PM Employed as necessary. AM. lifted the Fore Rigging etc. Then set up the bob stays, and stay'd the Fore mast: The Launch Employed watering.
Tuesday	27th	ESE N E [by] S	Ditto Weather. PM set the Fore Rigging up etc. AM. lifted the Main Rigging to repair the service etc. The Launch Employed watering. Received 200 [lbs] of Fresh Beef.
Wednesday	28th	ESE NNE SSE S [by] S	The 1st part. Strong sea Breezes — with a heavy shower of rain. The middle and latter regular land and Sea Breezes. PM. Stay'd the main mast and set the rigging up. AM. Employ'd setting the mizen rigging up etc. — haul'd the Cutter up to repair'd. The launch Employed watering.
July — Thursday	1790 29th	SE N [illegible] SE [by] E	The 1st and Latter parts strong sea Breezes. The middle part Light Breezes off the Land. Employ'd Rattling the main and mizen Rigging etc. The launch Employed watering.
Friday	30th	S [by] S N [by] E ESE	Ditto Weather: PM. fidded the top mast and set up the Rigging. AM: got the top Gallant mast up and swayed up the lower yards: Employed Reeving the running rigging. Answered our signal for weekly Accounts. The launch Employed watering.
Saturday	31st	SE [by] E N SE	Ditto Weather. PM: tarr'dd all the rigging fore and aft. AM Employed scraping the Decks etc. and washing below. The launch Employed watering.
August Sunday	1st	SE [by] E N E [by] S	Regular sea and Land Breezes. PM. was sold Publicly at the mast. The Clothes etc. belonging to the late [Josiah] Woolerston. AM. sent one man to the Hospital — Received [illegible] [lbs] of Fresh Beef.
Monday Cygnet Captain A. Gardener	2nd	ESE N [by] E SE [by] E	The 1st Part: Fresh Breezes and hazy[.] Middle[:] Light Breezes and Cloudy[.] Latter Part: Fresh Breezes and very Dark Cloudy Weather. PM Anchored here His M. Sloop Alert and Liberty Cutter[.] AM Employed Variously about the Rigging[.] Came into Harbour H.M. Sloop Cygnet (Captain Gardener). Launch Employed Watering.
Tuesday	3rd	ESE NNE SE [by] E	Regular Sea and land Breezes[.] PM Received [boatswain] Stores 1 Puncheon, and 1 Hogshead of Rum and Cocoa and

			Sugar[.] AM Employed as Needful[.] Received 177 lbs Fresh Beef.
Wednesday	4th	SE [by] E NNE ESE	Ditto Weather. PM Employed as Needful[.] AM Employed hoisting up Provisions out of the After hold to get at the Old Provisions[.] Scrubbed Hammocks. The Launch Employed Watering.
Thursday	5th	ESE N SE [by] E	The 1st Part: Fresh Breezes and hazy[.] Middle[:] Light Breezes and Clear[.] Latter Part: Fresh Breezes and dark Cloudy Weather. PM Employed restowing the after hold and Working up Junk.
Friday	6th	SE ESE NNW ESE	The 1st and latter Part. Fresh Breezes and Squally[.] Middle[:] Light Airs and Clear[.] PM Employed restowing the After hold and working up Junk[.] AM: Died at the Hospital [Martin] Curren Seamen[.] Employed variously and White Washing between Decks[.] Answered the Signal for Weekly Accounts. Sold at the Mast the Clothes of the Deceased Martin Curren.
Saturday	7th	SE [by] E N ESE	Regular Sea and land Breezes[.] PM Employed White Washing between Decks and Working up Junk etc. Painted the Jolly Boat.
Sunday	8th	SE [by] E N [by] E ESE	Regular Sea and Land Breezes[.] PM Employed working up Junk[.] AM: Employed as Needful[.] Received 104 lbs Fresh Beef.
Monday	9th	SE [by] E ESE N ESE	The 1st and latter part: Squally Weather. Middle[:] light Breezes and Clear[.] PM Received a Message from the Flag Ship to get ready for Sea[.] Employed getting the Sails from the Shore and getting them ready for Bending[.] The Launch Employed watering.
Tuesday	10th	ESE Variable ESE	Regular Sea and land Breezes[.] PM Bent all the Sails[,] hoisted the Launch in and Stowed her on the Booms[.] Unbent the Sheet Cable and got the Anchor in and Secured it[.] AM Came along side H.M. Cutter Liberty[.] Employed Securing the Main Yard to take her Mast out[.] Received 200 lbs Fresh Beef.
Wednesday Took the mast and bow sprit out of the Liberty Cutter Cygnet sailed	11th	SE [by] E ESE NNE East ESE	The 1st Part: Fresh Breezes and hazy[.] Middle[:] Light Breezes and Cloudy[.] Latter Part[:] Fresh Breezes and Squally Weather passing Showers of Rain[.] PM hoisted the Cutter's Mast and Bow sprit out. at 4 she Washed from alongside[.] Employed setting up the Lower and Topmast Rigging fore and Aft and Securing the Main yard to take Guns in. AM Received on Board 6 Nine Pounders they being part of the Ordinance Stores going to Turks Island[.] Employed getting ready for Sea[.] Sent One Man to the Hospital. Sailed out of Harbour H.M. Sloop Cygnet.
Thursday 6 Nine Pounders 2000 Shot 2 Field Carriages And Musquets [illegible] Samuel Barnett Pilot for Turks Islands [illegible]	12th	E [by] S N ESE	Regular Sea and land Breezes[.] PM Opened a Cask of Pork No. 662[.] Contents 120 [Double] Pieces[.] Received on Board 2000 Shot, 2 field Carriages, Musquets etc. AM Received on Board 160 lbs Fresh Beef[.] Employed getting ready for Sea[.] Came on Board Mr. Samuel Barnett Pilot for the Windward Passage and to conduct the Ship to Turks Island.

Friday William Miller and family The Lord Hood	13th	ESE N NNW SE ESE	Regular Sea and land Breezes[.] PM Employed getting ready for Sea[.] AM Received on Board 6 Nine Pounders and Carriages[.] Employed Stowing Ditto away on the Lower Deck[.] Answered the Signal for Weekly Accounts. Received Orders from Admiral Affleck to proceed with the Endymion to Turks Island and there to land the Ordinance Stores which was Received on Board for that Place and to Receive on Board Mr. William Miller and his Servant and give them a passage to Turks Island and also Orders to give no Offence to the Officers of Subjects of the Crown of Spain and to Suffer none that may be Offered, and also Received Orders from Admiral Affleck to bear twenty Supernumeraries of Wages and Victuals and to take under my Command any Merchant Ships that are bound through the Winward Passage as far as my Way lies. [Jon] Douglass Clerk

H	K	F	Courses	Winds	LW	Remarks etc. on Saturday 14th of August 1790
1				E [by] S		Strong sea Breezes and Cloudy
2						
3						
4						Ditto Weather
5				ESE		
6						Ditto Weather
7						
8				ENE		Moderate sea Breezes. Unmoored and hove into 1/3 of a Cable on the best bower.
9						
10						
11				NE		Light Breezes and cloudy.
12				N		Ditto Weather. The wind off the Land.
1						
2						
3						
4				Variable		Light airs and Cloudy. Got up the top gallant yards.
5				N		
6						At 6 made the signal for Assistance. The Diana boat came to assist us out.
7						At 7 weigh'd and came to sail.
8						At ½ past 8 got safe out thro' the South Channel.
9	3	4	SSE	East		The Diana boat left us. Strong sea Breezes. Handed the T.G. sails and in 2nd reefs T. Sails down jib and main top mast stay sail.
10	3					
11	4					
12	4					Fresh Breezes and Cloudy. A Brig in Comp'y.
				Latitude Observed by F.M.		Bearings and distance at Noon
				17°40' N		Portland Point W by N ½ N 7 or 8 leagues

H	K	F	Courses	Winds	LW	Remarks etc. on Sunday ye 15th of August 1790
1	5		SSE ½ E	E ½ N		Fresh Breezes and Cloudy.
2	5					Tacked ship to the Northward.

3	5		N ½ E	E [by] N ½ N		Sick List. 13
4	4	4				
5	4	4	N [by] E	E [by] N		Moderate and hazy.
6	4	4				Salt Pond Hill NNW about 3 leagues. ½ past 6 Tacked Ship to the Southward.
7	2/1	4	SE [by] S			
8	½	4				Set the top gallant sails.
9	3	4	SE	ENE		
10	3	4				
11	3	4				
12	3					Moderate and Cloudy with Lightning to Northward.
1	3	6	SE [by] E	NE [by] E		
2	3					
3	3	4	SE ½ E			
4	3					Ditto Weather.
5	4		SE ½ S	E [by] N ½ N		Squally — In T.C. Sails.
6	4		SE [by] S	E [by] N		
7	4					Moderate and Cloudy.
8	3	4				Ditto Weather. Tacked Ship to the Northward.
9	3	4	NNE	East		Set the top Gallant Sails.
10	3	6				
11	4	4				
12						Fresh Breezes and hazy.
				Latitude Observed		Bearings and distance at Noon.
				17°30' N		The Body of Morant Keys East 15 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Monday ye 16th August 1790
1	4	2	NNE	East	1	Fresh Breezes and hazy, handed the T.G. Sails.
2	3	6	N [by] E ½ E	E ½ N		Saw a Ship standing off to the Southward.
3	4					
4	4	4	NNE	East		Punished Laurence Duley Cooks mate with 12 lashes for Neglect of duty. At ½ past 4 in T.G. Sails and Tacked ship to the southward.
5	1/2	4	SE ½ S	E [by] N ½ N		
6	4					At 6 the White Horses bore NE¾N about 3 leagues.
7	3					Two Brigs in sight to leeward beating up.
8	3	4	SE [by] S	E [by] N		Sick List. 13.
9	3	4	SE ½ S			
10	4					
11	3		SE	ENE		
12	2					At 12 Tack'd Ship to the Northward.
1	3		NNE	East		
2	3					
3	3					
4	3	4				Fresh Breezes and hazy.

