

Hammocks: A Maritime Tool

by

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During the age of sail, sailors slept in hammocks made of canvas, suspended on the gundecks and secured to the beams above. This work seeks to understand the adoption and adaptation of hammocks as a maritime tool on sailing vessels and the subsequent impact and changes their presence caused. The adoption of hammocks onto maritime vessels affected all aspects of life at sea; including alterations to the construction and supplies needed aboard ships, which resulted in monetary impacts. Hammocks allowed for an increase in the number of men aboard vessels, they shaped modifications and improvements in sleeping conditions, and strengthened the divisions in ranks, while also acting as a means of comradery. In addition, hammocks created revisions in rules and regulations. Likewise, they altered forms of protection and defenses. Furthermore, hammocks affected health and hygiene by playing large roles in governing the cleanliness of ships and sailors. They also had various functions in relation to the sickbay, including a key part in burial. Finally, this thesis concludes with the replacement of hammocks by bunks. Ultimately, it evaluates the hammock as a maritime tool that influenced life at sea during the age of sail.

Hammocks: A Maritime Tool

A Thesis

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by

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Chapter 1

Discovery

The pig lived in great luxury for some months ... The sailors had made it a hammock, in which it always slept; when it wished to be put in it or taken out, a squeal would at once bring an attendant.

-Daniel Ammen

Introduction

The adoption, adaptation, and use of hammocks aboard sailing vessels is one aspect of maritime history so far viewed as unimportant and thus has garnered little attention in historical and archaeological literature. Their adoption, however, onto western European sailing vessels, as the eruption of maritime exploration of the Western World and the formation of European empires began, directly affected that experience. Hammocks provided a safe, relatively comfortable, place for sailors to sleep. Their most important feature, though, was their removability, thus allowing other uses for areas of limited space on early modern ships. Additionally, the use of hammocks allowed ship size and crew numbers to increase over time, as sailors were no longer forced to sleep on barren decks or in coffin-like cabins that occupied precious space. Thus, it became a vital new tool that contributed to the technology that furthered maritime progress.

A detailed look at the role hammocks played aboard maritime vessels is an integral part of understanding maritime culture. The lack of literature on this topic may be due in part to the difficulty of the subject. There is no database or collection of primary documents about hammocks. In fact, like many things in life, hammocks, even at the height of their use, were not

regarded as extraordinary, and therefore not usually worthy of mention. Furthermore, the perishable materials used to make hammocks do not survive as archaeological artifacts, adding to the difficulty of studying their past. If one looks hard enough, however, one can find details and statements about the involvement of hammocks aboard maritime vessels in a plethora of written sources, as well as a few artistic representations. Much like a puzzle, these pieces can form a comprehensive history. There are limitations to the available historical information, however, creating set parameters and preventing a complete history. The information in this thesis focuses primarily on the adoption of hammocks by the navies and maritime merchant vessels of the European empires after 1492, particularly the British navy, with smaller supplements from the Spanish and the United States Navy, as well as British, Spanish, and American merchants, with little on the French and Dutch navies. Information from these last two nations may exist, but are currently unobtainable due to language and distance barriers. Columbus documented the first contact with hammocks by the Western World in his journal; however, little written evidence exists thereafter until the late seventeenth century. The chronological framework of this study therefore focuses on the late seventeenth century to shortly after World War II when the use of hammocks was all but eliminated.

Hammocks were not simply a place to sleep aboard a ship. They required specific material to make and men to make them, influencing the financial costs of outfitting a vessel. They required special adaptations to the structure of ships for their use. Hammocks had a direct effect on the regulations and routines aboard ships, especially naval vessels. They affected sleeping conditions and the quality of sleep, as prior to hammocks, the deck served as one's bed. Hammocks also directly changed the number of men a ship could accommodate, which meant that ships' crews and ship size could grow larger faster. Larger ships required larger crews, and

hammocks allowed for the housing of more men. Furthermore, this housing was removable, meaning that functional space doubled, as ships no longer needed a multitude of non-removable coffin-like cabins and allowed men to sleep in the same place they ate and fought. Thanks to hammocks, these larger ships could not only house the higher number of men it took to man it, but they also could then house the additional crew it took to weaponize a ship, aiding in the increase of warships beginning in the seventeenth century. Their use also created new conditions that forced ship owners and naval directors to reevaluate hygiene aboard ships, leading to increased efforts to ensure sailors' health. Not only did they serve as a place to sleep, but additionally as protection during battle, life-saving devices during a vessel's demise, and coffins after death at sea. Not simply a place to sleep, a hammock was a versatile tool that impacted countless aspects of life at sea.

Historiography

No single work has detailed the history and importance of hammocks used at sea. In fact, only two short works have focused solely on hammocks and only a few others have devoted more than a few sentences. "Hammocks and Their Accessories," is an article published in the *Maritime Mirror* in 1911. This four-page article, written by Rear-Admiral Sir R. Massie Blomfield addresses several important points regarding the history of hammocks. In his first three paragraphs, Blomfield focuses on the Western World's introduction to hammocks, with Christopher Columbus' arrival in the New World and Sir Walter Raleigh's subsequent visit in 1595. He also identifies a plethora of alternative terminology, spellings, and pronunciations for the term hammock. In these paragraphs, he cites Washington Irving's biography of Columbus and Raleigh's journal of his travels to Guiana. Although it would be helpful to see additional

citations for his references to the numerous spellings of hammock, he is still clear and to the point, despite its brevity. In the next three paragraphs, he covers the sporadic adoption of the hammocks aboard sailing vessels in the sixteenth and seventeenth centuries, citing three firsthand accounts, by the Duck of Buckingham in 1625, William Damphier in 1698, and T. R. Blackney in 1750, and two dictionaries, Elisha Coles' *English Dictionary* in 1692 and N. Bailey's *An Universal Entomological English Dictionary* in 1724. The next, rather long, paragraph is an excerpt from William Falconer's *An Universal Dictionary of the Marine* in 1771. Blomfield uses Falconer's description detailing the need for hammocks as a removable sleeping tool and how they enabled warships to function more efficiently in the form of a quote rather than his own words. Next, he covers the accessories required for the use of hammocks, primarily clews. Knetties were the short lines threaded through several grommets, or holes, on the canvas of a hammock. The lines when gathered together formed clews. When collected and tied together at the opposite end they provided an anchor to hang on a hammock hook: a nail or hook placed in the beams of the ship. He then spends a few sentences explaining the Dutch and French terminologies, but does not explain any history of the use of hammocks by these nations. Finally, he examines new uses of the hammock at the time of the article: stretchers for the wounded and the adoption of grass hammocks as a luxury novelty. Although this article does provide helpful information, it is just an article and does not explore in extensive detail all the facets of the history and uses of hammocks.¹

The second work, "Hammocks: A New Vision" written by Laura L. Rowell is a fine arts master's thesis that mainly analyzes the artistic techniques of weaving various hammocks. Although she primarily focuses on the creation of modern handmade hammocks, she does present a brief overview of the history of hammocks. Her first paragraphs identify early

¹ Massie R. Blomfield. "Hammocks and Their Accessories," *Mariner's Mirror* 1, no. 5 (1911): 144-147.

encounters of the Western World with New World hammocks, citing Irving's biography of Columbus and a firsthand account by François Froger in 1698. She identifies that hammocks created a solution to facilitate the need of growing navies by quoting the same maritime dictionary by William Falconer that Blomfeild did in his 1911 article. In a few sentences, Rowell identifies the use of hammocks as protective devices and as burial tools. The last page and a half of the history focuses on the more contemporary uses in Latin America, concluding with the hammock's now leisure identity. She does not support all of her connections or provide sources for many of her statements. On the other hand, her purpose was artistic and not to produce a comprehensive history of the use of hammocks.²

A third work, along with several others from the same author, touches briefly on nearly every facet of hammocks. Brian Lavery is a noted maritime historian and has authored numerous books in the field. Although he does not devote an entire work to hammocks, and most of his books only have scattered information and statements about them, he does furnish a full chapter on the subject in his book *The Arming and Fitting of English Ships of War, 1600-1815*. As the title suggests, his focus, in this and other works, is heavily on English Naval ships in the seventeenth and eighteenth centuries, which does not provide a complete history of hammocks. In this work, and others including *Nelson's Victory: 250 Years of War and Peace*, *Royal Tars: The Lower Deck of the Royal Navy, 875-1850*, and *Able Seamen: The Lower Deck of the Royal Navy 1850-1939*, he efficiently addresses many hammock-related topics. This includes the introduction of hammocks to the Western World and a few insightful facts about its subsequent widespread adoption on to maritime vessels. He writes about the outfitting of a ship, the bedding associated with hammocks, the space needed and used overtime, how the crew affected the organization of the ship, and the location of hammocks during sleeping and stowage. Lavery

² Laura L. Rowell, "Hammocks: A New Vision" (MA thesis, Rochester Institute of Technology, 1983), 5-8.

identifies various levels of officers and how they slept, including discussions on beds and cabins. He focuses on the sleeping conditions created by differing circumstances, the cleanliness of vessels and hammocks, and how this could affect a sailor's health. In other chapters, he also gives an explanation of the hammock netting on deck and how hammocks lent protection in battle and their use in burial. He provides numerous facts about their use until 1923, but does not specifically talk about their eventual replacement. He produces thorough citation, including sources such as naval records, documents from the British National Maritime Museum, memoirs, and manuscripts. If one collects and sorts all the data he addresses about hammocks, a considerable history develops; however, all-in-all it is not a thorough history of hammocks as it does not provide the full range of details needed to completely understand the broad scope of hammocks' impact on maritime culture.³

Other authors touch on many of the important aspects of hammocks, however, the information is spread throughout a larger work, and one must collect all the statements to be able to evaluate everything that the author has addressed. One such author, R. S. Allison, in her book, *Sea Diseases: The Story of a Great Natural Experiment in Preventive Medicine in the Royal Navy*, addresses facets of hammocks, as her title would suggest, in the context of naval medicine. She discusses the sleeping conditions aboard vessels; including the small, cramped space allotted to each hammock on the gun deck, a place with poor ventilation. Allison shows that many surgeons and spectators had different viewpoints about the overall circumstances of sleeping on the gun deck in such confined quarters, some believing it was a putrid situation and others claiming it was a healthy, well-maintained environment. Whatever the case, she points out the

³ Brian Lavery, *The Arming and Fitting of English Ships of War, 1600-1815*, 55-156, 168-169, 178-182; Brian Lavery, *Nelson's Victory: 250 Years of War and Peace* (London: Seaforth Publishing, 2015), 64, 114, 163; Brian Lavery, *Royal Tars: The Lower Deck of the Royal Navy, 875-1850* (Annapolis: Naval Institute Press, 2010), 40, 49, 99-101, 132, 138, 139, 178, 223, 309; Brian Lavery, *Able Seamen: The Lower Deck of the Royal Navy 1850-1939* (Annapolis: Naval Institute Press, 2011), 16, 26, 63, 64, 109, 130, 139, 191, 205, 252, 279.

efforts made to ensure a healthy atmosphere, including regularly washing the decks, opening the gun ports, scrubbing the hammocks, and airing them whenever possible. She provides ample citation, and she bases most of her facts on firsthand accounts. Given the focus of her book however, it is understandable that she only briefly discusses two of the various topics regarding hammocks.⁴

Another author that offers a considerable understanding of hammocks throughout a larger work is John Masefield in his *Sea Life in Nelson's Time*. He addresses the outfitting of a sailor in regards to the number of hammocks, the bedding received, accessories needed to sling them, and the materials used to make them. Additionally, he describes the sleeping conditions, including the small amount of space allotted to each sailor, the alternating placement of the watches' hammocks to increase space, the various officers' sleeping situations and the lengths taken to keep the hammocks and the gun deck clean, despite the fact that it did not always help. Masefield identifies how hammocks acted as a marker to the beginning and the end of a sailor's day and some of the regulations involved. He explains how sailors placed hammocks in the hammock netting along the railing of the ship, not only to stow them away during the day, but also to help keep them clean, and provide added protection in battle. He even points out how the lighthearted games involving hammocks could act as comradeship. A caution to his work though, there is no bibliography. Although his description is one of the most thorough, he does not consolidate the facts into one section or chapter, his information is in various places throughout

⁴ R. S. Allison, *Sea Diseases: The Story of a Great Natural Experiment in Preventive Medicine in the Royal Navy* (London: John Bale Medical Publications, 1943), 46, 55, 62, 129, 136, 147.

his entire book; and, even if compiled into one section, it would not form a complete and fully detailed history.⁵

Many encyclopedias and dictionaries give a compact breakdown of several of the important functions of hammocks, such as William MacEwen and A.H. Lewis' 1953

Encyclopedia of Nautical Knowledge, which states:

Hammock. (Of Carib origin, referred to by early Spanish traders and explorers as hamaca, a native hanging bed made of fiber netting) Hanging bed usually made of a piece of canvas measuring about 3 by 6 feet, slung at each end by several cords, or clews, which are connected to a common ring for placing on a hook, or other means of slinging. Formerly much used in naval vessels by lower deck personnel, now almost displaced by metal-framed berths set up in tiers of two to three in height, depending on number of men carried and sleeping space allotted. Hammocks were slung on the gun deck or decks from h.-battens secured to the beams for the purpose, sometimes to h.-stanchions, and when not in use were rolled up neatly with included blanket, etc., and tied up, or lashed, before stowing in the h.-netting, or h.-berthing, which, for many years, was a net or long box-trough in the bulwarks covered by painted canvas called a h.-cloth, or top-cloth. Later when bulwarks were dispensed with, space was assigned as h.-berthing below the weather deck.⁶

Although these entries provide the laymen with a basic understanding, they are not enough, as the history of hammocks is so much more than a simple definition.