5	4	4				at 5 saw the Land. Moderate Breezes and hazy. A Brig in sight standing to the Southward. set T.G. Sails.
6	3					At ½ past 6 the White Horses bore NE [by] N and Yallahs Point W by N.
7	2/2		SE [by] E	ENE/NE [by] E	1½	
8	3	4	SE	ENE		Distance off shore about 1 ¼ mile — in ten fathoms water clear soft ground.
9	2	2			2	Tack'd and stood off. Moderate Breezes with a heavy swell.
10	3				1½	Shifted the Jib with a new one.
11	3	4	SE ½ S	E [by] N	1	
12	3				1	Tack'd ship to the Northward. Moderate Breezes and hazy.
Courses		Distance		Latitude Observed		Bearings and distance at Noon.
				17°37' N		The Blue Mountains N [by] W, offshore 7 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Tuesday ye 17th of August
1	5		N [by] E	E [by] N	½	Moderate Breezes and hazy with a large swell from the Southeast.
2	4					
3	4	4				
4	4					at 4 stood close into the back of the Reef that shelters Morant Bay and Tack'd Ship to the Southward. Saw 5 sail of Sloops and Schooners at Anchor in the Bay.
5						at 5 the Entrance of Port Morant bore NNE ¼ E about 3 or 4 miles. saw one ship at Anchor in the Harbour with her mast and yards struck. at ¼ past 5 Tack'd and stood in shore again.
6						at ½ past 6 tack'd and stood off the entrance of Port Morant. NE ½ N 2 mile and Carrion Crow hill N by E ½ E off shore about 1 ½ mile.
7	2	4	SE [by] E ½ E	NE ½ E	1	
8	3	2	ESE	NE		Moderate Breezes and Cloudy with a Swell from the Southeast.
9	3					Sick List. 12.
10	3	4				
11	3	4	SE [by] E ½ E	NE ½ E		
12	3					Ditto Weather.
1	2	4				
2	3	4	ESE	NE		at 2 Tack'd ship to the Northward.
3	3	6	N [by] W	NE [by] E		at 3 joined the Merchant Ship Lord Hood of London bound thither from Jamacia, directed her to follow the Endymion. Handed the T.G. sails.
4	3	6	N [by] W ½ W	NE ½ E		
5	3		N [by] W	NE [by] E		
6	4	4				½ past 6 Tack'd and stood off the Extreme point of the East End of Jamaica bore NE ¾ N about 3 mile.
7	1/1	4/	–/SE [by] E ½ E	–/NE ½ E		
8	2		SE [by] E	NE [by] E		Light Breezes and hazy.

9						at 9 up Courses and hove to. hoist out the Jolly boat and sent her on board the Lord Hood for the Master and delivered him, his sailing Instructions for his better Keeping Company. sent her on board again and hoist the boat in and made sail to the southward. with the Lord Hood in company.
10	Laying too up SE by E off SE by S					
11						
12						Moderate Breezes and hazy.
				Latitude		Bearings and distance at Noon.
				17°45' N		Carrion Crow Hill NW [by] N and the East End about North about 3 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Wednesday ye 18th of August 1790
1	2		SE	ENE	1	Light Breezes and Cloudy
2	2					at 2 Tack'd ship to the Northward.
3	3	4	N [by] E ½ E	E ½ N		Sick List. 14.
4	3					
5	2	4	N [by] E	E [by] N		at ½ past 5 saw a Ship windward coming down and hove too.
6	1/					at 6 the Extreme point of the East End of Jamaica bore NNW ¼ W 5 or 6 miles.
7			Up North off	NNW		at ½ past 7 spoke the above Ship proved the Jane of Liverpool out 6 weeks and 2 days from Africa bound to Kingston, no news — ditto — filled and stood on. The Lord Hood in Company.
8	2	4	NNW	NE		at 8 made the signal and Tack'd ship to the Southeast.
9	2		E [by] S	NE [by] N		
10	2					
11	2					
12	1	4				Light Breezes and Cloudy.
1	1		SE	ENE		
2	2					
3	1	4				
4	2		SE [by] E	NE [by] E		
5	3		NNE	East		Light Breezes and Cloudy, Made ye Signal and Tack'd Ship[.] at ½ past 5 the East End of Jamaica NW [by] W 5 or 6 miles.
6	3					
7	2	5				three large ships in sight in the WSW steering to the west.
8	2	4				Moderate and hazy. at 8 the East End SW [by] W and the Northeast End NW [by] W ½ W distance offshore 3 or 4 leagues.
9	3					
10	2	6	NE [by] N	E [by] S		
11	3					a Brig in sight to the Westward standing to ye Southward. at 11 the Extremes of the Land from SW [by] S to WNW distance offshore about 4 or 5 leagues.
12	2	6				Moderate Breezes and hazy. The Lord Hood in Company.
				Latitude Observed		Bearings and distance at Noon.
				18°16' N		The Extremes of the Land from SSW ½ W to WSW off Shore 6 or 7 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Thursday ye 19th August 1790
1	2		NE [by] N	E B S	1	Moderate Breezes and hazy [weather]. Sick List. 15.
2	2	4	NNE	East		
3	½	6/	North/ NE [by] N	–/E [by] S	–/1	
4	2	6	NE ½ E	SE [by] E ½ E		
5	2		N [by] E	S [by] N		Moderate Breezes and Cloudy, Made ye Signal and Tack'd.
6	1	4	SSE	East		
7			Calm – Ships head to the Southeast			
8	1		ESE	NE	1	Light airs and Cloudy.
9	1		E½S	NNE ½ E		
10	1	2				
11	1	6				
12	2		E [by] S ½ S	NE ½ N		Ditto Weather. handed the top gallant sails down jib and main top mast Stay sail.
1	2		SE	ENE		
2	2		SE [by] S	E [by] N		Squally with rain, thunder and Lightning.
3	2		SSE	East		at 3 fir'd one nine pounder. made ye Signal and Tack'd.
4	3	2	NE	ESE		Fresh Breezes and Squally with rain.
5	2	4				
6	2	4				Moderate. set the Jib and main top mast Stay sail.
7	2	4				
8	3					Moderate. Breezes and Dark Cloudy weather with the wind flying about from NE to SE up fore sail.
9	3					
10	3	6	NE [by] N	E [by] S		Ditto Weather — the Lord Hood in Company. No Observation.
11	½	4/	W [by] N/ N ½ W	–/ NE [by] E ½ E	–/1	very heavy dark cloudy unsettled weather.
12	4					saw the Land from the masthead Supposed to be about Cumberland Habour, or Occoa Bay on Cuba. bearing about N by W distance 10 or 12 leagues.
Courses from The East End of Jamaica			Distance	Latitude DR		Bearing and distance at Noon.
N43°E			66 miles	18°41' N		

H	K	F	Courses	Winds	LW	Remarks etc. on Friday ye 20th of August 1790 The Hurricane Month
1	3	4	N [by] W	NE [by] E	½	Moderate Breezes with rain and Dark cloudy unsettled weather. Made Sail ahead to make the Land plainer.
2	3	6				
3	3	4	North	ENE		Thunder and Lightning all round the Compass.

4	4		N [by] E	E [by] N		at 4 the Land of Cuba from N to NNW off shore 11 or 12 leagues. ½ past shortened sail and lay too for the Lord Hood up courses and in T.G.S.
5	1/		NNE	East		
6						Very Dark dismal weather with thunder and lightning in all quarters with frequent calms, and Gusts of Wind all round[.] bore down to the Lord Hood.
7	2		NW [by] N	Variable to the NE		
8	/1		/North	ENE	1	
9	1	4	NE	ESE		at 9 the Lord Hood bore W [by] N about ¾ of a mile.
10	Calm thunder all round — with very close claps of thunder and lightening and rain.					
11	3		NE [by] E	Variable all round		at ½ past 11 the wind sprang up in a squall at Southwest. handed the mizen T. Sail. In 3 reefs main and fore top sails and handed the main sail.
12	3			SW [by] W		at 12 the Lord Hood in the WSW 1 ½ mile.
1	3			NW		
2	Calm and Dark, Cloudy weather. Lost sight of the Lord Hood.					
3						
4	1		E [by] S	NE [by] N	1	Light airs and Cloudy weather. set the mizzen T. sail.
5	1		ESE			saw the Lord Hood bearing about South. bore down to her, outer 3rd reefs and set T.G. Sails, jib, and Stay sails and main Sail.
6	1		SSE	ENE		
7	1	4	S [by] E			
8	2		South	East		at 8 the Land in sight from N to NNW distance 10 or 11 leagues. made the signal to Lord Hood to make more sail.
9	1					½ past 9 made the Signal to Tack.
10	2					at 10 Tack'd Ship. Dry'd ye Small sails. Exercised the men at the Great Guns and small arms and fired.
11	3		N [by] E	E [by] N		
12	2	4				Light Breezes and clear. the Lord Hood in Company[.] the land of Cuba in sight Bearing from N ½ W to NNW. Off shore about 10 or 12 leagues.