Information on hammocks in peer-reviewed literature references them only in connection to other topics. In these cases, the material is extremely limited, generally only a sentence or two. Even classic maritime works such as Samuel Morison's *Christopher Columbus Mariner* and J. H. Parry's *The Age of Reconnaissance* only mentions the introduction of hammocks to the Western World due to Columbus' journey, and that is all they offer. An additional example of

⁵John Masfield, *Sea Life in Nelson's Time* (London: Methuen and Company, 1905), 18, 23, 25, 26, 28, 64, 68, 69, 76, 82, 83, 88, 98-100, 131-134, 138, 171, 184, 209.

⁶William A. MacEwen and A. H. Lewis, *Encyclopedia of Nautical Knowledge* (Cambridge: Cornell Maritime Press, 1953), 218.

indirect information about hammocks is Anthony Carew's *The Lower Deck of the Royal Navy 1900-39: The Invergordon Mutiny in Perspective*, which only addresses how hammocks were a key marker to the beginning and end of a sailor's day. Another source, Charles Gerard Davis' *American Sailing Ships: Their Plans and History*, speaks only about the stowing of hammocks in the hammock netting and how this function provided protection. Even authors like Pablo Pérez-Mallaín, who specifically sets out to discuss shipboard life have little to say on the matter.⁷ Few secondary sources provide more than a couple sentences addressing any aspect of hammocks; not even one attempts to evaluate them fully. For this reason, a history of hammocks is needed, not only to collect the data in a single place and present all the facts directly in relation to one another, but also to expound on and fill in the gaps in the existing literature.

Previous Sleeping Conditions

Prior to 1492, and for some time thereafter, the use of hammocks aboard maritime vessels was unknown, and sleeping conditions were less than desirable. In fact, there was rarely a fixed sleeping area, nor did every sailor have sleeping materials. A sailor's options were the deck, the hold, or if they were lucky, the forecastle or shelter deck. Many ships had a bare, open deck, with no cover whatsoever. Frequently the vessels were too small to accommodate the sailors when horizontal. One passenger describes the predicament,

It is sound advice that the uncommon or delicate passenger provide himself with some little narrow cushion, a folded sheet, a small blanket, and no more than a small pillow; the thought that anyone would think of carrying a large full bed on a

⁷ Samuel Eliot Morison, *Christopher Columbus Mariner* (New York: The New American Library, 1942), 44; J. H. Parry, *The Age of Reconnaissance* (Las Angeles: University of California Press, 1918), 70; Anthony Carew, *The Lower Deck of the Royal Navy 1900-39: The Invergordon Mutiny in Perspective* (Manchester: Manchester University Press, 1981), 3-4; Charles Gerard Davis, *American Sailing Ships: Their Plans and History* (New York: Dover Publications, 1929), 91, 109-110; Pablo E. Pérez-Mallaína, *Spain's Men of the Sea: Daily Life on the Indies Fleets in the Sixteenth Century*, translated by Carla Rahn Phillips (Baltimore: John Hopkins University Press, 2005), 137-138.

galley would make some people jeer and others laugh, because by day there is no place to keep it, much less any place to stretch it out by night ... you will not find anywhere to sit during the day, much less anywhere to sleep by night.⁸

When there was space, most men slept on the bare deck, on a small sleeping pad, or on a pile of ropes; for example, in 1513 Captain Sir Edward Echyngam described his only available bedding as a “cable mattress.”⁹ Most sleeping pads were little more than a bag or sack stuffed with straw. Beds and cots were practically unknown aboard ships, only used by high-ranking officers or notable passengers. A second possible sleeping place was below deck, that is, if there even was a lower deck and if it was not completely full of provisions and cargo. Most sailors, however, still chose to sleep on deck, even when there was space in the hold, as the lower decks were frequently oppressive and had minimal ventilation.¹⁰

The most coveted position, however, was the possibility of sleeping under the forecastle or shelter deck. In the mid to late fifteenth century, forecastles were becoming common. The forecastle was a permanent super structure, sometimes described as a deckhouse, at or near the bow of the ship, generally running one-fourth to one-third the length of the ship, atop the upper deck, usually open aired, but providing considerable cover from the elements. They were often originally called somerhutches, somer from the old English and hutche from the old French, both meaning bedstead; and as the original name implies, they mostly served as sleeping shelters. Depending on the size of the ship, however, there was not always enough room for the entire crew within the forecastle, even despite one third to one half of the men being awake on watch;

⁸ Friar Antonio de Guevara, *De Muchos Trabajos que se Pasan en las Galeras*, 1539 quoted from Pablo E. Pérez-Mallaína, *Spain's Men of the Sea: Daily Life on the Indies Fleets in the Sixteenth Century*, translated by Carla Rahn Phillips (Baltimore: John Hopkins University Press, 2005), 137.

⁹ Michael Oppenheim, *A History of the Administration of the Royal Navy and of Merchant Shipping in Relation to the Navy: From MDIX to MDCLX, with an Introduction Treating of the Preceding Period*, volume 1 (London: J. Lane, 1896), 15.

¹⁰ Pérez-Mallaína, *Spain's Men of the Sea*, 83-84, 137.

therefore, it was not uncommon for a sailor not to have a guaranteed place within the forecastle, and thus forced to sleep on the open deck.¹¹

On larger vessels and warships, there were small coffin-like cabins. Mostly located in the forecastle, such cabins were stacked up to three tiers high. Other times, they were below deck, but rather than being permanent structures, like in the forecastles, they were often partially removable, built between the ports so they could fold up and secure to the deckhead above. This system, however, came with several drawbacks. As a ship only had a fixed amount of space, with many needed purposes, little was available for cabins. In 1642, the *Victory* recorded having 56 or more cabins, which seems to be a considerable number; however, these 56 cabins were to house 250 men. This may have been sufficient because of the division of the crew into two or three watches, furthermore, two men frequently slept in the cabin at the same time.¹²

The added obstructions of these cabins also decreased air circulation and restricted the ability to check parts of the ship for damage or deterioration. Additionally, many considered that the increasing size and weight of the forecastles hampered a ship's ability to move swiftly. During battle, the extra wood of the cabins increased the chance and amount of deadly splinters.¹³ The most apparent and pressing problem, however, was the quality of life these cabins created. A young boy recalled his experience in the cabins as "a thing much like some gentleman's dog kennel, for I was forced to creep in upon all fours, and when I was in and set

¹¹ Oppenheim, *A History of the Administration of the Royal Navy*, 6; Pérez-Mallaína, *Spain's Men of the Sea*, 83-84.

¹² Oppenheim, *A History of the Administration of the Royal Navy*, 125, 127; Lavery, *The Arming and Fitting of English Ships of War*, 155; Lavery, *Royal Tars*, 49.

¹³ Lavery, *The Arming and Fitting of English Ships of War*, 155; Lavery, *Royal Tars*, 49.

upon my breech, I could not hold my head upright.”¹⁴ Additionally, sources described them as “sluttish dens that breed sickness in peace, serving to cover stealths, and in fight are dangerous to tear men with their splinters” and “nasty holes, which breed sickness.”¹⁵

The answer to all these problems came in the form of the hammock. Health factors, it seems, most heavily drove the transition. Several officers and medical professionals advocated for the switch to hammocks. Colin Chisholm in his 1822 medical manual states,

Other precautions are equally necessary to preserve health, to prepare for change of climate, and to prevent or destroy infection. I shall notice only the dividing the men into watches according to their number; maintaining due discipline; using hammocks instead of berths; exposing these and the blankets on deck during the day; not permitting the use of beds or mattresses....¹⁶

Likewise, in 1685 Nathaniel Boteler believed “the lodging of the common men in hammocks is far more wholesome and preferable.”¹⁷

The discovery of new lands across the Atlantic drove competition to increase naval power to enable the capture and colonization of those lands: and so, as naval ships grew so did crews. At the same time, the discovery of the hammock began to spread and increase in the minds of naval men, providing a simple answer to the large problem of sleeping conditions aboard maritime vessels.

¹⁴ Edward Barlow, *Barlow's Journal of His Life at Sea in King's Ships: East and West Indiamen and Other Merchantmen from 1659 to 1703*, volume 1, edited by Basil Lubbock (London: Hurst and Blackett, 1934), 257-258 quoted from Lavery, *The Arming and Fitting of English Ships of War*, 155.

¹⁵ Oppenheim, *A History of the Administration of the Royal Navy*, 127; Lavery, *The Arming and Fitting of English Ships of War*, 155; Lavery, *Royal Tars*, 49; Christopher Lloyd, *The British Seaman 1200-1860: A Social Survey* (Cranbury, New Jersey: Associated University Presses, 1970), 68.

¹⁶ Colin Chisholm, *A Manual of the Climate And Diseases, of Tropical Countries: In Which a Practical View of the Statistical Pathology, And of the History And Treatment of the Diseases of Those Countries, Is Attempted to Be Given ... As a Guide to the Young ... Practitioner On His First Resorting to Those Countries* (London: Burgess and Hill, 1822), 13.

¹⁷ Nathaniel Boteler, *Boteler's Dialogues*, edited by William G. Perrin (London: Navy Records Society, 1929), 257.

Origins of the Hammock

The origin of the hammock is unclear because of the lack of written or archaeological evidence, and may be a question that is never answered. Based on the fact that no recorded use of hammock-like items existed in Europe prior to Columbus' arrival in the New World in 1492 indicates that the hammock was likely a New World invention. At least, when Columbus described its use by the Tainos in the West Indies, the hammock was certainly new to him. Many New World civilizations did not have written records. Some authors, however, believe Alcibiades developed the hammock for the Athenian fleet in the early 400's BC in Athens.¹⁸ The evidence for this is unclear. True or not, it is possible that someone other than New World natives had recognized the benefits of a hanging bed. What is clear is that western Europeans were unacquainted with such a contraption when Columbus encountered hammocks in the New World.

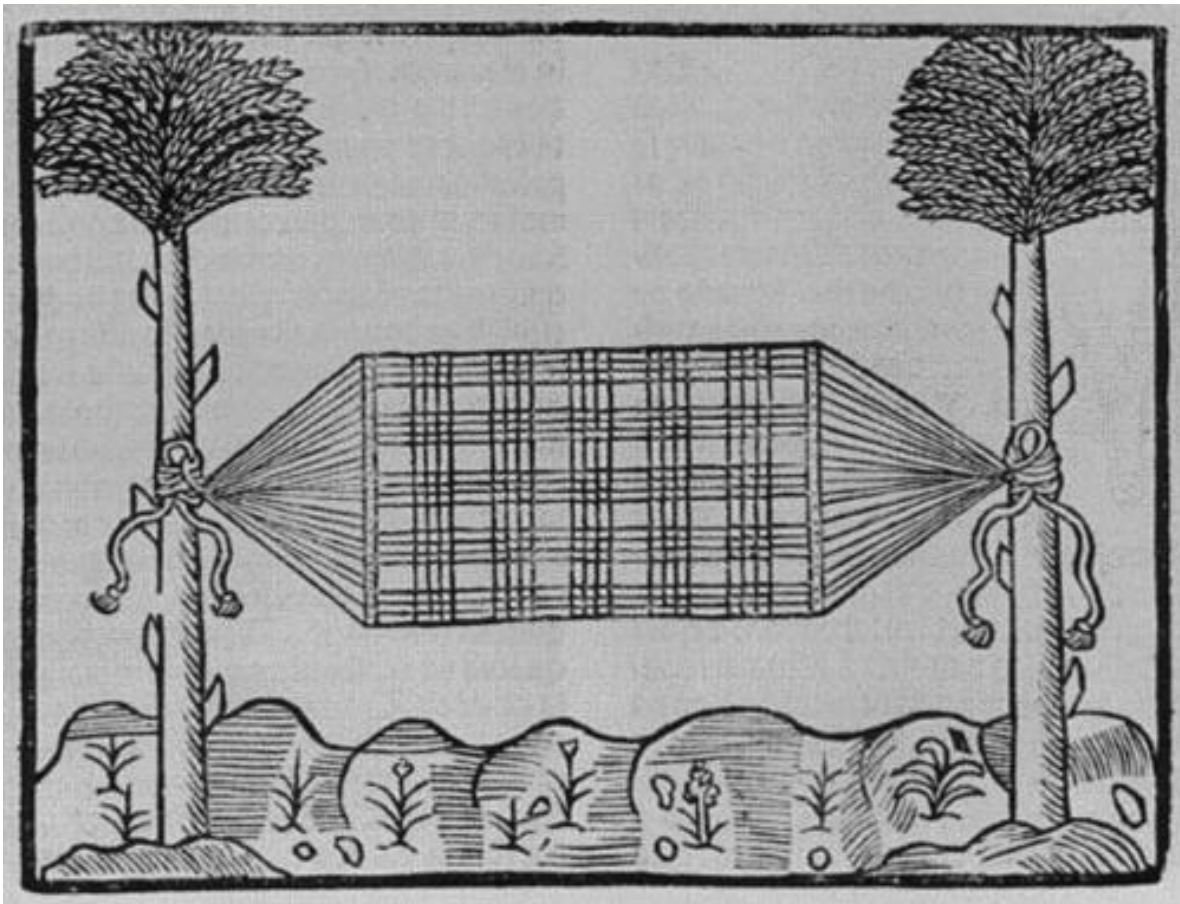
New World Origins

The date and location of the development of the hammock within in the New World is unclear. Its origin of tropical fibers from humid environments mitigated against its survival as an artifact in the archaeological record. Although uncertain, scholars, such as Sven Loven, think the Arawak were the first to develop the hammock, weaving them from cassava, bark, agave, or bast fiber. The sub-Caribbean group of the Arawak, the Taíno, adapted the concept with the use of cotton. Then another group, the Caribs, brought the cotton hammock to the Lesser Antilles. Many early explorers described the use of the cotton hammock including Columbus in 1492,

¹⁸ William F. Keegan and Lisabeth A. Carlson, *Caribbean Archaeology and Ethnohistory: Talking Taino: Caribbean Natural History from a Native Perspective* (Tuscaloosa: Fire Ant Books, 2010), 15; David S. T. Blackmore, *The Seafaring Dictionary: Terms, Idioms and Legends of the Past and Present* (Jefferson, North Carolina: McFarland and Company, 2009), 146; W. H. Smyth, *The Sailor's Word-book: an Alphabetical Digest of Nautical Terms, Including Some More Especially Military And Scientific* (London: Blackie and Son, 1867), 363.