Courses from Jamaica	Distance	Latitude observed	Longitude in	Bearing and distance at Noon.
N29°E	110 miles	19°16'N	74°59'W	The Land about Cumberland Harbour N ½ W 10 or 12 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Saturday 21st August 1790
1	2	4	N [by] E	E [by] N	½	Light Breezes and Clear weather. ½ past 1, lay too for ye Lord Hood. Sick List. 15.
2	/Laying too up N by E off N [by] W at 2 fill'd and stood on.					
3	2		N ½ E	ENE	½	
4	2					Ditto Weather. hove too for ye Lord Hood. ½ past fill'd and stood on.
5	1		North	ENE	1	
6	1	4	N [by] E	E [by] N		at 6 the Extremes of the Land from NE [by] N to NW [by] N. off Shore about 9 or 10 leagues.
7	1	4	N ½ E	E [by] N ½ N		
8	2	2				Light Breezes and hazy.

9	2	4			½	
10	2		NNW	NE		at 10 made the signal and Tack'd the ship.
11	2	4	ENE	North	1	
12	3		E [by] S	NE [by] N		Fresh Breezes and Clear. handed T.G. Sails[.] the Starboard main top sail sheet block strap broke — ditto cleared up the main top sails — brought another block too and set the sails again.
1	3		E [by] S ½ S	NE ½ N		
2	3					
3	2	4	E [by] S	NE [by] N		
4	2					
5	3		ESE	NE		Moderate Breezes and Clear. set the T.G. Sails.
6	3					
7	2	4	SE [by] S	E [by] N		½ past 7 made the signal to tack.
8	2		SSE	East		at 8 Tack'd ship. found the larboard main T.S. sheet block strap broke — got a stopper on ye clew of the sail and brought another block too.
9	2		N [by] E	E [by] N		
10	2		N	E [by] N		
11	2		N [by] E	E [by] N		Exercised the inexperienced men at the small Arms.
12	1	4				Light Breezes and hazy. the Lord Hood in Company. Employ'd making points and robins etc.

Courses	Distance	Latitude Observed	Longitude In.	Bearing and distance at Noon
N79°E	27 miles	19°21'N	74°33'W	Cape Nicholas N 65° E 25 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Sunday ye 22nd of August 1790
1	1	4	N [by] E	E [by] N	1	Light Breezes and hazy weather. Sick List. 16.
2	1	4	N ½ E	E [by] N ½ N		Employ'd making points etc.
3	2	6	N ½ W	N [by] E ½ E		
4	3	2	North	East		Moderate Breezes and hazy.
5	4		N ½ E	E [by] N ½ N	½	Fresh Breezes and hazy weather. handed the T.G. sails.
6	5		NW [by] N			at 6 the Extremes of the Land Supposed about Cumberland Harbour, or Occoa Bay — bearing from North to NNW distance off shore about 5 or 6 leagues. down Jib etc.
7	3	4	North	ENE	1	
8	4					at 8 made the signal and Tack'd ship. Fresh Breezes and Cloudy.
9	2	6	SE [by] E ½ E	NE ½ E	1 ½	shortened and made sail Occasionally for the Convoy.
10	3	4				
11	2					
12	2	2	ESE	NE		Fresh Breezes and Cloudy.
1	3					Set the main Sail.
2	4				1	
3	3				1 ½	
4	1	4				at 4 made the signal and Tack'd Ship.
5	1		NE [by] E	SE [by] E	1	Light Breezes and hazy. set the Jib.

6	1					set the top gallant sails and main top mast [illegible].
7	1	4	NE	ESE		
8	2		NE [by] N	E [by] S		
9	2	4	NNE ½ E	E ½ S		Read the Articles of War etc. to the Ships Company.
10	2	4				
11	2	6	NNE	East		
12	2		N [by] E ½ E	E ½ N		the Land about Cumberland Harbour N by W ½ W distance about 8 or 9 leagues. Lord Hood in Company.
Courses			Distance	Latitude Observed	Longitude	Bearings and distance at Noon.
N69°E			26 miles	19°30'N	74°09'W	

H	K	F	Courses	Winds	LW	Remarks etc. on Monday ye 23rd of August.
1	1	6	N [by] E	E [by] N	1	Light Breezes and hazy.
2	1	4				Sick List 16.
3	2	4	N ½ W	NE [by] E ½ E		
4	2					Ditto Weather.
5	3					
6	3	4	North	ENE		at 6 the Land in sight from NE [by] N to NW [by] N offshore about 4 leagues.
7	4	4	N ½ W	NE [by] E ½ E	½	
8	4		North	ENE		at 8 Moderate Breezes and hazy. made ye signal and Tack'd Ship and lay to for the Lord Hood.
9	Laying too [illegible] SE [by] E off SE					at 9 filled and set the main sail.
10	4		ESE	NE	¾	
11	3					
12	4		E [by] S	NE [by] N		Ditto Weather. Lord Hood in Company.
1	3	4	East	NNE		
2	3					
3	2		E [by] S	NE [by] N	1	
4	1		ESE	NE		at 4 made the signal and Tack'd the Ship.
5	Laying too up ENE off NE			SE		at 5 made the signal to the Lord Hood to prepare to take on board an End of a Hawser.
6						
7						at 7 got the Hawser on board[.] filled and made sail with the Lord Hood in tow. out 2nd reef. set T.G. Sails and Small Stay sails etc.
8	2	4	NE [by] E	SE		Light Breezes and clear.
9	2			Variable		
10	1			NW		hoist out the jolly boat and try'd the Current, found it to set NNE one mile [per] Hour.
11	1	4				
12	1	4				at Noon light airs and Clear. The High Land of Grand Ance S [by] E ½ E and the Land about the Platform NE [by] E and the Land of Cuba N [by] W ½ W.
Courses		Distance	Latitude Observed	Longitude		Bearings and distance at Noon.

		19°30'N		High Land of Grand Ance S by E ½ E distance off shore about 16 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Tuesday ye 24th of August 1790
1						Calm and hazy. Signalled for the Lord Hood to cast off the Hawser.
2						
3						
4						at 4 the Land of Cuba NNW — the High Land of Grand Ance S [by] E — and the Land about the Platform NE ½ E —
5						
6						
7						
8						at 8 the wind sprang up to the Northward —
9	3	4	E [by] N ½ N	North		Moderate Breezes and cloudy.
10	3	4				
11	3	4				
12	3	4				Ditto Weather. handed T.G. Sails down jib and Stay sails.
1	2	4	E ½ N	N [by] E ½ E		
2	3		SE [by] E	NE [by] E		at ½ past 2 made the signal and Tack'd.
3	1/1	4/	SE/NNE	ENE/East		
4	3	4	NE [by] N	ESE		Light Breezes and clear. the Land about the Platform on Hispaniola NE [by] E about 5 or 6 leagues.
5						
6						Set top gallant sails etc.
7						Moderate Breezes and hazy. took the Lord Hood in Tow.
8				SW		at 8 the Platform SE [by] E and the Entrance of Nichola Mole ENE. off shore about 2 or 3 leagues.
9				Variable to the south		
10						Several sail in Company, both French and Americans.
11						
12				SSW		Moderate Breezes and hazy. the Lord Hood in Tow. Spoke a Ship from Port Au Prince bound to Nantes and another ship from the same place bound to Virginia.

Courses	Distance	Latitude Observed	Longitude	Bearings and distance at Noon.
				Cape Nicola Mole S [by] E 3 or 4 miles. Isle Tortugas NE [by] E ¼ E 8 or 9 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Wednesday ye 25th of August 1790
1						Moderate Breezes and Cloudy. the Lord Hood in Tow.
2						Light Breezes and Variable sometimes Calm. Tack'd ship.
3						at 3 Tack'd Ship — the Lord Hood in tow. Tack'd Occasionally.
4						at 4 the West End of Tortudas NE [by] E ¾ E and the Mole point on the Table Land SSW offshore 3 or 4 miles.
5						at 5 Tack'd Ship to the Northeast.

6						at 6 Tortudas ENE about 9 leagues. ½ past made the signal to the Lord Hood to cast off the Hawser.
7	2		NE [by] N	E [by] S		
8	1	6	NE ½ N			Light Breezes and Cloudy – in 2nd reefs T. sails.
9	2		NE [by] N			at 9 spoke the Lord Hood and directed the master to make the best of his way thro' the Passages. ditto parted Company.
10	3					
11	1	4	NNE	East		Lord Hood Parted. Sick List. 15.
12	1	3	N [by] E ½ E	E ½ N		Light airs and Cloudy. Tortudas E [by] S 5 or 6 leagues. the Lord Hood in sight in the SW about 2 miles.
1	1	4	NNE	East		
2	1/1	4	NE [by] E	SE [by] E		
3	2					
4	1	4				Ditto Weather. out 2nd reefs T. Sails and set the small stay sails.
5	1	4				
6	1	4	NE	ESE		
7	1	4				Stay'd the mizen mast and set up the mizen rigging.
8	1	4				Light Breezes and hazy. the West End of Tortudaa SE [by] S 3 or 4 leagues. the Lord Hood in sight in the SW about 3 miles. Carpenters Employ'd repairing the Boats and making a new Rim to the wheel.
9	1					
10	1	6				
11	2		NNE	East		
12	2		N [by] E	S [by] N		the Lord Hood in sight bearing WSW about 3 miles.