Gonzalo Fernández de Oviedo in 1542, and Sir Walter Raleigh in 1598. Their writings describe them as made of cotton and a standard widely-used household item. Oviedo even observed a warehouse-like place with an abundance of hammocks, implying that they were a desired commodity.¹⁹

Figure 1. Dress and Equipment of Naval Marines and Sailors, Spain, Eighteenth Century.



Source: Juan Jose Navarro (El Marques de la Victoria), *Album del Marques de la Victoria*, from his *Diccionario demostrativo con la configuracion y anatomia de toda la arquitectura naval moderna* compiled by the Marques from 1719 to 1756 (Madrid: Museo Naval, 1995), Hoja 103.

¹⁹ Sven Loven, *Caribbean Archaeology and Ethnohistory: Origins of the Tainan Culture, West Indies* (Tuscaloosa: University Alabama Press, 2010), 27, 410, 457-458; Gonzalo Fernández de Oviedo, *Misfortunes and Shipwrecks in the Seas of the Indies, Islands, and Mainland of the Ocean Sea (1513–1548): Book Fifty of the General and Natural History of the Indies*, translated by Glen F. Dille (Gainesville: University Press of Florida, 2011), 132.

Figure 2. Depiction of Amerigo Vespucci's first interaction with hammocks, c. 1580-1605.



Source: National Maritime Museum PAF 7094.

Uses by New World Natives

Although it is unclear exactly when New World natives developed the hammock, they were certainly a household staple by the time Christopher Columbus sailed to the New World in 1492, and remain so to this day in many parts of Central and South America. Hammocks, most likely originally made from fibers of cassava, agave, and tree bark, later were primarily made from cotton. Typically woven by women, they were generally not a solid piece of fabric, rather, described as closely resembling nets and used as beds, cradles for babies, and places to rest or sit. Often six to eight feet wide, secured between two poles by a cord, called jico or hico in Taíno

(see figure 1). The net-like weave allowed for air circulation across the full body in hot climates. The suspension of the hammock off the ground also kept the inhabitant safe from most bugs and wildlife; a fire lit underneath could also provide additional protection, distribute smoking herbs, or provide warmth. Additional uses included stretchers to transport the injured and wounded, or as a form of transportation for people of importance.²⁰ Charles Waterton, while traveling in Guiana in 1816, described South American hammocks and what he believed to be a native dependence on them as a necessity.

They are sometimes formed of silk-grass fiber,* and sometimes of cotton, the latter being the more pliant, and the former the more lasting. The best hammocks are not formed like nets, and knotted, but the strings are intertwined so that they adapt themselves to every movement of the body. A native never goes on a journey without his hammock, which he rolls into a sort of rope, and passes it over one shoulder and under the other, just as officers in the army wear their overcoats on the march. In such a moist country as Guiana, where to sleep wet means to ensure a fever, and where a traveler will sometimes have to walk day after day up to his knees in water, the hammock is a necessary of life. When a traveler wishes to rest, he has only to hang his hammock between a couple of trees, and he can then clamber into it, rub his wet legs dry, and lie down in comfort and security. Hammocks are of various sizes, some being very small and made for children, while others are large enough to hold two or more people. As a rule, however, each person has a hammock to himself.²¹

²⁰ Jerome S. Handler, "Aspects of Amerindian Ethnography in 17th Century Barbados," *Caribbean Studies* 9, no. 4 (January 1970), 64, 65; Loven, *Origins of the Tainan Culture*, 27, 66, 85, 410, 457, 458; Bryan Edwards, *The History, Civil And Commercial, of the British Colonies In the West Indies. Third edition, with considerable additions* (London: John Stockdale, 1801), 50-51; Keegan and Carlson, *Talking Taino*, 34; William-Lytle Schurz, *This New World: The Civilization of Latin America* (New York: Dutton, 1954), 312; John Nicholl, "An Houre Glasse of Indian News," *Caribbean Quarterly* 12, no. 1 (March 1966), 52; William Robertson, *The History of the Discovery And Settlement of America* (New York: Harper and Brothers, 1835), 173; F. J. de Pons, *Travels In South America: During the Years 1801, 1802, 1803, And 1804; Containing a Description of the Captain-Generalship of Caraccas, And an Account of the Discovery, Conquest, Topography, Legislature, Commerce, Finance, And Natural Productions of the Country; With a View of the Manners And Customs of the Spaniards And Native Indians* (London: Longman, Hurst, Rees, and Orme, 1807), 380.

²¹ *Fiber from agave or related plants. Charles Waterton, *Wanderings In South America: The North-west of the United States, And the Antilles, In the Years 1812, 1816, 1820 And 1824. With Original Instructions for the Perfect Preservation of Birds, Etc. for Cabinets of Natural History* (London: Macmillan and Company, 1879), 418-419.

Discovery by Europeans

Just as the need for sleeping alternatives aboard ships became evident, Christopher Columbus sailed to the New World. It is possible he witnessed their use in the Bahamas before he recorded it in his journal; however, all that is known for sure is what he wrote.²² He initially mentions New World beds on October 17, 1492, observing natives' "beds and coverings of cotton nets." He did not say if the beds were hanging and if he was referring to the whole bed as a net or just the blanket. On November 3, 1492, he made his first direct reference to hammocks, "Great numbers of canoes came to the ships this day for the purpose of bartering their cotton, and nets or hammocs on which they sleep."²³ Spanish versions of the journal of his first voyage show the formal use of the word hamacas recorded on November 3, 1492. This word would become the root and origin of today's spelling of hammock.²⁴

Numerous explorers who sailed to the Americas after Columbus wrote about their experiences and contact with New World natives, including writing about hammocks. In 1505, Amerigo Vespucci explained how the natives "sleep in hammocks made of cotton, suspended in the air, without any covering."²⁵ Again, in 1542, Oviedo observed their use and trade.²⁶ In 1598, Sir Walter Raleigh spoke about natives lying in hammocks and encountering places with "great

²² Smyth, *The Sailor's Word-book*, 363; Blomfield, "Hammocks and Their Accessories," 144; Leland P. Lovette, *Naval Customs, Traditions and Usage* (Annapolis: United States Naval Institute Press, 1934), 234.

²³ Christopher Columbus, *Personal Narrative of the First Voyage of Columbus to America: From a Manuscript Recently Discovered In Spain*, translated by Samuel Kettell (Boston: T. B. Wait and Son, 1827), 50, 73.

²⁴ Christopher Columbus, *Relaciones Y Cartas De Cristóbal Colón* (Madrid: Viuda de Hernando y Ca., 1892), 54.

²⁵ F. A. Ober, ed., *Amerigo Vespucci* (New York: Harper & Brothers, 1907), 181.

²⁶ Fernández de Oviedo, *Misfortunes and Shipwrecks*, 132.

stores of ... beds which they call hamacas.”²⁷ Throughout the sixteenth and seventeenth centuries, many explorers and sailors documented their observations of the use of hammocks among New World natives. As sailor after sailor witnessed the usefulness of the hammock, European exposure grew. Hammocks quickly became a coveted commodity among sailors.

In 1555 Cabeza de Vaca writes, “[The] officials had openly allowed all their friends and toadies and servants to run amok through all the towns and homesteads of the Indians, where they took women and young girls and hammocks and everything else the people had by force and without any kind of payment.”²⁸ Cabeza only lists hammocks and girls specifically, which clearly denotes the value he and the ‘friends, toadies, and servants’ placed on them. Sailors frequently traded with New World natives to obtain hammocks. Father du Tertre, in 1667, explains,

Our Frenchmen are so much sharper and shrewder than the Caribs that they easily deceive them. They never trade a hammock in the evening, for these good folk [the Caribs] know well that they have an immediate use for them and won't sell at any price; but in the morning they will sell cheaply, without a thought for the next night when they will need them just as much. When night falls they invariably come back, bringing whatever they have traded, and say that they can't sleep on the ground: and when they realize that they can't have their hammocks back, they are ready to shed bitter tears.²⁹

Another author observed a similar scene “when, on the approach of the evening, a Caribbee [sic] feels himself disposed to go to rest, no consideration will tempt him to sell his hammock. But, in the morning, when he is sallying out to the business or pastime of the day, he will part with it for

²⁷ Sir Walter Raleigh, *Discovery of the Large, Rich, and Beautiful Empire of Guiana, by Sir W. Raleigh: With a Relation of the Great and Golden City of Manoa (which the Spaniards call El Dorado)*, edited by Robert H. Schomburgk (London: Ashgate Publishing Ltd, 2010), 40, 65.

²⁸ Álvaro Núñez Cabeza de Vaca, *South American Expeditions, 1540-1545*, translated by Baker H. Morrow (Albuquerque: University of New Mexico Press, 2011), 172.

²⁹ Jean-Baptiste du Tertre, *Histoire Generale des Antilles*, volume 2 of 4 (Paris: 1667), 385 quoted from Davis, *American Sailing Ships*, 248.

the slightest toy that catches his fancy.”³⁰ In 1605, while in Guiana, John Nicholl, a sailor, explained how he and the other sailors would buy hammocks from New World natives. He told of how a native leader attempted to persuade his Captain to agree to an audience by promising "great store of victuals, and ... hammocks for [all] to sleep in....”³¹

As more and more sailors traveled to the New World, the rate of exposure to hammocks multiplied, and with every sailor who obtained a New World hammock and journeyed across the seas, so did the new tool multiply. Likely, as a sailor moved from ship to ship with his new souvenir, other sailors took notice and desired similar accommodations; and so, as sailors personally obtained and used hammocks, navies began to recognize their convenience and the improvements they facilitated in seamen’s health. Captain Nathaniel Boteler in 1685, and many others, pushed for their adoption, “the lodging of the common men in hammocks is far more wholesome and preferable.”³² In 1597, the first recorded supply of hammocks by the English navy took place in a “warrant authorizes payment for 30x3 bolts of canvas ‘to make hanging cabones or beddes ... for the better preservation of their health.’” Official use progressed slowly until the mid-1620’s; in 1624, a fleet of 3000 men received 300 hammocks.³³ Lord Wimbledon, on a voyage to “Spayne” in 1625, lamented, “Our soldiers had hamackes, and, now, here is none.”³⁴ A report, filed by Sir Henry Mervyn in 1628 on an expedition to invade France, complained “that there were no hammocks, and the men lodge on the bare decks ... their condition miserable beyond relation.” By 1629, the English navy supplied most over-sea vessels

³⁰ Robertson, *The History of the Discovery And Settlement of America* , 149.

³¹ Nicholl, "An Houre Glasse of Indian News," 54.

³² Boteler, *Boteler's Dialogues*, 257; Lloyd, *The British Seaman*, 68.

³³ Oppenheim, *A History of the Administration of the Royal Navy*, 134, 197, 198, 232, 235, 299.

³⁴ Blomfield, “Hammocks and Their Accessories,” 145.

with hammocks at the ratio of one for every two men, but still did not supply any for ships stationed locally. The distribution of hammocks by the British navy slowly increased, and by 1637 “the stores at Woolwich, Deptford, Chatham, Portsmouth and on board the ships in harbour [sic] comprised ... 2236 hammocks....”³⁵

Hammocks even became a staple on plantations in Barbados, and it is likely that Europeans brought hammocks with them when they colonized the island in 1627. They were so valued in Barbados that tax collectors often seized them for payment of debts.³⁶

Although the hammock was a standard issue item by the turn of the eighteenth century, their prominence aboard ships steadily grew throughout the sixteenth and seventeenth centuries.³⁷ Hammocks were not only a commodity, but also a necessity to be used as an alternative to unhealthy cabins, providing a removable, multifunctional tool that improved sleeping conditions aboard confined vessels subject to the pitch and yaw of the sea.

Alternative Spelling

Christopher Columbus’ contact with the New World exposed Europeans to hammocks for the first time. On November 3, 1492, shortly after his landfall in what is now Cuba, he commented in his journal, “Great numbers of canoes came to the ships this day for the purpose of bartering their cotton, and nets or hammocs on which they sleep.”³⁸ This is the first recorded use of the word, and as it was not already part of the Spanish language, it is probable that Christopher Columbus parroted the native word he heard: *hamacas*. Scholars believe the word is

³⁵ Oppenheim, *A History of the Administration of the Royal Navy*, 232, 235, 299.

³⁶ Handler, “Aspects of Amerindian Ethnography,” 64, 66.

³⁷ *Ibid*; Lavery, *Royal Tars*, 49.

³⁸ Columbus, *Personal Narrative*, 73.

of Taíno origin.³⁹ Little is known about how the use and popularity of hammocks spread from ship to ship during the sixteenth century. One can imagine how the men exposed to hammocks in the West Indies took the new tool with them as they transferred from ship to ship, as sailors usually did, exposing even more men to their usefulness.

One possible explanation for the lack of documented use of hammocks may be due to the adaptation of the word itself, first beginning with hamaca and ending with hammock. Many variations on the spelling exist; a long list includes: amack, hamac(s),⁴⁰ hamaca(s),⁴¹ hamaco, hamacoes, hammoc(s),⁴² hammaco, hammacoe(s),⁴³ hamack,⁴⁴ hamacke(s),⁴⁵ hammackoes,

³⁹ Columbus, *Relaciones Y Cartas De Cristóbal Colón*, 54; Keegan and Carlson, *Talking Taino*, 31, 34.

⁴⁰ Smyth, *The Sailor's Word-book*, 363-364.

⁴¹ Raleigh, *Discovery of the Large, Rich, and Beautiful Empire of Guiana*, 40, 65.