Courses	Distance	Latitude Observed	Longitude	Bearings and distance at Noon.
		20°29'N		The East End of the Island of Tortudas SE [by] E at 7 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Thursday ye 26th of August 1790
1						Light Breezes and Cloudy. Sick List. 14.
2						
3						
4						at 4 the Extremes of Tortudas from S [by] W to SE [by] S offshore about 5 leagues.
5	5	6	ESE	NE		
6	5	6	SE [by] E	NE [by] E		at 6 last sight of the Lord Hood in the NW.
7	4	4	SE ½ E			Fresh Breezes and hazy weather. In T.G. Sails and small stay sails.
8	4/1	4/	SE [by] S	E [by] N		¼ before 8 the East End of Tortudas SSE ¼ E about 3 miles. Tack'd ship to the North.
9	4	6	N [by] E		½	
10	5					Down jib and main top mast Stay sail.
11	4	2				
12	5		N [by] E ½ E	East ½ N		Ditto Weather. the starboard mizzen top sail sheet block gave way.
1	3	4	NE [by] N	E [by] S		ditto clear'd up the sail — brought another too and set the sail again.
2	3	4	NE ½ N	E [by] S ½ S		

3	3	2				
4	3	4			¾	Moderate Breezes and hazy.
5	3	4	NE	ESE		set the Jib.
6	3	6				
7	3	6	NE ½ N	E [by] S ½ S		
8	3	2				
9	3	6	NE [by] N	E [by] S	1	set the T.G. sails. Carpenters Employ'd repairing the rim of the Wheel it being decay'd.
10	4	4				
11	4	6				Handed T.G. sails — squally.
12	4					set T.G. sails. Moderate Breezes and hazy weather. find by the Observation that the Current has set the Ship northward.

Courses from Tortudas	Distance	Latitude observed	Longitude	Bearings and distance at Noon.
N24°E	78 miles	21°16'N	72°08'W	Sandy Key on ye Cay Cos Bank N80E distance 10 miles. Key on the same bank N 19 E distance 10 miles.

H	K	F	Courses	Winds	LW	Remarks etc. on Friday ye 27th of August 1790
1	4		NE ½ N	E [by] S ½ S	¾1	Fresh Breezes and Cloudy weather. at 1 Tack'd Ship. S. List. 15.
2	3		SE [by] S	E [by] N		
3	4					
4	4		SE ½ S	E [by] N ½ N		Ditto Weather. lost the log and four lines.
5	5		SE ½ E	NE by E ½ E		
6	5		SE [by E	NE [by] E		Ditto Weather. Landed the top gallant sails and down jib.
7	4	2	SE ½ E			
8	4	4	SE	ENE		Ditto Weather.
9	3	6				
10	3	6	SE ½ S	E [by] N ½ N		
11	3	4				
12	3	6				Ditto Weather.
1	3	4				
2	3	4	SE [by] S	E [by] N		
3	4		SSE ½ E			
4	4	4	SE [by] S			Ditto Weather.
5	5					
6	4	4				at 6 saw the Land of Monta Christa SE ½ S about 8 or 9 leagues.
7	5	3		ENE		at the T.G. Sails and jib.
8	5	4				at [8] Fresh Breezes and hazy. Standing in for the Land.
9	5	4				
10	6	4	SE	NE		at 40 minutes past 10 Tack'd Ship in 9 ½ fathom water good Clear Ground. the top of the Grange or Monta Christa bore East and the outer point E ½ N and the Town of Monta Christa SE ½ E, and one of the Keys of the seven Brothers W

						[by] S. distance off from the Monta about 1 mile and from the town about 2 miles.
11	4/2		ESE	Handed T.G. sails		
12	4		N ½ E	E [by] N		Strong Breezes. in 2nd reef T. Sails and down Jib.
Courses		Distance	Latitude Observed			Bearings and distance at Noon.
			20°08'N 20°03'N			The Grange SE [by] S 7 miles. And the High Land over Isabella Bay E [by] S ½ S distance about 11 or 12 leagues.

H	K	F	Courses	Winds	LW	Remarks etc. on Saturday 28th of August 1790
1	5		N ½ E	E [by] N ½ N	½	Strong Breezes and hazy weather. Pass'd a Small sloop steering to the westward. Tack'd Ship.
2	5					at 2 Monta Christa bore SSE. distance 15 or 16 miles.
3	4		SE ½ E	NE [by] E ½ E		
4	3	4				
5	4		SE [by] E	NE [by] E	¾	
6	5					at 6 the Body of the Grange or Monta Christa SW ½ S 4 or 5 miles. ditto Tack'd the Ship to the Northward.
7	4		N [by] E	E [by] N	1	at 7 Monta Christa SSW. about 7 or 8 miles.
8	4	4	N [by] E ½ E	E ½ N	½	
9	4	2	NNE	East		Moderate Breezes and Cloudy — set the jib.
10	5		N [by] E ½ E			
11	5	2				
12	5				¼	Fresh Breezes and Cloudy. Haul'd down the jib.
1	4	4				
2	4	4		E [by] S		
3	5	4				½ past 3 up Courses to shorten sail for the Land.
4	5	2				
5	4	4				at 5 made sail again. and set T.G. sails etc.
6	5					½ past 6 saw Sand Key from the mast head, bearing NNE ½ E about 4 or 5 leagues. out 2nd reefs T. Sails.
7	5	2	NNE			at ½ past 7 saw Sand Key from the Deck, distance about 10 or 11 mile.
8	5	2				at 8 came upon the soundings — 7 ½ fathom water, and in 5 or 6 minutes afterwards the Ship Struck the Ground, still 7 ¼ fathom in the Chains. The Pilot stated there was no Danger — nor any Shoal to bring a Ship up.
9						
10						
11						
12						
Courses		Distance	Latitude Observed			
Sand Key NE [by] N ¼ N or NNE ¾ East 7 or 8 miles						

Depth of Water where the Ship lay.
under the Starboard main Chains 6 ¾ fathom
under the Starboard mizzen Chains 3 fathom
under the Starboard fore Chains 4 fathom
under the [Taffrail] 5 fathom
under the Counter 4 ¼ fathom
Larboard fore Chains 2 fathom on a Rock
Larboard main Chains 6 ½ fathom
Larboard mizzen Chains 2 ¾ fathom on a Rock
Salt Key seen from the mast Head NNE

Remarks etc. on Board His Majestys Ship Endymion Saturday 28th August 1790

At 8 AM, was Informed by the Master that there was 7½ fathom water, and in 5 minutes after, the Ship Struck; attempted to keep the Ship too, but she fell off in Consequence of the Eregularity of the Ground; there being 7½ fathom water under the Main Chains when the Ship Struck, and 2 fathom under the larboard fore Chains, and 3 fathom under the mizzen Chains and ¼ 4 under the Counter, hove all the Sails aback but found it useless, hoist out the Jolly Boat and sent the Master to Sound round the Ship, found the Ship surrounded with high Ridges of Rocks from 2 fathom to 8 or 9, Clewed up the Sails and hoist out all the Boats carried out the Stream Anchor to the ESE in 9 fathom water, found the Ship hung by the larboard Bow and Starboard Quarter, and struck very heavy, and that she had made 2 feet water[.] Rigged all the Pumps and worked them but found the Ship gained very fast upon the Pumps, hove a Strain on the Stream Cable but found we Cou'd not move the Ship, and she Continuing to strike very heavy, and the water gaining fast in the hold Insomuch that at 9 O Clock there was five feet water[,] handed all the sails and Try'd again to Start the Ship, but proved Inefectual, at 10 Saw a Sail to the Northward. Called a Counsel of all the Officers who gave it as their General Opinion that if the Ship cou'd be hove off she wou'd go down at her Anchors and that the Most advisable Method wou'd be to cut away the Main and Mizzen Mast in Order to Ease the Ship as it appeared Impossible to free her of water ditto. Cut away the Main and Mizen Mast and Cleared the Wreck at this Time 7 feet water in the Hold the Coal Hole and Magazine overflowed Broke the People off from the Pumps and began to preserve some part of the Provisions, at Noon the water nearly up to the Orlop Deck. Fresh Breezes and hazy weather. ESE.

Bearing and distance at Noon

Sand Key bearing NE [by] N ¼ N Distance 5 or 6 Mile. Salt Key as seen from the Mast head bearing NNE.

Remarks on Board His Majesties Ship Endymion Sunday 29th August 1790

Fresh Breezes and Clear PM Employed Preserving as much as Possible of the Provisions etc. at 2 was Joined by the Schooner New Hope[,] James Smart[,] Master[,] from Philadelphia and bound to Kingston who Informed me of his Surprise at the Ship being on Shore, not Knowing of any Shoal or Reef in that direction and Distance from Sand Key[.] at 3 Sent the Master off in one of our Boats to Turks Islands to give them Information of our Situation and for Assistance. ditto: began to get the new sails and part of the Best Stores to hand in order to put them on board the Schooner New Hope, the Master of which promised to continue by the Wreck to save the People and Stores if Practicable. ditto: sent some Stores and People on board the New Hope in the Cutter; the boat returned and the Sea running so high and the Ship labouring so much was Impossible to send any more at this Time. got the foresail and foretopsail[,] Jib[,] and foretopmast Staysail, Middle and Top Gallant Staysail unbent and made up[.] Endeavoured to Clear the wreck of the Main and Mizen riging from the Ship but cou'd not by reason of the Rigging having Caught the Rocks Where by the Boats got stove with the Wreck. at ¼ past 10 the Ship became so very laboursome and Struck so hard as rendered it necessary to Cut away the Foremast, — got the Jib Boom in and Cut away the Spritsail yard[.] at ½ past 10 Observed the ship Began to separate/break at the Break of the Forecastle deck. ditto: Cut away the two Bower Anchors to save her Bows[.] at ¼ before 11 found the Ship was going downforward: got all hands aft in the Poop and fired all the Remaining loaded Guns Signal to the New Hope[.] in 5 Minutes after the Ship was Intirely under water forward with the Bowsprit End just out of the water with her Stern Considerable up[.] Continued to send the Men on board the New Hope expecting the Ship to part every Minute: at 5 am the Cutter and launch Returned from the New Hope, sent them away with more Men[.] at 7 they Returned with Information that the New Hope cou'd take no more, the Ship under water as far as the Main Mast without a Possibility of saving anything more than what has been got up on the Quarter

Deck and Poop. at 7 Observed a Schooner coming down to us[.] at 8 spoke her proved the Twins Who also gave us Information that they Knew Nothing of the Reef on which the Ship lay but that they had come down to assist us; Punished [George] Campbell with 24 lashes for disobedience of Orders[.] sent Part of the small Arms etc. on Board the New Hope[.] at Noon the Master Returned. Fresh Breezes and hazey. the wind at ESE. George Campbell punished.