⁴² Abel Bowen, *The Naval Monument: Containing Official And Other Accounts of All Battles Fought Between the Navies of the United States And Great Britain During the Late War* (New York: Navis & Cornish, 1837), 21; W. R. Chetwood, *The Voyages And Adventures of Captain Robert Boyle, In Several Parts of the World: Intermixed With the Story of Mrs Villars, an English Lady, With Whom He Made His Surprising Escape From Barbary. Likewise Including the History of an Italian Captive, And the Life of Don Pedro Aquilio* (Edinburgh: Alex. M'Caslan, 1773), 158; Chisholm, *A Manual of the Climate And Diseases*, 212; William Falconer, *An Universal Dictionary of the Marine: or, A Copious Explanation of the Technical Terms and Phrases Employed in the Construction, Equipment, Furniture, Machinery, Movements, and Military Operations of a Ship* (London: T. Cadell, 1784); Edmond Fanning, *Voyages Round the World: With Selected Sketches of Voyages to the South Seas, North And South Pacific Oceans, China, Etc.* (New York: Collins and Hannay, 1833), 281, 276; Julius Fröbel, *Seven Years' Travel In Central America, Northern Mexico, And the Far West of the United States* (London: R. Bentley, 1859), 33; G. Simon Friedrich Pfeiffer, *The Voyages And Five Years' Captivity In Algiers, of Doctor G.S.F. Pfeiffer: With an Appendix, Giving a True Description of the Customs, Manners, And Habits of the Different Inhabitants of the County of Algiers*, translated by I. Daniel Rupp (Harrisburg, Pennsylvania: J. Winebrenner, 1836), 276; Pons, *Travels In South America*, 316, 380; Robert Robertson, *Observations On the Jail, Hospital Or Ship Fever* (London: J. Murray, 1783), 64, 124, 172; Robertson, *The History of the Discovery And Settlement of America*, 173; Alexis Rochon, *A Voyage to Madagascar And the East Indies* (London: G. G. J. and J. Robinson, 1792), 267; Gavriil Andreevich Sarychev, *Account of a Voyage of Discovery to the North-east of Siberia: the Frozen Ocean, And the North-east Sea* (London: J. G. Barnard, 1806), 61; Moses Severance, *The American Manual, Or, New English Reader: Consisting of Exercises In Reading And Speaking, Both In Prose And Poetry; Selected From the Best Writers. To Which Are Added, a Succinct History of the Colonies, From the Discovery of North America to the Close of the War of the Revolution; the Declaration of Independence, the Constitution of the United States, And of the State of New York. For the Use of Schools* (Bath, New York: R.L. Underhill and Company, 1840), 142; Robert Simmons, *The Seagunner's Vade-mecum: Being a New Introduction to Practical Gunnery, Expressly Accommodated to the Use of the Royal Navy, &c. And Including the Rules of Decimal Arithmetic, So Much of Practical Geometry As May Be Required In the Art ... And a Variety of Information With Instructions Useful to Gunners, Both At Sea And On-shore* (London: Steel and Company, 1812), 142-143.

hammocs, Brazil beds, brasill beds, hanging cabbons, cabones, cabbens,⁴⁶ beddes, and swining beds or bedsteads.⁴⁷ It seems geographical location or personal choice dictated spelling; furthermore, no regulatory body existed to standardize and control spelling. These factors are most likely why the contemporary spelling of hammocks was not the universal English spelling until roughly 1850. In fact, the authors of several primary sources use both hammock and alternative spellings in the same document, such as Edmund Fanning's 1833 *Voyages Round the*

⁴³ Thomas Riley Blanckley, *A Naval Expositor: Shewing And Explaining the Words And Terms of Art Belonging to the Parts, Qualities, And Proportions of Building, Rigging, Furnishing, & Fitting a Ship for Sea. Also All Species That Are Received Into the Magazines And On What Services They Are Used And Issued. Together With the Titles of All the Inferior Officers Belonging to a Ship With an Abridgment of Their Respective Duties* (London: E. Owen, 1750), 69, 109; Great Britain, Privy Council, *Regulations and Instructions Relating to His Majesty's Service at Sea: Established by His Majesty in Council* (London: 1757), 55, 98, 198, 222; Great Britain, Royal Commission on Historical Manuscripts, *Report on the Manuscripts of Lady Du Cane* (London: B. Johnson and Company, 1905), 40-41; James Greenwood, *The Sailor's Sea-book: Rudimentary Treatise On Navigation* (London: J. Weale, 1850), 123; T. Sturges Jackson, *Logs of the Great Sea Fights, 1794-1805* (London: Navy Records Society, 1899), 62-63; John Newbery, *The News-Readers Pocket-Book, or, A military dictionary: explaining the most difficult terms made use of in fortification, gunnery, and the whole compass of the military art: and a naval dictionary; explaining the terms used in navigation, ship-building, &c.: to which is added, a political history of Europe: with the genealogies and families of the several emperors, kings, and princes, now reigning; and some account of the religions they profess* (London: Bible and Sun in St. Paul's Church-Yard, 1759), 80; Smyth, *The Sailor's Word-book*, 363-364; David Steel, *The Elements and Practice of Naval Architecture; Or: A Treatise on Ship-building, Theoretical and Practical, on the Best Principles Established in Great Britain. With Copious Tables of Dimensions, &c. Illustrated with a Series of Thirty-nine Large Draughts* (London: Steel and Company, 1812); Robert Robertson, *Synopsis Morborum: A Summary View of Observations On the Principal Diseases Incident to Seamen Or Soldiers, Whether Engaged In Actual Service Or Retired From It, Carefully Abridged And Digested, From the Latest Ed. of the Author's Works, In Four Volumes. Designed Chiefly for the Use of Professional Practitioners In the Navy And Army. In Two Volumes* (London: Cadell and Davies, 1810), 320; Robert Tomlinson, *A Plan for a Practicable, Easy, and Constitutional Method, of Manning the Royal Navy: upon any emergency, without the usual mode of impressing seamen; rendered intelligible to those who are unacquainted with maritime affairs; illustrated by several tables, calculated to explain the whole. And most humbly submitted to the consideration of the ministry and of the legislature* (London: J. W. Pasham, 1774), 16.

⁴⁴ Edwards, *The History, Civil And Commercial, of the British Colonies*, 50-51, 56; Edmund Miles, *An Epitome, Historical And Statistical, Descriptive of the Royal Naval Service of England* (London: Ackermann, 1841), 50.

⁴⁵ Charles II Sovereign of England and Wales and Edward Hyde Earl of Clarendon, *Notes Which Passed At Meetings of the Privy Council Between Charles II And the Earl of Clarendon, 1660-1667, Together With a Few Letters, Reproduced In Facsimile From the Originals In the Bodleian Library*, edited by William Dunn Macray (London: Nichols, 1896), 63; John Smith, *Capt. John Smith, of Willoughby by Alford, Lincolnshire: President of Virginia, And Admiral of New England, Works, 1608-1631*, edited by Edward Arber (Birmingham: Edward Arber, 1884), 793.

⁴⁶ Smith, *Capt. John Smith*, 737, 792.

⁴⁷ Charles Nordhoff, *Man-of-war Life: A Boy's Experience in the United States Navy, During a Voyage Around the World, in a Ship of the Line* (Cincinnati: Moore, Wilstach, Keys and Company, 1856), 22, 76; Blomfield, "Hammocks and Their Accessories," 144-147.

World: With Selected Sketches of Voyages to the South Seas, North And South Pacific Oceans, China, Etc, in which he uses two spelling variations: hammocks and hammocs.⁴⁸ Likewise, in many collections of primary documents written about the same event, different authors use alternative spellings. The variation of the word might be due to regional slang. One source, *Logs of the Great Sea Fights, 1794-1805*, compiles several ships logs and letters from vessels involved in various battles. One captain uses “hammacoes” while others use “hammocks.” Furthermore, numerous dictionaries and handbooks indicate multiple spellings, such as Smyth’s 1867 *The Sailor’s Word-book: an Alphabetical Digest of Nautical Terms, Including Some More Especially Military And Scientific*, which lists hammock, hamacs, hammacs, and hammacoes as used terminologies for hammock.⁴⁹ Additionally, when consulting primary sources, it must be recognized that many have been translated from their original language into English. As John Frye explains in the introduction to his translation of Eugenio de Salazar’s collection of letters from 1573, “[People] will realize, above all, the idiomatic difficulties of this kind of translation....”⁵⁰ By this rationalization, the time period, location, and education of the translator would directly influence spelling. For example, there are many translations of Christopher Columbus’ journal; in Samuel Kettell’s 1827 translation, he translates the original Spanish into hammocs, while in Van Wyck Brooks’ 1924 translation he uses the contemporary spelling.⁵¹

⁴⁸ Fanning, *Voyages Round the World*, 216, 276, 281; Fröbel, *Seven Years’ Travel*, 12, 33, 67; Pons, *Travels In South America*, 217, 230, 273, 316, 380; Robertson, *Observations On the Jail, Hospital Or Ship Fever*, 57, 58, 64, 124, 172; Robertson, *Synopsis Morborum*, 50, 89, 320; Robertson, *The History of the Discovery And Settlement of America*, 149, 173; Simmons, *The Sea-gunner’s Vade-mecum*, 142-143,178.

⁴⁹ Jackson, *Logs of the Great Sea Fights*, 62-63, 153-154, 287, 327; Bowen, *The Naval Monument*, 21, 81; Great Britain, Royal Commission on Historical Manuscripts, *Report on the Manuscripts*, 40-41, 63; Smyth, *The Sailor’s Word-book*, 363-364.

⁵⁰ John Frye, *Seafaring in the Sixteenth Century: Letters of Eugenio de Salazar, 1573*, (San Francisco: Mellen Research University Press, 1991), 21.

⁵¹ Columbus, *Personal Narrative*, 73; Columbus, *Journal of First Voyage to America*, translated by Van Wyck Brooks (Freeport, New York: Books for Libraries Press, 1924), 59.

Many of the aforementioned terms can be found in primary literature; however, several authors indicate that the most common early terminology was “hammacoes.”⁵² This variation of the word, however, does not seem to be utilized as frequently as these authors infer. Of the sources available, only a dozen or so primary sources used “hammacoes.” Furthermore, the secondary literature indicates that the use of “hammacoes” was most common during the seventeenth and eighteenth centuries; however, the primary sources obtained have a far later range of 1744 to 1867. Additionally, research shows the spelling “hammocs” used more frequently, and yet again, it was in the same later time frame as hammacoes, rather than shortly after discovery.

Other Nations and Language Barriers

Although the hammock was a standard issue item by 1628 for English vessels traveling overseas, it seems French sailors individually obtained hammocks. In the mid-seventeenth century Father du Tertre's, who witnessed sailors earnestly trading items for hammocks, described hammocks as the only Carib product coveted by the Europeans. Despite Spain having the first contact with hammocks, there are seemingly few sources describing Spain's adoption of hammocks, possibly for good reason. In his research about Spanish shipboard life, Pablo Perez-Mallaína remarks that he could only find one reference to the use of a hammock and that all the other references to sleeping conditions spoke of cots and mattresses. This may be due, again, to a

⁵² Lloyd, *The British Seaman*, 68; Lavery, *The Arming and Fitting of English Ships of War*, 179; W. Vernon Anson, *The Life of John Jervis Admiral Lord St. Vincent* (London: J. Murray, 1913), 117; John Bathurst Deane, *The Life of Richard Deane, Major-general And General-at-sea In the Service of the Commonwealth* (London: Longmans, Green, and Company, 1870), 630-631; Arthur N. Gilbert, "Buggery and the British Navy, 1700-1861," *Journal of Social History* 10, no. 1 (Autumn 1976), 74; G. Hinchliffe, "Some Letters of Sir John Norris," *The Mariner's Mirror* 56, no.1 (1970), 78; Benerson Little, *The Buccaneer's Realm: Pirate Life on the Spanish Main, 1674-1688* (Washington D.C.: Potomac Books, Inc., 2007), 16-17; A. B. McLeod, *British Naval Captains of the Seven Years' War: The View from the Quarterdeck* (Suffolk, England: Boydell Press, 2012), 93.

language issue or a lack of distinguishing vocabulary. It seems the eighteenth century use of the Spanish word “coy” referred to all bedding, including mattresses, cots, and hammocks, although the contemporary use of the word refers specifically to “cot.” This is clear in the image below (figure 3), which is a depiction of a sailor’s outfit during the eighteenth century professionalization of the Spanish Navy. The image depicts items that look like a hammock, mattress, and cot, all labeled as “coy.” A simple lack of distinguishing vocabulary could be the reason for the unclear level of use; or, as Pablo Pérez suggests, Spanish sailors may have preferred “a small mattress to lie on, and in many cases, only the night sky as a roof for their dreams.”⁵³

The adoption and spread of hammocks within French vessels, is even more difficult to track and discern. Some translations of early French works use the contemporary spelling for hammock, yet others use hammoc or hamack. Historians seem to agree that the most utilized French terminology was hamack and branle.⁵⁴ The issue with the latter is that it most commonly refers to movement, therefore, it makes it challenging to identify hammocks by this terminology in early writings. Furthermore, without a strong working knowledge of written French, finding original documents with the term hamack or any other is a daunting task. The Dutch seem to have adopted a fairly universal language for hammocks early on, using hangmak, hangmat or hangmatten. Although they had standardized words, it is unclear to what extent they adopted and used them aboard ships, illustrated by the identification of bunks aboard Dutch vessels by several

⁵³ Pérez-Mallaína, *Spain's Men of the Sea*, 137-138.