Remarks etc. on Board H. M. Ship Endymion Monday 30th August 1790

Fresh Breezes and hazey[.] Employed Getting the Bread on Board the Schooner Twins, several Small Boats in Sight Coming down. The Sea making a fair Breach over the Ship as far as the Capstern, Twins parted her Cable being Cut by the Rocks and drove to Sea[.] was under the Necessity putting what few Stores we had Saved on the Quarter Deck and on Board some small Boats that came down from Turks Island[.] at 5 a Mr. James Deane came on Board and Tendered his Services to recover what part of the Ship and Stores, etc. that might be possible to save when the Weather became favourable with whom I agreed that whatever was saved after I quit the Ship and safely delivered etc. a proportionale should belong to him. Employed getting the Small Arms on Board the New Hope and sent her off with the Ships Crew to Turks Island[.] at 6 found it useless to stay any longer by the Ship[.] hauled down the Coulers and myself and Officers quit the Ship then lying over End with her head in 7½ fathoms of water and her Stern in 8 feet, and went on board the Twins Schooner that had lost her Anchors and was beating up again, Moderate and hazey — at East. [Tacked] Occasionally[.] at 1 AM the Jolly Boat sunk astern of the Schooner, hoist her and the other Jolly Boat in, the Launch and Cutter sent with the New Hope Schooner. AM Moderate and Clear the Extremes of the Grand Key from East, to NE ¼ N 2¼ leagues — the Caycos W [by] N ½ N 4 or 5 leagues. Moderate Breezes and Clear at Noon the Body of the Grand Turk NNE and Cotton Key E [by] N 3 or 4 Mile. got up some of the Bread to dry that got wet on Board. —

Remarks etc. Tuesday 31st of August 1790

Fresh Breezes and Clear[.] PM Employed Beating up to the Grand Key[.] at 6 hoist out the Jolly Boat and quit the Twins to Join the Ships Crew in the New Hope lying at Anchor off the Town at the Grand Key[.] at 10 got on board the New Hope[.] at 9 am sent the Master down to the Wreck to Examine her and to sound round the Shoal[.] Employed getting the Sails on Shore and drying them and Erecting a Tent for the sick[.] at Noon Fresh Breeze with a Heavy Shower of Rain.

Bearings etc. at Noon

On Shore at the Grand Key Turks Island.

Week Days	Month Days	Winds	Remarks etc. Grand Key Turks Island
September Wednesday	1790 1st	Easterly	Fresh Breezes and Cloudy[.] PM the People Employed Clearing a house to Live in, and getting Part of what Sails etc. was brought up — on Shore and drying them[.] at 8 Sent [Messenger] Hope Master Mate and 30 Men down to Jamaica in the New Hope Schooner. Watched and Stationed the Officers and Men and planted Centinels at the Necessary Places to keep the People together and to preserve ye Stores[.] at 10 AM the Master returned from the Wreck, Purchased of Mr. Rob Wilson 63 Gallons of Rum at One Dollar Per Gallon. Employed Searching for Water but can find none fit to Drink, at Noon Fresh Breezes and Clear. —
Thursday William Torkinton [Jon] Bond Henry Watson	2nd	Easterly	Fresh Breezes and Clear[.] Employed fitting the launch to go down to the Wreck, and searching about for Water. at 10 AM sent the Master and the Carpenter and 12 Men with the launch down to the Wreck to see if it were Practicable to get any of the Guns out or anything else, if not to get the launch and Grapnel and Rope, that lay under the Stern, and the Anchors belonging to the Schooner Twins that she lost in assisting the Ship, and for which Payment is to be made. Employed getting dryed bushes etc. into

			the Sick Tent, Punished William Torkinton, [Jon] Bond and Henry Watson, The 1st with Two Dozen lashes and the Two latter with One Dozen each. Arrived here the Brig Bermuda from Jamaica, out 19 Days. —
Friday Joshuah Hancock Joshuah Wilson Ronald Harden	3rd	Easterly	Fresh Breezes sometimes Clear and sometimes Cloudy[.] PM Punished Joshuah Hancock seaman with 12 lashes for disobedience of Orders[.] Employed fetching water, AM Read the Articles of War to the Ships Company and Punished Joshuah Wilson Quarter Master and Ronald Harden Seaman with 12 lashes each for disobedience of order.
Saturday	4th	From ENE To ESE	Ditto Weather[.] PM. Sent the Jolly boat down to Salt Key for fresh Beef[.] AM Employed fetching of fresh Water etc. otherways as Necessary. Sick list 7 Number Received 248 lbs fresh Beef.
Sunday	5th	Easterly	Fresh Breezes and Squally at Times[.] latter Part: some Rain. PM Arrived an American Schooner from Cape Francois[.] ditto sailed for Salt Key, Employed as needful and fetching water[.] Performed Divine Service[.] Arrived an American Brig from Rhode Island. Sick list 6.
Monday X sound which is 3 ½ fathom	6th	ESE	The 1st and Middle Parts: Moderate with hot Sultry Weather[.] Latter Part: Squally with Rain[.] at 2 PM the Master returned with the launch from the Ship and brought one Nine Pound and its Carriage being all of ~~the Guns~~ that cou'd be saved together [with] the Poop Lantern but cou'd not get the Schooners Anchor or the Grapnel. AM Got the Gun on Shore and mounted it in the fort[.] sent the Boatswain with the Jolly Boat in search of fresh water[.] got out the Sails to Air[.] Attended my self in sounding the Road[.] found one Rock [with] only 8 feet 6 inches of water on it.
Tuesday	7th	Easterly	The 1st Part: Moderate and hazey[.] at 3 PM the Boatswain Returned without any Water[.] arrived here an American Brigantine from Cape Francois[.] Middle Part[:] Heavy Rain[.] latter Part[:] Moderate Breezes and hot Sultry Weather. AM Sent the Boatswain off again with the boat in search of water[.] at noon he returned with three Small Casks of water but not very Good[.] Exercised some of the Men at Small Arms[.] Employed getting the Bread[,] strewed on some sails to Dry and Air it [illegible]. Sick list 7.
Wednesday	8th	Easterly	Fresh Breezes and Cloudy[.] PM arrived here a Sloop from Newfoundland bound to Jamaica and sailed hence a Brig for America[.] AM Employed wooding and watering. The Brig that sailed last Evening set off [for] Salt Cay, supposed to be carrying on Contraband Trade. at the request of the Agent and Collectors of the Customs sent three Men Armed to assist in detecting her, Sailed the Brig Bermudas for Bermudas, Purchased 312 Gallons of water to go with the Draft of Men in the Sloop Dulcissa.
Thursday	9th	Easterly	Fresh Breezes and Cloudy[.] PM Received 348 Pounds of Fresh Beef[.] Sent the Acting Lieutenant Mr. Brown and 20 Seamen down to Jamaica in the Sloop Dulcissa from Newfoundland and Bound to Kingston. Sent 2 Bags of Bread and 80 pounds Fresh Beef with the Sloop[.] at 4 PM the Sloop Sailed. Received some part of the Rigging from the wreck of the Mast, all in Short pieces together with the Mizen Topsail and Main Top Gallant Sail by One of the Sloops belonging to Mr. Deane one of the Vessels Employed about the wreck[.] AM got the above Sails dryed[.]

			Employed otherways[,] wooding and watering, arrived here a Sloop and Schooner both from Cape Francois[.] the Sloop brings ye news of a declaration of War between the Courts of Great Britain and Spain. [Sick] List 4.
Friday	10th	Easterly	Ditto Weather with Lightning in the SW[.] PM Employed drying the Bread etc. AM Wooding and Watering[.] Sailed a Schooner for Salt Key.
Saturday	11th	Easterly	The 1st and latter Part: Fresh Breezes and Cloudy[.] Middle[:] Very Dark Cloudy Weather with Thunder and lightning all round the Compass[.] PM Employed as necessary and getting a Boat ready to go down to survey the Shoal on which the Ship was Wreck'd[.] at 6 AM myself and the Carpenter went down. Employed watering, Arrived one of the Schooners that was down at the Wreck with part of the Rigging from the Wreck of the Mast.
Sunday	12th	NE East	Fresh Breezes and Cloudy[.] Employed getting the Stores on Shore from ~~the~~ Mr. Deans Schooner. at 6 PM Retrieved from the Wreck after having examined and Sounded as much as the Weather wou'd Permit[.] Observed that the Ship was broke off in Midships and from appearance suppose that the fore Part of the Ships Bottom had separated from her upper Works as her head Rose and Canted athwart the after Body which lay directly on the Beam Ends with only the Starboard Ditto Gallery and Poop Rail out of water[.] the Poop and Ditto Deck was then Parting as under and it was impossible to get hold of the Wreck on account of the Sea running so high the buoy was still Remaining on the Stream Anchor.
Monday	13th	Easterly	The 1st and Middle Part[:] Fresh Breezes and Cloudy with Lightning[.] The latter Part[:] Moderate Breezes and very hot Sultry Weather[.] PM Employed drying the Sails that was brought up by Mr. Deans Schooner[.] AM removed the Sick into the House with the other Men and Struck the Sick Tent[.] Received 176 lbs Fresh Beef. [Sick] List 9.
Tuesday	14th	Easterly	Moderate Breezes and hot Sultry Weather[.] Employed wooding and watering[.] made a Tent for the Sick near where the People remain for them to go into by day. [Sick List] 10.
Wednesday	15th	ESE SE SSE	Fresh Breezes and Squally[.] PM Employed as necessary[.] AM Received by the Sloop Whitney Master 1 Fore Top Sail and 1 Main Stay Sail much cut by the rocks, 1 length of junk 17 ½ and one ditto of 11 ½ about 4 fathom in length each and some few Pieces of Old Rope[.] Employed washing and scrubbing the Sails. [Sick] List 10.
Thursday	16th	SE	Ditto Weather and Cloudy[.] Employed wooding and watering etc. Sick List 8.
Friday	17th	ESE SE	Moderate and hazey[.] PM was brought up from the Wreck by Mr. Joell a Cask of Vinegar and a Piece of lead off from the Top of the Starboard Quarter Gallery and about fathom of 6 Inch off Cable of Hawser[.] Received 172 lbs of Fresh Beef[.] Sick List 7.
Saturday	18th	Ditto	Ditto Weather. PM Received from the Wreck by Mr. Joell, part of a Cask of Damaged Flour, some length of one of the Bower Cables, and some other pieces of Rope, and the Mizen Main sail much Cut by the Rocks etc. AM Received by Mr. Gilbertus Frith, one Nun Buoys, Part of a Cask of Oatmeal, and some short Pieces of Rope; Employed drying the Mainsail, gave 1/3 part of the Vinegar, flour, and Oatmeal to the different People who saved

			them, and preserve the remainder for the Ships Company, Employed wooding and watering[.] Purchased 64 Gallons of Rum of Robert Wilson Esquire, 1 Dollar [per] Gallon. was Informed by the above people from the wreck, that the after part of the Ship is Intirely drove away and no part at all seen above the water — [Sick] List 7.
Sunday	19th	ESE SE ESE	Ditto Weather[.] PM got the Mainsail and other Stores into the Store House[.] AM Wooding and Watering[.] Arrived a Brig from New London and America with some live Stock on board[.] hauled the two Jolly Boats up high on the Beach out of the Way of the Impending Surf. [Sick] List 5.
Monday Sloop Batchelor	20th	ESE	Moderate and Cloudy with some small Rain[.] PM Employed Occasionally[.] AM wooding and watering[.] at noon arrived here the Sloop Batchlor from Jamaica[.] received Orders from Admiral Affleck to proceed with the Remainder of the Officers and Ships Crew in the Said Sloop to Jamaica with such part of the Stores as was saved and cou'd be conveniently carried with directions to leave the remainder in the Charge of His Majesty's Agent here etc.
Tuesday	21st	–	Ditto Weather. PM Employed Getting such parts of the Stores etc. on board of the Sloop Batchlor as she would carry. AM delivered into the Charge of the Honorable Alexander Murray and Robert Wilson Esquire all the Remains of stores etc. that cou'd not be taken off together with the Small Arms and all the Ammunition that was saved. Drew a bill of Exchange on the Navy Board for One Hundred Pound Sterling at 30 days sight and discharged such of the Expenses as cou'd be at this time settled, that is to say Robert Wilson Esquire for Rum etc. 49 [pounds 10 shilling 8 pence]. To Mr. James Dean [illegible] for fresh beef 25 [pounds 18 shillings 4 pence]. To Mr. Joshua Gibson for Boat hire 1 [pound]. To Mr. Manuel for Boat hire 13/4. To Mr. In. Cooper for water 4 [pounds 15 shillings 8 pence]. To Mr. Smith for necessities for the Sick 13/4. Employed Embarking the People and getting the Officers Baggage etc. on Board; left the launch of 26 feet and 2 Jolly Boats one of 18 and one of 16 feet with their Oars etc. in the Charge of the Honorable Mr. Murray and Robert Wilson Esquire. Tuesday 21st September 1790.

Week Days	**Month Days**	**Winds**	**Remarks etc. on Board H.M. Ship Centurion Port Royal Harbour Jamaica.**
Monday	27th	SE [by] E Variable Southerly	Moderate Sea Breezes, on my Arrival immediately proceeded on board the Flag ship by Order of the Commander in Chief with part of my ships Crew. the remainder were distributed through the different ship in the Squadron. AM the launch Employed Watering. sail'd hence his Majesty's Cutter Advice Lieutenant Wray Commander Ships Company[.] Employed as Necessary. My self and Clerk completing the Ships books etc.
Tuesday	28th	SE [by] E Variable ESE	Moderate Sea Breezes during the day And Land breezes at night. AM the Launch Employed watering. ditto washed the lower deck etc. Punished [Jon] Hammilton and William Wisen craftsmen, Seaman, with 12 lashes for Drunkeness and quarreling. myself and Clerk Employed about the Ships books.
Wednesday	29th	SE [by] E SSE	Ditto Weather. Ships Company as before. my self and Clerk about [illegible] books.

Thursday	30th	SE [by] E Variable SE [by] E	Moderate sea and land Breezes. AM Wash'd the lower Deck and Employed as Necessary[.] Received Provisions. My Self and Clerk as before.
October Friday	1st	SE [by] E Southerly SE [by] E	Ditto Weather. Received fire wood[.] people Employed as Necessary. My Self and Clerk as before. Made application by letter to the Admiral for a Court Martial on myself etc. touching my conduct as to the loss of His Majesty's Ship Endymion then under my Command.
Saturday	2nd	Ditto	Ditto Weather. Received onboard fire wood. people Employed as Necessary. myself and Clerk about the Ships books.
Sunday	3rd	Ditto	Ditto Weather. AM Mustered the Ships Company and Cloathing Chaplain performed Divine Service, Read the Articles of War etc. etc. Received fresh beef.
Monday	4th	SE [by] E	Strong sea breezes with rain in the Night[.] Employed as Necessary.
Tuesday	5th	Ditto SE	Moderate Sea breezes, with Squalls and rain at times. Received on board Wood and fresh beef[.] Employed as necessary.
Wednesday HMS Blonde Captain Affleck	6th	SE Variable SE [by] E	Regular Land and Sea Breezes, at 8 AM the Blonde made the Signal for a Court Martial. answered ditto. ½ past 8 repair'd on board the Blonde as [per] Signal to take my Trial for the Loss of His Majesty's Ship Endymion together with Pilot and Officers and Crew of the said Ship. at half past 11 I was acquitted by the Sentence of the Court. as was Mr. Samuel Barnett the Pilot. the Officers and Crew: ditto[.] the Signal was haul'd down. repair'd again on board the Centurion. Employed as necessary. compleated the Endymion's Books etc.
Thursday	7th	SE [by] E	Moderate sea Breezes and fair weather. AM wash'd the lower deck etc. Employed watering and as necessary. was advised by Admiral Affleck to take the earliest Opportunity to go home to England as there were none of His Majesty's then expected to go home.
Friday	8th	Ditto	Moderate sea and land breezes. Received wood[.] Employed watering and working of Junk. was inform'd of the Ship Eliza, at Kingston and bound to Bristol, that she would sail in a few days. received the Admirals permission to proceed in her.
Saturday	9th	SE [by] E Variable SE	Moderate sea and land breezes, with frequent showers of heavy rain. The launch employ'd watering. AM discharged twelve of the late Endymions crew into his Majesty's brig Liberty. Received on board wood.
Sunday	10th	SE [by] E Variable ESE	Ditto Weather. AM Mustered the Ships Company and their cloaths etc. — Received Fresh breef. Was discharged out of the Centurion, and with the Boatswain, Gunner and Carpenter late of the Endymion, the two masters mates and three of the Midshipmen. Embark'd on board the Merchant Ship Eliza. William [Engledue] Master bound to Bristol.
			Lieutenant Woodrift Mr. [W. D.W. and Jon W.] Mr. Robert Brown } masters mates Mr. Hope } Mr. [illegible] – midshipman Mr. Messer – the Boatswain Mr. Innis – the Carpenter Mr. Roper – the Gunner Mr. – [midshipman] Mr. – [midshipman] 2 Officers of the Royal Artillery – Woodward and Lemoin

Appendix 3

The following presents the transcription by the author of the court martial of Daneil Woodriff over the loss of *Endymion* (National Archives in Kew ADM 1/5328).

Author's notes:

[1] Discrepancies and inaccuracies may arise throughout due to difficulty in deciphering handwriting.

[2] The below transcription keeps with the grammar and spelling of the original document as much as possible, with the exception of short-hand written out fully to avoid confusion.

At a Court Martial assembled and held on board his Majesty's Ship the Blonde in Port Royal Harbour Jamaica the 6th of October 1790.