⁵⁴ Kenneth J. Banks, *Chasing Empire across the Sea: Communications and the State in the French Atlantic, 1713-1763* (Montreal: McGill-Queen’s University Press, 2002), 65; K.G. Davies, *Europe and the World in the Age of Expansion: North Atlantic World in the Seventeenth Century* (Minneapolis: University of Minnesota Press, 1974), 248; Pons, *Travels In South America*, 316, 380; Charles Duke Yonge, *The History of the British Navy: From the Earliest Period to the Present Time*, 2nd edition (London: R. Bentley, 1866), 521; Edwards, *The History, Civil And Commercial, of the British Colonies*, 50-51, 56; Blomfield, “Hammocks and Their Accessories,” 147; Falconer, *An Universal Dictionary of the Marine*.

authors.⁵⁵ Searching any of the Dutch terminology generates a plethora of sources; however, again without a working knowledge of the language, evaluation of them for this thesis is not possible. This is one area for future research. Ironically, despite Spanish discovery of the hammock and the prominence of early Dutch trade, the English recorded the majority of information about the utilization and adaptation of the hammock.

Wide Spread Adoption and Uses by Europeans

As the sixteenth and seventeenth centuries progressed, so did the spread and use of hammocks. More and more officials acknowledged their benefits. The first official record of their use in the British navy came in 1597 in the form of a payment for bolts of canvas for the specific purpose of making hammocks. In 1624, the British navy supplied 300 hammocks to a fleet of 3000 men. The next year, the British navy recorded the cost to produce a hammock as two shillings. Captain Sir Henry Mervyn lodged a complaint in 1628 because he had no hammocks for his men, implying they were becoming an expected item. Later that year, the Duke of Buckingham ordered hammocks used as bulwarks if ships encountered the enemy at sea. This is the first indication that hammocks were becoming so common and abundant that they became a multi-functioning tool, by providing additional protection during battle. The following year, the British navy officially supplied one hammock for every two men on ships in over-seas service. In 1637, the number of hammocks in the English naval storehouses and on ships in port totaled 2,236, and by 1647, the cost of a hammock rose to two shillings and seven pence. The use

⁵⁵ Blomfield, "Hammocks and Their Accessories," 147; Jaap R. Bruijn, *Commanders of Dutch East India Ships in the Eighteenth Century* (Boydell Press, 2011), 229-230; Joost C. A. Schokkenbroek, *Trying Out: An Anatomy of Dutch Whaling and Sealing in the Nineteenth Century, 1815-1885* (Amsterdam: Amsterdam University Press, 2008), 199.

of hammocks continued to increase, and in 1665, the British Royal Navy contracted the manufacture of thousands of hammocks in preparation for the second Dutch War.⁵⁶

When hammocks became an official tool across the entire British Royal Navy is debatable. It did not happen by an absolute decree or a complete, synchronized transition. Brian Lavery believes that a report in the 1673 Admiralty commission recording the statements of King Charles II marks the final transition. Lavery cites,

King Charles II ... became concerned about ‘the very great charge and many other inconveniences rising by the unlimited number of cabins on ships’. These caused ‘the pestering of the ship’ and ‘contracting of sickness’, causing officers to ‘neglect their duties and mis-spend their time in drinking and debauchery’, and ‘the danger of fire’. Furthermore, it was ‘a charge not in any degree allowed in French or Dutch ships.’⁵⁷

Although this does not constitute an official declaration or wide sweeping order of the complete transition of all Royal Navy vessels to the use of hammocks, it is not a far leap that if the King is ridiculing the use of cabins and their ill effects, that he may declare the switch to the alternative solution of hammocks.

Another author, Peter Erik Flynn, in his PhD dissertation “HMS *Pallas*: Historical Reconstruction of an 18th-century Royal Navy Frigate,” cites that in “1746 the Navy Board ordered that all ships be fitted with hammock cranes—a framework of U-shaped, wrought iron brackets mounted along the top of the rail.” He believes that this order, which covered the storage solution for hammocks, meant this also marked the official and complete adoption of hammocks across the entire Royal Navy.⁵⁸ Although this does not constitute an official statute of

⁵⁶ Oppenheim, *A History of the Administration of the Royal Navy*, 134, 197, 198, 232, 235, 299, 301; Blomfield, “Hammocks and Their Accessories,” 145; Lavery, *Royal Tars*, 101.

⁵⁷ Lavery, *The Arming and Fitting of English Ships of War*, 155.

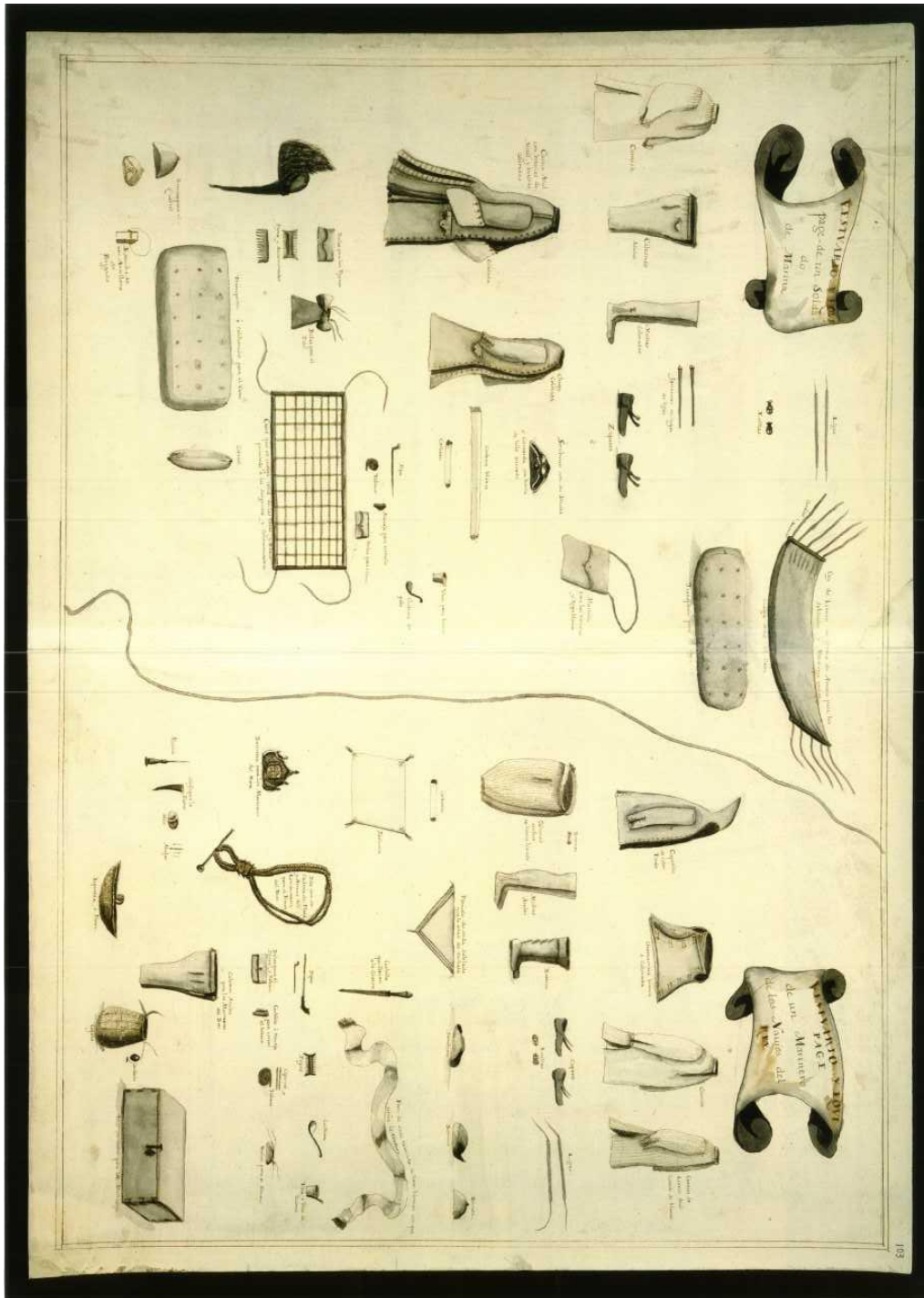
⁵⁸ Peter Erik Flynn, “HMS *Pallas*: Historical Reconstruction of an 18th-century Royal Navy Frigate,” PhD diss., Texas A&M University, 2006, 103.

the complete regulation use of hammocks, it is fair to say that there would be little reason to outfit all vessels with a storage solution for hammocks if they did not have the need to store hammocks.

Although no exact date or declaration pinpointing the complete immersion of hammocks into the Royal Navy seems to exist, it is a reasonable conclusion that by 1746 their wide spread use was almost or completely official, although, there are some indications that even in 1822 not all vessels employed hammocks. Colin Chisholm, in his *Manual of Climate and Disease*, urges the use of hammocks rather than berths. Nevertheless, based on the abundance of documentation by sailors, the hammock was a standard naval tool by the turn of the nineteenth century; so much so, that the hammock had become synonymous with sailors. Since the mid-seventeenth century, impressment in the Royal Navy was an all too common occurrence; that is to say the action of, in one deceptive way or another, forcing a man to serve in the navy against his will. In a novel written in 1798, a group of men abduct and press the main character into service. The men who press the main character believe he is a sailor because he sleeps in a hammock and climbs in and out of it with ease. He argues that his choice in beds is due to poverty rather than life choices or sailing experience. No one believes him because hammocks are seen as a sailor's way of life. Hammocks were so typical that a sailor stated in his journal, about his travels in South America in 1816, "These [hammocks] ingenious contrivances are now so well known in England that little description is needed."⁵⁹

⁵⁹ Chisholm, *A Manual of the Climate And Diseases*, 13; *Henry Willoughby: A Novel* (London: G. Kearsley, 1798), 133 quoted from Daniel James Ennis, *Enter the Press-Gang: Naval Impressment in Eighteenth-Century British Literature* (Newark: University of Delaware Press, 2002), 71; Waterton, *Wanderings In South America*, 418.

Figure 3. Spanish “Coy.” Possibly depicting hammock, mattress, or cot. Spain, Sixteenth Century.



Source: *Álbum del Marqués de la Victoria*, (Madrid: Museo Naval y Lunweg Editores, 1995), 103.

Likewise, there is no exact date when hammocks fully permeated the United States Navy. Given their considerable use among British ships, however, it is possible that hammocks were a regulation item from the beginning of the development of the United States Navy. Due to various language barriers and difficulties, this thesis is unable to evaluate at what rate the French and Dutch Navies adopted hammocks, or if they ever became a standard issue item; however, it seems likely these nations widely used hammocks, as early as British vessels. King Charles II statement in 1673 about those nations not permitting cabins aboard ships and by various sources referencing the use of hammocks aboard French and Dutch vessels supports this theory. Likewise, it is reasonable to deduce that Russian ships used hammocks to some extent. William Don speaks about his “kit ... the hammock, a mattress, pillow, sheets and blankets,” although he also remarks on how other vessels employed bunks. In another Russian journal, a captain explains how during a violent storm, most of his vessel’s sails were torn, to preserve the remaining from damage, he ordered them taken in. In order to stabilize the ship and keep it to the wind during the storm, he strung up several hammocks.⁶⁰

Spain, ironically the nation that had first contact with hammocks, is the country that provides the most difficulty in evaluating the level and rate of adoption of the hammock. A simple lack of distinguishing vocabulary may be the reason for the unclear level of use; however, this grey vocabulary makes it impossible to know.

What is clear is that by the turn of the nineteenth century hammocks were a standard issue item among British and American naval vessels, and quite possibly on French, Dutch,

⁶⁰ Lavery, *The Arming and Fitting of English Ships of War*, 155; Yonge, *The History of the British Navy*, 521; O. F. Mentzel, *Life At the Cape In Mid-eighteenth Century: Being the Biography of Rudolf Siegfried Allemann, Captain of the Military Forces And Commander of the Castle In the Service of the Dutch East India Company At the Cape of Good Hope*, translated by Margaret Greenlees (Cape Town: The Van Riebeeck Society, 1919), 21; William G. Don, *Reminiscences of the Baltic Fleet of 1855* (Brechtin: D.H. Edwards, 1894), 20, 23; T. Bellingshausen, *Voyage of Captain Bellingshausen to the Antarctic Seas, 1819-1821, Volume 1*, Frank Debenham, ed., translated from the Russian (Farnham, Great Britain: Hakluyt Society, 2011), 152.

Spanish, and Russian ships. As such, they quickly became a part of daily life aboard vessels, acting as a multi-functioning tool, helping to impact and shape maritime culture.

Chapter 2

Effect of Hammocks on Ships

21st July 1767. ... the Carpenter came and tould me every cleat in the Ship was drawen, and all the Nails carryed off. At same time the Boatswain informed me that the most of the hammock nails was drawen, and two thirds of the men oblidge to lie on the Deck for want of nails to hang their Hammocks, I immediately stopt the liberty men, and Calld all hands, and let them know that no man in the Ship should have Liberty to go Ashoar untill they informed me who drawd the nails and cleats, and let me know what use they made of them but not one would Acknowledge, that they knowd any thing about drawing the Nails and Cleats, but all said they knowd what use they went to. Then some of the Young Gentlemen tould me, that all the Liberty men carryed on a trade with the Young Girls, who hade now rose their price for some Days past, from a twenty or thirty penny nail, to a forty penny, and some was so Extravagant as to demand a Seven or nine Inch Spick, this was a plain proof of the way the large nails went.

-George Robertson

The use of hammocks aboard maritime vessels quickly became a useful tool by 1597, helping to mold various parts of vessels and shipboard life. As Christopher Columbus sailed to the New World, naval power was growing throughout Europe. The discovery of the new, prosperous lands jumpstarted the race to rule the oceans and the lands beyond. Competition was rarely peaceful and navy ships rapidly evolved to carry heavy armament. Hammocks facilitated the growing crews it took to operate the extensive artillery. The introduction of the new tool thus caused various changes to shipboard life, including the bedding associated with hammocks, the construction and hardware below deck to sling the hammocks, and the means it took to outfit the ships.