Present

William Affleck Esquire Commander of his Majesty's Ship Blonde and senior Captain of his Majesty's Ships and vessels at Jamaica,
President;

Captains — Thomas Macnamara Rupell, William Albany Otway, Davidge Gould, & George Burdon

The Court pursuant to an Order from Philip Affleck Esquire Rear Admiral of the Blue and Commander in Chief of his Majesty's Ships and vessels at and about Jamaica etc. bearing Date the 3rd Instructed and directed to William Affleck Esquire Commander of his Majesty's Ship Blonde and senior Captain of his Majesty's Ships and vessels at Jamaica, proceeded to try Lieutenant Danial Woodriff, his Officers and Crew, and Samuel Barnett the Pilot, for the Loss of his Majesty's Ship the Endymion on a Rock near Turks Island the 28th of August last; and having strictly enquired into the Circumstances of the Case on the Part of the Crown, as well as heard what Lieutenant Danial Woodriff, his Officers and Crew, and the said Pilot had to offer in their Defence, and having very maturely and deliberately considered the whole and every Part thereof, is of Opinion that Lieutenant Daniel Woodriff acquitted himself with great Zeal and Ability in his Exertions to Save his Majesty's Ship Endymion, and in his subsequent Endeavours to save some Part of her Stores: The Court is likewise of the Opinion that the other Officers and Ship's Company are blameless in the Los of his Majesty's Ship Endymion: But that she was lost through the unavoidable Ignorance of the Pilot, as it has appeared from the most experienced Pilots and Inhabitants of Turks Island that the Rock on which She struck was until then totally unknown; and Lieutenant Danial Woodriff, his officers and Ships Company, and Samuel Barnett, the Pilot are hereby acquitted accordingly.
[Signatures]
James Cutforth Judge Advocate on ye Occasion

1

Minutes of the Proceedings at a Court Martial assembled and held onboard his Majesty's Ship Blonde in Port Royal Harbour Jamaica the 6th day of October 1790, in pursuance of an Order from Philip Affleck Esquire Rear Admiral of the Blue, and Commander in Chief of his Majesty's Ships and vessels at Jamaica etc. dated the 3rd October 1790, to try Lieutenant Daniel Woodriff, his officers and crew, and Samuel Barnett the Pilot, for the Loss of his Majesty's Ship Endymion on a Rock near Turks Island, the 28th of August last;

Present

William Affleck Esquire Commander of his Majesty's Ship Blonde, and senior Captain of his Majesty's Ships and vessels at Jamaica…President,

Thomas Macnamara Rupell
William Albany Otway
Davidge Gould
&
George Burdon

The Prisoners having been brought into Court by the Provost Martial, every other Person who thought proper to attend was admitted.

The Order for assembling the Court, was read, and the Warrant directing Mr. James Cutforth to officiate as Judge Advocate on

this Occasion.

The Members of the Court, and the Judge Advocate, were then severally sworn pursuant to Act of Parliament; after which, the two annexed Letters were read, both from Lieutenant Woodriff to Rear Admiral Affleck, one dated the 31st August last, giving an account of the Particulars of the Loss of his Majesty's Ship Endymion; the other dated the 2nd. Instruction requesting an Enquiry be made into his Conduct relative to the said Loss:

The Court then proceeded on the Enquiry.

Court. Lieutenant Woodriff have you any Cause of Complaint against any of your Officers, or, Men relative to the Loss of the Ship?

Answer. – I have none.

Court. Have you, the Officers and Men any Complaint against your Commander relative to the Loss of the Ship?

Answer. – We have none.

Court. Lieutenant Woodriff relate to the Court the Occurrences which happen'd from the Time you took you Departure from Monto Christa.

Lieutenant Woodriff beg'd to refer the Court to his Log, which would give a more correct Account, then he could from his memory.

The Court call'd for the Endymion's

Log, which was produced; and Lieutenant Woodriff's Log being compared with it and found to agree in all material Points, the following Extract was taken from it.

"Saturday August 28th 1790.

"Wind easterly. Strong Breezes and hazy Weather. Passed a small Sloop steering to the Westward. Tack'd Ship. At 2 Monto Christa bore SSE distance 15 or 16 Miles. At 6 the Body of the Grange or Monto Christa SW¼ S 4 or 5 Miles; ditto Tack'd Ship to the Northward. AM fresh Breezes and Cloudy. ¼ past 3 up Courses to shorten Sail for the Land. At 5 made Sail again and set Topgallant Sails etc. At ½ past 6 saw Sand Key from the Mast Head bearing NNE¼E about 4 Leagues: Out 2nd reefs Topsails: At 8 AM I was informed by the Master that there was 7 ½ Fathoms, and in five minutes after, the Ship struck. Attempted to keep the Ship too, but She fell off in Consequence of the Irregularity of the Ground, there being 7½ Fathoms under the Main Chains when the Ship struck; 2 Fathoms under the Larboard fore Chains; 3 Fathoms under the Mizen Chains, and ¼ 4 under the Counter. Hove all the Sails aback but found it useless. Hoisted out the Jolly Boat and sent the Master to Sound round the Ship; found the Ship surrounded with high ridges of Rocks from 2 Fathoms to 8 or 9. Clew'd up the Sails and hoisted out all the Boats; carried out the Stream Anchor to the ESE in 9 Fathoms Water; found the Ship hung by the Larboard Bow and

and Starboard Ditto and that She struck so heavy that she had made 2 feet water. Rigg'd all the Pumps, and work'd them but found the Ship gain'd very fast upon them. Hove a Strain upon the Stream Cable, but found we could not move the Ship, she continuing to strike very heavy and the Water gaining fast in the Hold; insomuch that at 9 o'Clock there was five feet water. Handed all the Sails and try'd again to Start the Ship, but proved ineffectual. At 10, saw a Sail to the Northward. Call'd a Counsel of all the Officers who gave it as their general Opinion that if the Ship could be hove off, she would go down at her Anchors; and that the most advisable

method would be to cut away the Main and Mizen Mast to ease the Ship, as it appear'd impossible to free her of water. Ditto cut away the Main and Mizen Mast and clear'd the wreck; – at this Time 7 feet water in the Hold; – the Cole Hole and Magazine overflow'd. Broke the People off from the Pumps and began to preserve some part of the Provisions: at noon the water nearly up to the Orlop Deck. The Extremes of Sand Key, Turks Island, from NNE to NE, distance from 5 to 7 Miles; and Salt Key seen from the Mast Head bearing about NNE."

Sunday August 29th 1790. –

"Wind ESE. Fresh Breezes and clear. PM employ'd preserving as much as possible of the Provisions etc. Was join'd by the Schooner New Hope, James Smart, Master, from Philadelphia and bound to Kingston, who informed me of his Surprise at our being on shore, not knowing of any Shoal or Reef in that Direction and Distance from Sand Key. At 3 sent the Master off in one of the Boats to Turks Islands to give them Information of

our Situation, and for Assistance: Ditto began to get the new Sails and Part of the best Stores at hand in order to put them on board the Schooner New Hope, the Master of which promised to continue by the Wreck to save the People, Stores etc. if practicable: Ditto sent some Stores and People on board the New Hope in the Cutter; – the Boat returned, but the Sea ran so high and the Ship labour'd so much was impossible to send any more at this Time. Got the Foresail, Foretopsail, Jib, Foretopmast Stay Sail, and Middle and Topgallant Stay Sails unbent and made up. Endeavour'd to clear the Wreck of the Main and Mizen Masts, but could not by Reason of the Rigging having caught the Rocks whereby the Boats got stove with the Wreck. At ¼ past 10 the Ship became so very laboursome, and struck so hard as render'd it necessary to cut away the Foremast; got the Jib Boom in, and cut away the Spritsail yard. At ½ past 10, observed the Ship began to break at the Break of the Forecastle Deck. Ditto, Cut away the two Bower Anchors to save her Bows. At ¼ before 11, found the Ship was going down forward: got all the Hands aft on the Poop and fired all the remaining loaded Guns as signals to the New Hope Schooner. In 5 minutes after, the Ship was entirely under water forward, with the Bowsprit End just out of the water, and her Stern considerable up. Continued to send the men on board the New Hope Schooner, expecting the Ship to part every Minute. At 5 AM the Cutter and Launch returned from the Schooner; – sent them away with more men: At 7 they returned with Information that the New Hope could take no more. The Ship under water as far as the Main Mast, without a Possibility of saving any thing more than what had been got up on the Quarter Deck and Poop. At 7 observ'd a Schooner coming down to us: at 8 spoke her, and

proved to be the Twins, who also gave us Information that they knew nothing of the Reef on which the Ship lay, but that they had come down to assist us. Sent all the small arms etc. on board the Hope. The Master returned. Fresh Breezes and hazey. Punished George Campbell with 24 Lashes for Disobedience of Orders. Bearings and Distance the same as yesterday."

Monday August 30th 1790.

" Wind East. PM employ'd getting the Bread onboard the Schooner Twins. Several small Boats in sight coming down. The Sea making a fair Breach over the Ship as far as the Capston. The Twins parted her Cable being cut by the Rocks and drove to Sea. Was under the necessity of putting what few Stores we had saved on the Quarter Deck, and on board some small Boats that came down from Turks Island. At 5 a Mr. James Deane came onboard and tender'd his Services to recover what Part of the Ship and Stores etc. that might be possible to save when the weather became favourable; with whom I agreed that whatever shall be saved after I quitted the Ship, and safely deliver'd, a Proportion of it should belong to him. Employ'd getting the Small Arms on board the New Hope Schooner, and sent her off with the Ship's Crew to Turks Island. At 6 found it useless to stay any longer by the Ship; haul'd down the Colours and myself and Officers quitted the Ship then lying over End with her Head in 7½ Fathoms Water, and her Stern in 8 Feet. Went on board the Twins Schooner that had lost her Anchors and was beating up again. At 1 AM, the Jolly Boat sunk astern of the Schooner; hoisted her in and the other Jolly Boat in the Launch and Cutter, sent with the New Hope Schooner. AM, moderate and clear. The Extremes of the Grand Turk from E to NE¼N 2¼ Leagues; and the Caycos to b N¼N 4 or 5 Leagues. At noon, the

Body of the Grand Turk NNE, and Cotton Key EbN 3 or 4 Miles. Got up some of the Bread to dry."

Tuesday August 31st 1790 –

"Wind ESE. Fresh Breezes and clear. Beating up to Grand Key. At 6 hoist'd out the Jolly Boat and quitted the Twins to join the Ship's Crew in the New Hope Schooner lying at Anchor off the Town of Grand Key. At 9 AM sent the Master down to the Wreck to examine her and to sound round the Shoal. Employed getting the Sails on Shore and drying them, and erecting a Tent for the Sick being 15 in Number. Afternoon, fresh Breeze with a heavy Shower of Rain. (signed) Daniel Woodriff."

Which Lieutenant Woodriff gave in, besides the following Letter and Certificates as all the Accounts he had to produce relation to the Loss of the Ship and in Justification of himself, Officers, and Crew and Pilot.

" Sir

In Answer to yours of this Day, I beg leave to inform you I have been an Inhabitant, and sailed among these Islands for the Space of Forty seven years, and I have never heard anything of the Reef or Shoal which you mention, and where I understand his Majesty's Ship Endymion has been lost. I am, Sir your most obedient Servant. Nathaniel Mallory.
Turks Island, September 3 1790
Lieutenant Daniel Woodriff."

"Remarks on board the Brig Bermuda on the 2nd of September 1790 by the Master, and Mate of the said Brig

At 6 PM saw a Shoal bearing Southward from the Southeasternmost Key that lays on the Caycos Bank, 6 or 7 Miles distance from Sand Key. Immediately tack'd, and saw the Water break on it very pain. We lay up from that Time till 10 PM SE and SE and by S at which time the wind heading us, tack'd again and lay up NE going 4 ½ Knots. At ½ past 2 AM saw the Ground: sounded and

And had 5 Fathom water for 5 Casts; then no Ground. At 5 AM, Daylight; saw the Salt key EbN distance 6 Miles, and the Grand Key NEbN distance 12 Miles. At 11 AM Anchor'd at the Grand Key where we heard of his Majesty's Ship Endymion being castaway on a Shoal SSW from Sand Key 6 or 7 miles distance.

Henry Harvey
Henry J. Lusher"

"Although I have been frequently this Channel for many Years, I have never saw or knew anything of the above Shoal before.

Henry Harvey"

Charts being brought into Court and examined among which was the latest Survey published in 1787, the Reef on which the Endymion struck, was not found to be laid down in any of them.

Court. Lieutenant Woodriff was the Ship, from the Time of your Departure, under the Pilot's Direction as to the Course etc.?
Answer. She was; I only advis'd occasionally.
Court. Lieutenant Woodriff when the Master inform'd you that the ship was in 7 ½ Fathom Water at 8 AM in the morning, what Precautions were taken to keep her off?
Answer. When the Master informed me there were 7 ½ Fathom Water, the Ship then steering NNE, the Pilot, who was also on Deck and acquainted with the same, ordered the Ship to be kept more away; on my informing him the Ship's Head was off to Northward he order'd her to be kept up a little, at which time the Ship struck the Ground.
Mr. Megson, Master of the Endymion, sworn.

Court. Mr. Megson do you deliver this Log to the Court, as the original one, written by your own Hand, respecting

the Particulars of the Loss of the Ship?
Answer. I do.
Court to the Pilot} How long have you been Pilot for the navigation of Turks Island?
Answer. Twelve years, and better.
Court. Can you work a day's work?
Answer. I cannot; my Method is to navigate vessels from the Place of my Departure.
Court to Lieutenant Woodriff} Had you any body at the mast Heads?
Answer. We had a Man at each Mast Head, and I was up myself, once or twice, with the Master, and Pilot.
Court to the Pilot} Did you steer the same Course with the Endymion from the Place of her Departure, that you have done in former Times when Ships were under your charge?
Answer. I did.
Court. When you was inform'd by the Master that you were in 7½ Fathom Water, what was your reason for ordering the Ship's Course to be alter'd?
Answer. Because I know deep water was to leeward of the Ship.
Court. How came you by that Knowledge?
Answer. By seeing the White Water, and knowing it was off the Southwest End of the Island. I knew by keeping away I should get off the Land and come into deeper water, but didn't know of the Shoal on which the Ship struck.

Court to Lieutenant Woodriff} If you had kept your original Course would you have cleared the Shoal?
Answer. I have every Reason to believe we should.

The Court directed that John Young a Pilot, at the naval Hospital, be order'd to attend, but as he was too ill to appear, he sent the following Certificate to the Court.

"Port Royal Hospital October 6 1790

John Young professes himself a Pilot for Turks Island Passage, and for the Anchorage of the Island, and the Shoals all round the Island and the Keys. He believes he has gone through the Passage fifty Times; and declares he never, till the Endymion struck on the Rock, or Shoal, heard of it: and now believes it was not known before that time.

Signed: John Young"

Which was read.

The Parties having northing farther to say, the Court was clear'd, who, having very maturely considered the whole and every Part of the Proceedings, agreed to the following Resolutions –

1st –That Lieutenant Daniel Woodriff acquitted himself with great Zeal and Ability in his Exertions to save his Majesty's Ship Endymion, and in his subsequent Endeavor's to save some Part of her Stores:

2ndly That the other Officers and Ships Company are blameless in the Loss of his Majesty's Ship Endymion: But
3rdly That She was lost through the unavoidable Ignorance of the Pilot; as, it has appear'd from the most experience'd Pilot and Inhabitants of Turks Island that the Rock on which she struck was, until then, totally unknown. And

4thly That they do acquitted Lieutenant Dnaiel Woodriff his Officers and Men, and Samuel Barnett the Pilot, accordingly.

The Sentence being drawn up agreeably to the said Resolutions and signed by the Court, all Parties were again admitted, and the Judge Advocate (by the President's Direction) then pronounced the Sentence; after which the Court broke up.

James Cutforth
Judge Advocate on the Occasion

Appendix 4

Department of Environment and Coastal Resources
Ministry of Tourism, Environment, Fisheries, Maritime Affairs, Culture & Heritage, Agriculture, Religious Affairs and Gaming. Turks and Caicos Islands Government
Lower Bight Road, Providenciales
Turks and Caicos Islands

SCIENTIFIC RESEARCH PERMIT

SRP No.: 2022-08-19-33
RENEWAL/EXPANSION OF SRP 19-04-01-13

Main Title of Research:	Cultural Continuity in the Turks & Caicos Islands
Principal:	Dr. Joost Morsink, SEARCH Inc.
Other applicants:	Dr. Ruud Stelten, St. Eustatius Center for Archaeological Research & The Shipwreck Survey
Partners/collaborators in TCI (if any):	Turks & Caicos National Museum
Type of application:	R, S
Location:	Salt Cay, Cotton Cay
Total duration of application:	1 year
Period covered by this application:	January 1 - December 31, 2023
Research Fee:	Waived: Academic Research

Authorized Approving Officer:

LORMEKA WILLIAMS, MSc.
Director, DECR

Date: 19 August 2022

Not Valid without the Official Seal of the DECR

Note:

This Permit should be presented to authorized-DECR Officers or TCIG officials when requested during monitoring activities which may be done anytime throughout the duration of the approved activities. The Application for Research Permit, Conditions of Approval and required attachments may be requested too.

Appendix 5

Appendix 6

Hurricane ranking system based on the Saffir-Simpson Hurricane Wind Scale

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	64-82 kt 119-153 km/h	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	83-95 kt 154-177 km/h	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	96-112 kt 178-208 km/h	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	113-136 kt 209-251 km/h	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 kt or higher 252 km/h or higher	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Appendix 7

Hurricanes and tropical storms since 1851 that have passed within the impact zones of the *Endymion* wreck site (Tropical Storm/Category 1 and 2 = 35 km; Category 3 and 4 = 60 km; Category 4 and 5 = 100 km).

Year	Name	Date storm crossed into the zone	Category within zone	Direction in relation to Endymion Rock	Maximum sustained wind speeds in zone (knots)	Pressure in zone (millibars)
1852	Unknown	August 20	1	Crossing Salt Cay – north	70	N/A
1856	Unknown	August 25	1	South	70	N/A
1861	Unknown	August 13	TS	South	40	N/A
1866	Great Nassau Hurricane	September 30	3	North – between Salt Cay and Grand Turk	100–110	N/A
1870	Unknown	October 23	2	Above	90	N/A
1879	Unknown	August 15	TS	North	50	N/A
1882	Unknown	September 3	TS	North	60	N/A
1886	Unknown	September 17	TS	South	40	N/A
1886	Unknown	October 22	TS	West	40	N/A
1893	Unknown	August 18	3	East to north	105	N/A
1899	Unknown	September 2	TS	West	60	N/A
1901	Unknown	July 8	TS	East – North	60	N/A
1926	Unknown	July 25	1-2	South to West	85	N/A
1926	Great Miami Hurricane	September 17	4	North	130	N/A
1928	Unknown	August 5	TS	South to west	40	N/A
1928	San Felipe-Okeechobee Hurricane	September 15	4	Southeast to northwest	135	N/A

1933	Cuba-Brownsville Hurricane	August 30	4	North	130	N/A
1945	Unknown	August 20	TS	North	40	N/A
1945	Homestead Hurricane	September 14	3	North	105	N/A
1960	Florence	September 19	TS	South	40	1,003
1963	Edith	September 28	TS	South to west	40	N/A
1981	Gert	September 9	TS	Southeast to west	35	1,012
1985	Isabel	October 7	TS	West	40	1,005
2008	Ike	September 7	4	Above	115	947
2014	Bertha	August 3	TS	Southeast to northwest	40	1,013
2017	Irma	September 8	5	South	140	919
2022	Fiona	September 20	3	East to north	100	962