Number of Men

Christopher Columbus' journey to the New World marked the beginning of a new era of transatlantic discovery. Prior to 1492, ships had been much smaller and designed to stay as close as possible to shore. The biggest and best ships of the fifteenth century were equivalent to a sixth rate ship of the line one hundred and fifty years later. On his first voyage, Christopher Columbus sailed in a fleet of three vessels, the flagship *Santa Maria* crewed by 40 men and the other two, the *Niña* and the *Pinta*, by 25 sailors each. In 1514 and 1543, Oviedo reported crew numbers at 25 and 30, respectively. Then in 1555, crew size shot up to an average of 100 men on the largest ships.⁶¹ Some fifty-three years after Columbus' expedition marked the beginning of rapidly increasing crew sizes.

As the race to claim lands in the New World ignited, so too did the need for ships that could transport and defend the men tasked with discovering, claiming, and colonizing unfamiliar territories. As the years passed, the competition became bloodier, leading to increased armament and additional sailors to operate them. The adoption of hammocks aboard maritime vessels did not cause the growth in crew size. It did, however, facilitate the expansion. In 1540, Cabeza de Vaca, by order of the Spanish government, prepared four ships crewed by 400 men for a South America expedition. The average crew size increased again eighty-five years later, when the English naval forces began to use hammocks; a fleet of twelve men-of-war consisted of 3000 sailors, averaging 250 men per vessel.⁶²

⁶¹ Parry, *The Age of Reconnaissance*, 70; Fernández de Oviedo, *Misfortunes and Shipwrecks*, 14, 152; Cabeza de Vaca, *South American Expeditions*, 1-2.

⁶² Cabeza de Vaca, *South American Expeditions*, 1-2; Oppenheim, *A History of the Administration of the Royal Navy*, 197-198; Britain, Navy Royal, *The True List of His Majesties Navie Royall, and Merchants Ships, their Names, Captaines and Lieutenants, their men, and Burthens in every one, now setting forth for the guard of the Narrow Sea, and for Ireland, this Year, 1642* (London: John Thomas, 1642); Britain, Navy Royal, *A List of such of the Navy Royall, as also of the Merchant Ships as are set forth to Sea for this Summers Expedition 1642, in Service*

By 1666, the British Royal Navy began a rating system for their various men-of-war, ranging from sixth to first-rate ships of the line; each rating group had a set number of men. At that time, the number of men ranged from 100 men on a sixth rate ship to 800 men on a first rate vessel. A sixth rate ship was roughly four times larger than the *Santa Maria* with two and a half times the men. This increase in crew size coincided with the navy outfitting vessels engaged in the first Dutch War in 1652 to 1654 with thousands of hammocks. Over the course of the next two hundred years, ship crews did not change extensively. The number of men rose to 850 in 1745, 875 in 1806, and 970 in 1848 on the largest first rate ships. Likewise, the crews on the smallest sixth rate ships remained consistent between 100 and 120 men. Although the number of sailors remained the same, the ratio did not because the tonnage and size of ships increased over time. This indicates that the number of men aboard a vessel directly related to the number of guns.⁶³

Likewise, after the spread of hammocks aboard maritime ships, the crews of merchant and exploration vessels grew up to 120 men. Not all non-military ships used hammocks; many merchant vessels reported crews as small as 12 sailors, employing bunks. Several larger ships did, however, such as the HMS *Dolphin*, which was equivalent to a sixth rate ship, on her 1766 voyage to Tahiti, which carried 120 men in hammocks.⁶⁴

of the King and Parliament; Together with their Names, Captains, Burthens, number of Men, and Ordnance in every Ship (London: Laurence Blaiklock, 1642).

⁶³ Britain, Navy Royal, *A List of the Ships Belonging to His Majesties Navy-Royal; With the Number of Men and Guns; And the dividing of the into Tree Squadrons* (London: G. Horton, 1666); Lavery, *Royal Tars*, 101; David Lyons, *The Sailing Navy List: All the Ships of the Royal Navy, Built, Purchased and Captured, 1688-1869* (London: Conway Maritime Press, 1993), 17-29, 33-37, 62-80, 104-115, 170-177; Tomlinson, *A Plan for a Practicable, Easy, and Constitutional Method*, 16.

⁶⁴ Britain, Navy Royal, *The True List of His Majesties Navie Royall*; Britain, Navy Royal, *A List of such of the Navy Royall*; George Robertson, *Discovery of Tahiti, A Journal of the Second Voyage of HMS Dolphin Round the World*,

After the United States gained independence, it began forming a working navy fueled by the knowledge acquired from the Royal Navy, although it was not an official body until 1798. Unlike the Royal Navy, however, the United States Navy was not as uniform in the number of men in a crew relative to the classification of the vessel, especially in the beginning, and employed fewer sailors per ship. During the age of sail, the United States Navy rated their men-of-war based on the number of guns, the highest being 74 and the lowest 12. In 1776, crew size ranged from 80 to 626, and varied greatly. For example, one 32-gun ship employed 180 men, while another carried 550. By 1800, the number of sailors aboard vessels became more standardized and consistent until the end of sail, averaging 820 men on the largest 74-gun vessels and 200 men on the smaller 20 and 18-gun ships.⁶⁵

By 1886, the introduction of battleships forced another change in crew size. The number of men swelled up to 1000 sailors by 1900, and 2000 by 1938. Although the overall number of men spiked, it actually decreased in ratio to size and tonnage of the vessels. During the age of sail the largest recorded tonnage of any naval tonnage was just over thirty-two hundred tons carrying 1100 men; whereas, a battleship employing the same number of men weighed thirty-two thousand tons. Although sailors still slept in hammocks, the rapidly increasing space eventually led to the use of bunks during the early to mid nineteenth century.⁶⁶

under the Command of Captain Wallis, R.N.: In the Years 1766, 1767, and 1768, edited by Hugh Carrington (London: Hakluyt Society, 2011), xxxiv-xxxv.

⁶⁵ K. Jack Bauer, *Ships of the Navy, 1775-1969* (Troy, New York: Rensselaer Polytechnic Institute, 1970), 3-31, 106-109; Paul H. Silverstone, *The Sailing Navy, 1775-1854* (Annapolis: Naval Institute Press, 2001), 2-13, 23-44.

⁶⁶ Bauer, *Ships of the Navy, 1775-1969*, 3-31, 106-109; *The History of a Ship From Her Cradle to Her Grave, With a Short Account of Modern Steamships & Torpedoes* (London: G. Routledge and Sons, 1882), 100; W. M James, *The Royal Navy Officer's Jutland Pocket-Manual 1916*, edited by Brian Lavery (Oxford: The Pool of London Press, 2016), 64.

Even though hammocks did not directly cause the increase of crew size, their adoption facilitated the needed growth as the expansion of the Western World unfolded and navies vied for control by increasing their firepower. Thus, begging the question: Would or could have warships grown as fast and as big as they did without hammocks solving the housing crisis as the number of men it took to operate the warships dramatically increased?

Materials and Bedding

Prior to 1492, sailors had minimal bedding, if any at all. What they did have was self-provided and consisted of no more than a “narrow cushion, a folded sheet, a small blanket, and ... a small pillow.”⁶⁷ If a sailor was unable or unwilling to obtain personal sleeping materials, the bare deck, or possibly a pile of ropes, became his resting place. One captain, in 1513, described the latter as a “cable mattress.”⁶⁸ Most sleeping pads were little more than a bag or sack stuffed with straw. Beds and cots were practically unknown aboard ships, only used by high-ranking officers or notable passengers.⁶⁹ Sailors could place their sleeping items on the deck, in the hold, or if they were lucky, under the forecabin or shelter deck. Many vessels had a bare, open deck, with no cover to speak of, such as rowing vessels. In most cases the ships were too small compared to the number aboard to fully accommodate them all when horizontal.⁷⁰

In the mid fifteenth century, forecabin doubled as a fighting platform and sleeping shelter. This idea began to grow and evolve. Soon, multiple small coffin-like cabins occupied

⁶⁷ Guevara, *De Muchos Trabajos que se Pasan en las Galeras*, 1539 quoted from Pérez-Mallaína, *Spain's Men of the Sea*, 137; Benerson Little, *The Buccaneer's Realm*, 16-17.

⁶⁸ Oppenheim, *A History of the Administration of the Royal Navy*, 15.

⁶⁹ Pérez-Mallaína, *Spain's Men of the Sea*, 83-84, 137.

⁷⁰ Guevara, *De Muchos Trabajos que se Pasan en las Galeras*, 1539 quoted from Pérez-Mallaína, *Spain's Men of the Sea*, 137.

considerable portions of the forecastles.⁷¹ Merely rudimentary protection from the elements and designated sleeping areas, these cabins, described as “sluttish dens” and “nasty holes,” offered no new or additional sleeping materials; rather, a sailor took whatever meager coverings or straw mats they had and placed them in the sleeping boxes.⁷²

When Columbus and his men sailed to the New World in 1492, they encountered hammocks used by native islanders, most likely in the Bahamas, made from fibers of such plants as cassava, agave, tree bark, and cotton. Given the area of islands they first landed on, most of the hammocks were likely made of cotton. Sailors described them as closely resembling tightly woven nets rather than a solid piece of fabric.⁷³ As Charles Waterton explained in 1816,

They are sometimes formed of silk-grass fibre, and sometimes of cotton, the latter being the more pliant, and the former the more lasting. The best hammocks are not formed like nets, and knotted, but the strings are intertwined so that they adapt themselves to every movement of the body.⁷⁴

Hammock Material

The first record of purpose-made hammocks was for a British naval vessel in 1597, when a naval warrant authorized “payment for 30x3 bolts of canvas to make hanging cabones or beddes ... for the better preservation of their health.”⁷⁵ This is evidence that the English chose the production of specific lengths of canvas for the sole function of making hammocks for its

⁷¹ Oppenheim, *A History of the Administration of the Royal Navy*, 15, 125; John Smith, *The Sea-Mans Grammar and Dictionary: Explaining all the Difficult Terms in Navigation: And the Practical Navigation and Gunner: In Two Parts* (London: Randal Taylor, 1691), 38.

⁷² Oppenheim, *A History of the Administration of the Royal Navy*, 127; Lavery, *The Arming and Fitting of English Ships of War*, 155; Lavery, *Royal Tars*, 49; Lloyd, *The British Seaman*, 68.

⁷³ Loven, *Origins of the Tainan Culture*, 27, 457, 458; Keegan and Carlson, *Talking Taino*, 34.

⁷⁴ Waterton, *Wanderings In South America*, 418-419.

⁷⁵ Oppenheim, *A History of the Administration of the Royal Navy*, 134.

naval forces rather than using materials of conveyance. From 1492 until 1597, however, there is no record of the manufacture of hammocks, or material for the creation of hammocks. Cabeza de Vaca and Father du Tertre both observed sailors willing to steal and deceive to obtain New World hammocks. Even New World natives recognized Europeans' desire for hammocks and tried to bribe captains with enough hammocks for their entire crew.⁷⁶

For the first hundred years of European hammock use, then, there may have been limited options for a sailor to acquire a hammock. Several documents prove sailors procured cotton woven hammocks from New World natives. Others may have attempted rudimentary versions with knotted ropes, as Charles Waterton's statement may imply; however, no evidence directly supports this. One might also deduce that sailors used portions of old, discarded sails, also made from canvas, to fashion a prototype of what would become the official Royal Navy design; as David Blackmore states in his maritime dictionary, "Until well into the 19th century, they were made from the heavy brown canvas of damaged sails."⁷⁷ This, however, also lacks evidence.

Official naval production of hammocks was sporadic, with slow growing momentum until the later seventeenth century. Beginning in 1597 and continuing until the hammock's replacement by bunks, however, all navies used the same material to make hammocks: thick canvas made of hemp or cotton.⁷⁸

⁷⁶ Cabeza de Vaca, *South American Expeditions*, 172; Tertre, *Histoire Generale des Antilles*, 385 quoted from Davis, *American Sailing Ships*, 248; Nicholl, "An Hour Glasse of Indian News," 54.

⁷⁷ Waterton, *Wanderings In South America*, 418-419; Blackmore, *The Seafaring Dictionary*, 146.

⁷⁸ George Jones, *Sketches of Naval Life With Notices of Men, Manners And Scenery On the Shores of the Mediterranean In a Series of Letters From the Brandywine And Constitution Frigates*, 2 Volumes (New Haven: H. Howe, 1829), 12; Mentzel, *Life At the Cape In Mid-eighteenth Century*, 21; Theodorus B. M. Mason, *The Preservation of Life At Sea: a Paper Read Before the American Geographical Society, February 27th, 1879* (New York: 1879), 9.

Few documents from the sixteenth and seventeenth centuries indicate or explain the process of making hammocks or their material. The sources that are accessible, however, all suggest the use of canvas. Some specifically state canvas, while others employ language such as coarse cloth, which is the definition of canvas.⁷⁹ During the middle of the eighteenth century, documentation of the use of canvas becomes abundant. Multiple maritime dictionaries in the eighteenth and nineteenth century specifically define hammocks as “made of canvas for seamen to lie in.”⁸⁰

Bedding

Prior to the hammock, a sailor’s bedding was sparse and basic, no more than a sleeping pad, blanket, and pillow at most. Sailors likely kept these same items for use in conjunction with hammocks after their introduction. Through the sixteenth and seventeenth centuries, however, there is little documentation of the precise bedding that accompanied a sailor’s hammock.

During the eighteenth, nineteenth, and twentieth centuries, a sailor’s bedding usually consisted of a mattress, blanket, and pillow in addition to his hammock. William Don called it his “kit ... the hammock, a mattress, pillow, sheets and blankets.”⁸¹ Most sources describe the mattresses as made of canvas and stuffed with hair or straw; as Captain Mentzel explained in 1784, “a mattress, two-and-a-half yards long and three-quarters of a yard wide, also made of

⁷⁹Oppenheim, *A History of the Administration of the Royal Navy*, 134; Smyth, *The Sailor's Word-book*, 158; Kevin Brown, *Poxed and Scurvied: The Story of Sickness and Health at Sea* (Annapolis: Naval Institute Press, 2011), 34.

⁸⁰Blanckley, *A Naval Expositor*, 69; Newbery, *The News-Readers Pocket-Book*, 80; Falconer, *An Universal Dictionary of the Marine*, 161; Gershom Bradford, *A Glossary of Sea Terms* (New York: Dodd, Mead and Company, 1879), 84; Smyth, *The Sailor's Word-book*, 363.

⁸¹Don, *Reminiscences of the Baltic Fleet of 1855*, 338.

canvas, and stuffed with cow-hair.”⁸² The exact stuffing of a mattress may have varied by date, nation, or even ship. Charles Nordhoff of the United States Navy described the filling as “rag-and-shaving” in 1856. In the same year, a passenger, Robert Minturn, recounts how Chinese maritime vessels typically stuffed mattresses with bamboo chips. Since hammocks and mattresses doubled as life saving devices, tests of various innards took place, particularly in the nineteenth century by the United States Navy. A report on the viability of mattresses as life saving devices, by Theodorus Mason in 1879, identified several alternative stuffing types. He acknowledges the use of hair mattresses by the United States Navy and granulated cork by the Royal Navy at the time of his report; and, suggests the switch to granulated cork, cork shavings, or felt. The United States Navy thus began a trial of felt mattresses, which also became heavily adopted by passenger vessels for bunk mattresses. In comparison to the original illustration of the Spanish mattress, figure 3, one can see mattresses had evolved to be thicker, denser, and more rectangular.⁸³

Blankets were also a typical bedding item. Often sailors had two single blankets or one double-wide. Mattress covers, or coverlids, seem to be another bedding staple, appearing regularly in the nineteenth century. Somewhat like a bottom sheet or mattress pad today, a mattress cover helped to protect the mattress from soil, allowing the mattress to remain cleaner longer by washing the mattress cover several times a week. The degree to which sheets were used is unclear. Few sources state anything about sheets until the twentieth century. In his journal published in 1917, Ralph Earle explains the United States Naval requirement of six sheets per sailor. Sheets, however, were most likely an abnormal bedding component, as John

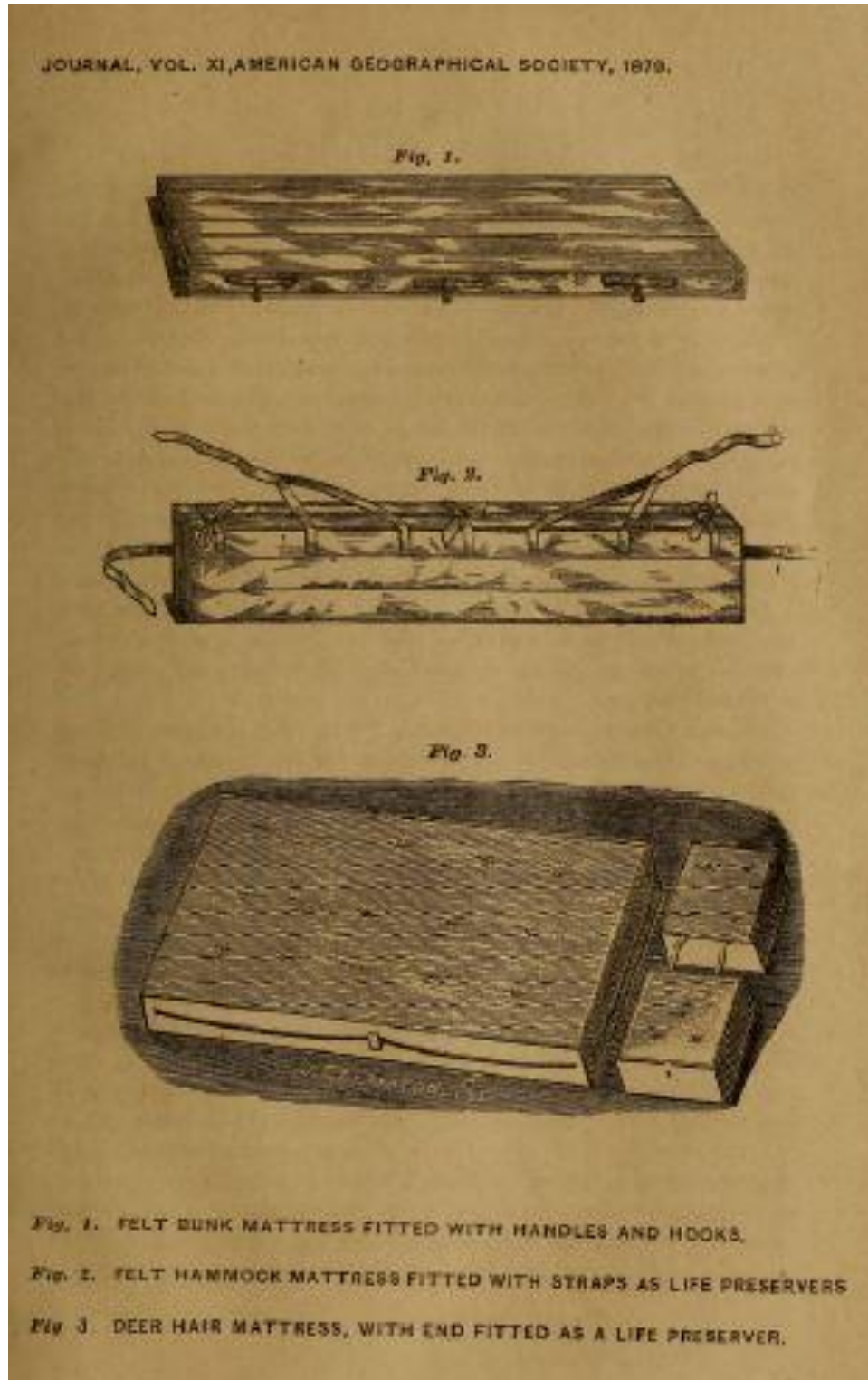
⁸² Mentzel, *Life At the Cape In Mid-eighteenth Century*, 21; Masfield, *Sea Life in Nelson's Time*, 138.

⁸³ Nordhoff, *Man-of-war Life*, 23; Robert Bowne Minturn, *From New York to Delhi, by Way of Rio de Janeiro, Australia, and China* (New York: D. Appleton and Company, 1858), 86; Mason, *The Preservation of Life At Sea*, 8-10.

Masefield suggests, “sheets were unknown.” Another debatable feature was pillows. While many men speak of using pillows, others explain how one’s boats and clothes served as a pillow. Another item at a sailor’s disposal was a removable spreader or stretcher bar (see figure 6); a simple piece of wood placed along the ropes extending from the hammock, designed to spread it open. Most men may have opted out of a spreader bar, because without them a sailor could wrap the hammock around himself like a cocoon, adding warmth, comfort, and privacy, see figure 6. Both pillows and spreader bars appear sporadically through the literature, implying, as John Masefield points out, sailors may or may not have used either item based on their comfort preferences.⁸⁴

⁸⁴ Stephen F. Blanding, *Recollections of a Sailor Boy: Or, The Cruise of the Gunboat Louisiana* (Providence: E.A. Johnson, 1886), 36; Masefield, *Sea Life in Nelson's Time*, 138; Bellingshausen, *Voyage of Captain Bellingshausen*, 165; Albert Leary Gihon, *Practical Suggestions in Naval Hygiene* (Washington, D.C.: US Government Printing Office, 1871), 96; Leonard Gillespie, *Advice to the Commanders and Officers on His Majesty's Fleet, Serving in the West Indies, on the Preservation of the Health of Seamen* (London: J. Cuthell, 1798), 21; S. Bleecker Luce, *Seamanship*, 4th edition (New York: D. Van Nostrand, 1868), 309; Ralph Earle, *Life at the U.S. Naval Academy: The Making of the American Naval Officer* (New York: London: G.P. Putman’s Sons, 1917), 347; Bruce Taylor and Thomas Schmid, *The Battlecruiser HMS Hood: An Illustrated Biography 1916-1941* (London: Seaforth Publishing, 2008), 117.

Figure 4. Examples of various mattresses. United States Navy, 1879.



Source: Theodorus B. M. Mason, *The Preservation of Life At Sea: a Paper Read Before the American Geographical Society, February 27th, 1879* (New York: 1879), 10.

Accessories

In order to suspend the hammock, ropes extended from each end of the canvas. The ropes individually were called nettles or knittles; together they formed clews or clues. Generally, sailors made these items from basic rope. The process started with small ropes called rope-yarns or nettle-stuff, which men bought or obtained from the pursuer. “Knettels are two rope-yards twisted together, and a knot at each end...”⁸⁵ A United States sailor’s manual from 1879 explains,

To make a knittle: A Knittle is made of two or three rope-yarns laid up together by hand, twisting them between the thumb and finger, and laying them up against the twist of the yarn. They are used for many purposes on board a ship, particularly for hammock clews.⁸⁶ (see figure 5)

Some sources, all of which are sailor’s journals, identify both the individual lengths of twisted rope and the collection of several attached to a hammock as clews.⁸⁷ This discrepancy is most likely due to the knowledge level of the sailors or the depth of which they chose to explain the items. Manuals and dictionaries conclusively define the individual twisted ropes as nettles and the collection of several nettles secured to a hammock as a clew.⁸⁸

The number of nettles it took to make a clew is uncertain since only a few sources provide specific numbers. A United States Naval Manual from 1868, *Seamanship* by S. Bleecker Luce, states the use of twelve nettles to form a clew. Based on imagery, eight to twelve nettles

⁸⁵ Smith, *The Sea-Mans Grammar and Dictionary*, 24.

⁸⁶ William N. Brady, *The Kedge-anchor: Or, Young Sailors' Assistant*, 18th edition (New York: Appleton, 1879), 22.

⁸⁷ Jones, *Sketches of Naval Life*, 11-12; Nordhoff, *Man-of-war Life*, 22-23; *The History of a Ship From Her Cradle to Her Grave*, 99.

⁸⁸ Luce, *Seamanship*, 39-40, 54, 56-57; Bradford, *A Glossary of Sea Terms*, 84; Smyth, *The Sailor's Word-book*, 194-195; Taylor and Schmid, *The Battlecruiser HMS Hood*, 117.

were most likely the average number (see figures 5 and 6). There were two processes by which to make a clew. The first was a weave or knot (see figure 5). Luce explains the process:

Hammock Clews: Take twelve lengths of nettle-stuff, middle them, serve round all at the centre, and pass a seizing to form the eye; then lay one up and one own, as for a sword mat, bring the outside nettle on each side across for filling, and leave it out; form the other rows in the same manner, and when reduced to two, knot the last pair.⁸⁹

A ring was the alternative to a woven clew; a simpler task, a sailor drew the nettle together and secured them around an iron ring. The purpose of both versions, was an eyelet to secure the hammock to the beams overhead by looping the eyelet over a hook, nail, or spike; or, by securing another rope, called a hammock stop, through the eyelet and lashing the other end to the batten or hook in the beam, and in later years to the hammock bar. Each hammock required two clews, a head and a foot clew, as the names suggest, one for each end of the hammock. Clews therefore had two ends. One side was the weave or ring. The end opposite the ring, or nettle ends, was attached to the hammock at equal intervals through grommets or reinforced holes.⁹⁰

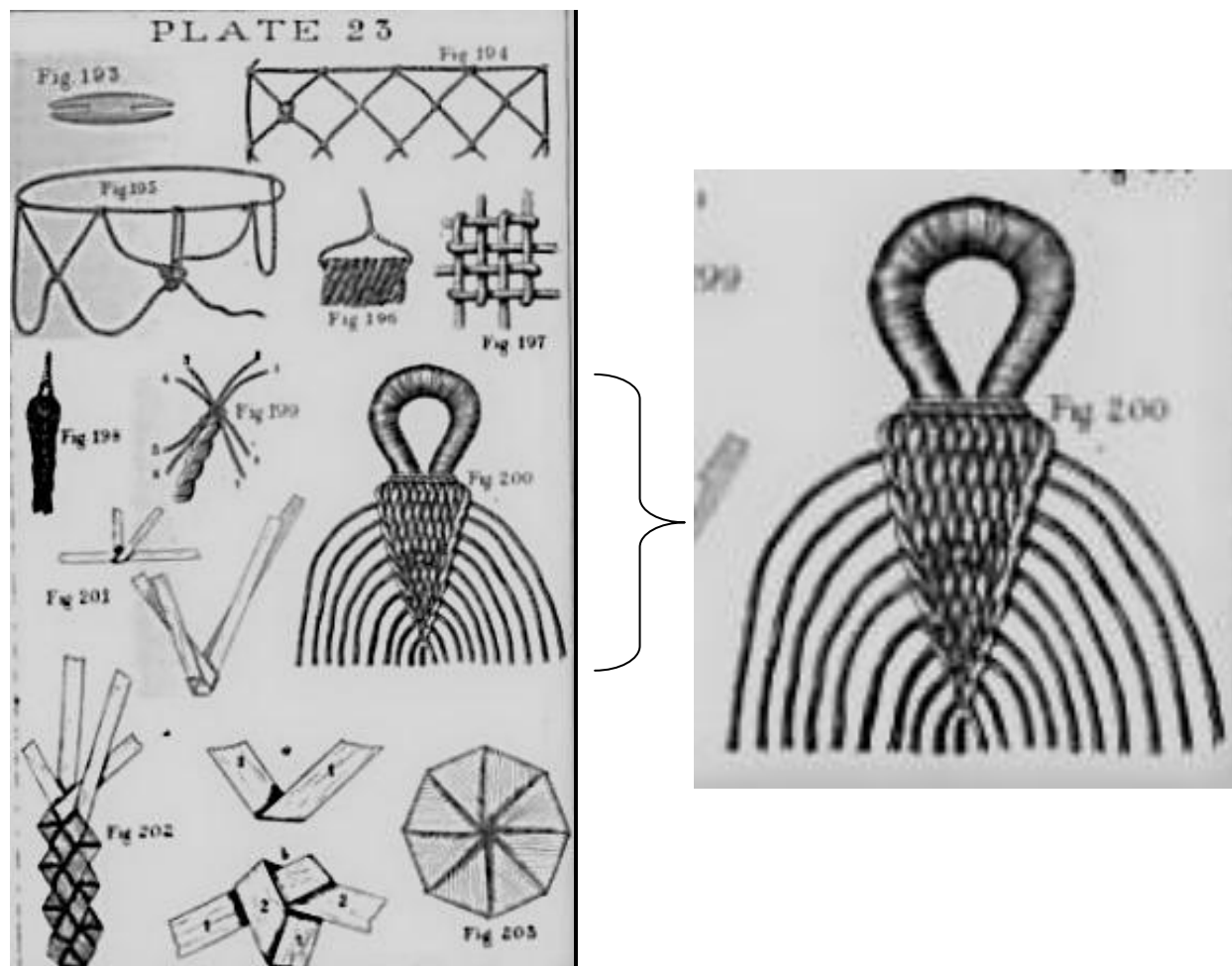
Hammock clews were subject to wear, just as any other item formed from rope. Sailors often made several throughout their careers, and the end of one's life span was generally abrupt for a sailor. One sailor's experience involving clews is a perfect example, Willie Leonard recalls, a "Very pleasant day. I am busy making a set of hammock clews. My old ones gave out last

⁸⁹ Luce, *Seamanship*, 39-40; Nathan Miller, *The U.S. Navy: An Illustrated History* (New York: American Heritage Publication Company, 1977), 65; E. H. H. Archibald and Ray Woodward, *The Fighting Ship in the Royal Navy, AD 897-1984* (New York: Blandford Press, 1984), 79.

⁹⁰ *The History of a Ship From Her Cradle to Her Grave*, 99; Jones, *Sketches of Naval Life*, 11-12; Taylor and Schmid, *The Battlecruiser HMS Hood*, 117; Nordhoff, *Man-of-war Life*, 22-23; Bradford, *A Glossary of Sea Terms*, 84; MacEwen and Lewis, *Encyclopedia of Nautical Knowledge*, 218; Blanding, *Recollections of a Sailor Boy*, 36-37; Smyth, *The Sailor's Word-book*, 194-195.

night and let me down head foremost. The fall stunned me; it was almost an hour before I could collect my senses.”⁹¹

Figure 5. Clew weaved from nettles. United States Navy, 1868.



Source: S. Bleeker Luce, *Seamanship*, 4th edition (New York: D. Van Nostrand, 1868), plate 23.

⁹¹ Willie Leonard, *Studies in Maritime History: USS Constellation on the Dismal Coast: Willie Leonard's Journal, 1859-1861*, C. Herbert Gilliland, ed. (Columbia: University of South Carolina Press, 2013), 123; John Bechervaise, *Thirty-Six Years of a Seafaring Life by an Old Quarter Master* (London: W. Woodward, 1839), 54.

Figure 6. Slung hammocks with and without spreader bar, nettles and woven clews. Royal Navy, 1750's.



Source: © Brain Lavery, 1987, *The Arming and Fitting of English Ships of War, 1600-1815*, Conway Maritime Press, 179, used by permission of Bloomsbury Publishing Plc.

Construction Below Deck to Accommodate Hammocks

As with any innovation to an existing technology, structural changes are generally necessary. This can be a drastic alteration or a minimal change; however, the point of an innovation is to make the overall situation better. Small adjustments can lead to big differences and big modifications can lead to small changes, or any combination in between. The introduction of hammocks as a maritime tool required minimal structural additions to seafaring

vessels, resulting in a large improvement. As previously mentioned, sleeping condition prior to 1492 were basic. Men sleeping on bare decks with no cover resulted in health and overcrowding problems. The first structural innovation to solve the problem was the forecandle, which was a large constructional modification, creating an additional deck above the forward third of the upper deck. This created some shelter for sleeping sailors, but it still could not accommodate all of the growing crews. The next structural change to maritime vessels in hopes of solving the sleeping problem was the addition of small coffin-like cabins filling the forecandle and between the guns on the main deck. Although this helped immensely to house the sailors at night, it caused many negative side effects: health issues from the confined, dirty holes, the increased amount of deadly splinters from the additional wood, permanent, now unusable space in the forecandle, and added weight to ships.⁹²

As shipbuilders, captains, and sailors alike struggled with these problems, the hammock began its integration into the maritime world. Unlike the previous solutions, the hammock did not come with all the negative drawbacks. As a removable tool, it enabled the sheltered slumber of all men and an increase in their health, free of the nasty cabins. In addition, the elimination of cabins decreased lethal splinters and overweight ships due to the removal of the extra wood. The key word, however, in relation to the construction of the vessels is *removable*. This meant a lack of construction, no additional wood, and the space in which sailors slept to be multifunctional rather than permanent and singular. Although these are big changes, in actuality they are large differences caused by the small alterations it took to incorporate hammocks. This change, simply put, was hardware.

⁹² Oppenheim, *A History of the Administration of the Royal Navy*, 61, 125, 127; Pérez-Mallaína, *Spain's Men of the Sea*, 83-84; Lavery, *The Arming and Fitting of English Ships of War*, 155; Lavery, *Royal Tars*, 49; Barlow, *Barlow's Journal*, 257-258 quoted from Lavery, *The Arming and Fitting of English Ships of War*, 155; Lloyd, *The British Seaman*, 68.

From the first expeditions and encounters with New World natives and hammocks, explorers knew hammocks were a hanging bed. Although how the first sailors hung their hammocks is unclear, it stands to reason they found a way as the hammock was of little use as a tool unless hung. One of the initial explanations of the hanging of hammocks is in 1573 when Eugenio de Salazar explains his experience, “We all swing in hammocks, and even if one is one hundred years old, he must swing in such a cradle.”⁹³ Little is explained about how a hammock was hung until the middle of the eighteenth century. Throughout this time ships were solid wooden structures with thick beams secured to the deck above and, therefore, had no room to thread a clew or rope. Additionally, hundreds of hammocks swung in a small space, placed close together. Most likely, the means of securing a hammock in the sixteenth and seventeenth centuries were the same as in the eighteenth century: by driving hardware into the beams.

Ships used a variety of hardware. Possibilities included iron nails, wooden battens, wooden or metal cleats, or iron hooks. Most commonly used, up to the turn of the nineteenth century, were nails and cleats. In Thomas Blankley’s naval architectural dictionary of 1750, he explains hammock nails as “double or single nails used by the shipwrights, and are drove into the beams from the mens hammocoes to hang on.”⁹⁴

More commonly used from the 1750’s onward were hooks and battens. This is likely due to the standardization of navies. Another possible reason, however, is the ease in which sailors

⁹³ Columbus, *Personal Narrative*, 73; Cabeza de Vaca, *South American Expeditions*, 128; Eugenio de Salazar, *Seafaring in the Sixteenth Century: Letters of Eugenio de Salazar, 1573*, translated by John Frye (San Francisco: Mellen Research University Press, 1991), 51.

⁹⁴ Masfield, *Sea Life in Nelson's Time*, 131-132; Blankley, *A Naval Expositor*, 109.

could remove the nails.⁹⁵ During the second voyage of the HMS *Dolphin* to Tahiti in 1767, Captain Wallis lamented the structural safety of the ship due to his men.

I was Ordering the liberty men into the boat the Carpenter came and tould me every cleat in the Ship was drawn, and all the Nails carryed off. At same time the Boatswain informed me that the most of the hammock nails was drawn, and two thirds of the men oblided to lie on the Deck for want of nails to hang their Hammocks, I immediately stopt the liberty men, and Calld all hands, and let them know that no man in the Ship should have Liberty to go Ashoar untill they informed me who drawd the nails and cleats, and let me know what use they made of them but not one would Acknowledge, that they knowd any thing about drawing the Nails and Cleats, but all said they knowd what use they went to. Then some of the Young Gentlemen tould me, that all the Liberty men carryed on a trade with the Young Girls, who hade now rose their price for some Days past, from a twenty or thirty penny nail, to a forty penny, and some was so Extravagant as to demand a Seven or nine Inch Spick, this was a plain proof of the way the large nails went.⁹⁶

Hammock hooks were just as they sound, and were “set into the beams and carlings overhead. The little strings before mentioned – clews ... were used to suspend the hammock between two of these hooks, thus making a swinging bedstead...”⁹⁷ They also aided sailors in climbing into their hammocks and doubled as coat and towel racks. (see figures 7 and 8). A young sailor, Charles Nordhoff explains how he “was told to catch hold with my hands of two of the hooks, give my body a swing, and alight in the hammock.”⁹⁸

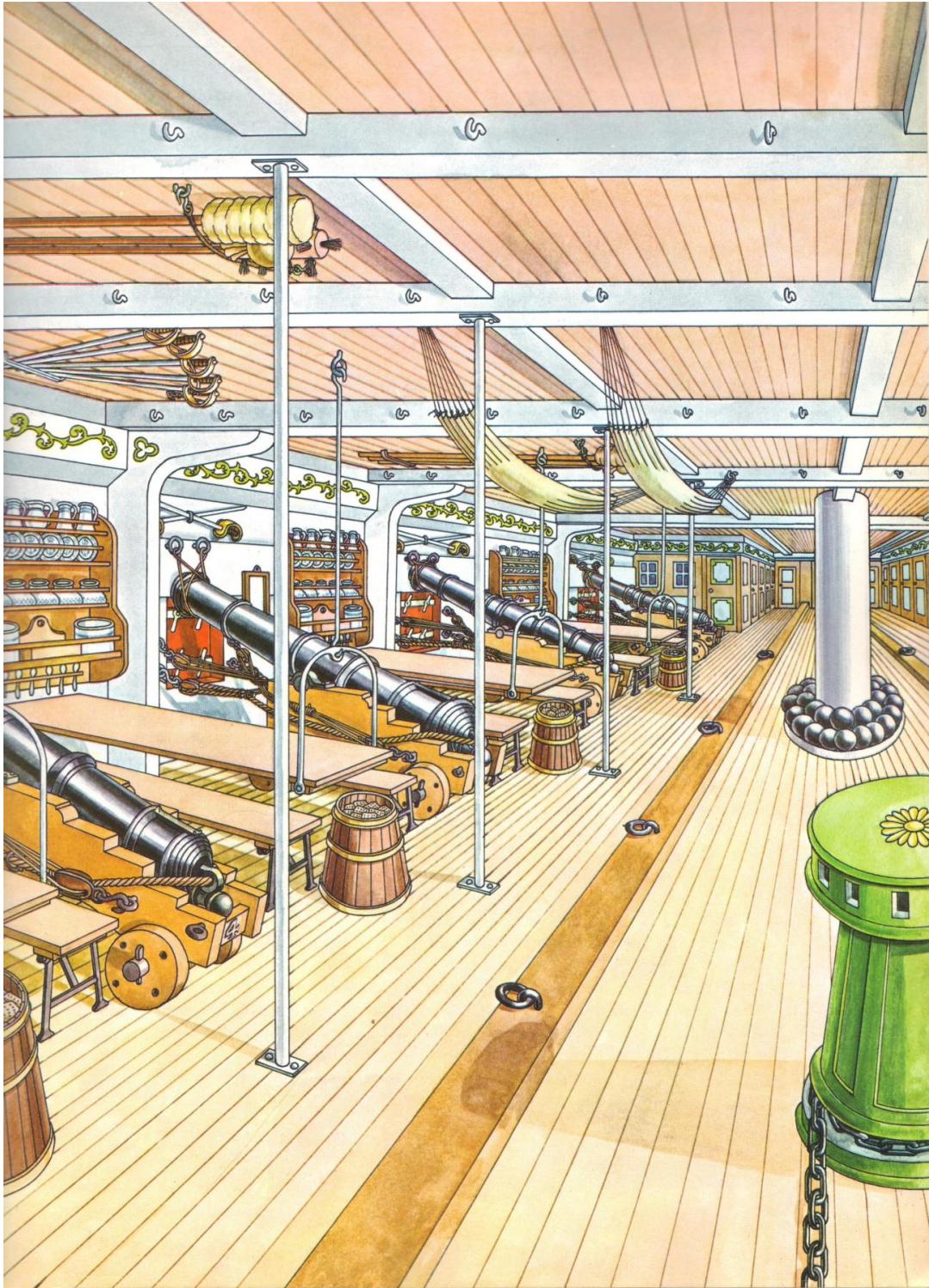
⁹⁵ John Hawkesworth, *An Account of the Voyages Undertaken by the Order of His Present Majesty, for Making Discoveries in the Southern Hemisphere: and Successively Performed by Commodore Byron, Captain Wallis, Captain Carteret, and Captain Cook, in the Dolphin, the Swallow, and the Endeavor: Drawn Up from the Journals which were kept by the several Commanders, and from the Papers of Joseph Banks, Esq*, volume 1 of 2 (Dublin: James Potts, 1775), 288; Frank McLynn, *Captain Cook: Master of the Seas*, (London: Yale University Press, 2011), 105-106.

⁹⁶ Robertson, *Discovery of Tahiti*, 207-208.

⁹⁷ Nordhoff, *Man-of-war Life*, 22-23, 46; Edward Shippen, *Thirty Years at Sea: The Story of a Sailor's Life* (Philadelphia: J. B. Lippincott and Company, 1879), 145; Don, *Reminiscences of the Baltic Fleet of 1855*, 22.

⁹⁸ Daniel Ammen, *The Old Navy and the New* (Philadelphia: JB Lippincott, 1891), 34. Nordhoff, *Man-of-war Life*, 22-23.

Figure 7. Illustration of hammock hooks. British Royal Navy, Seventeenth Century.



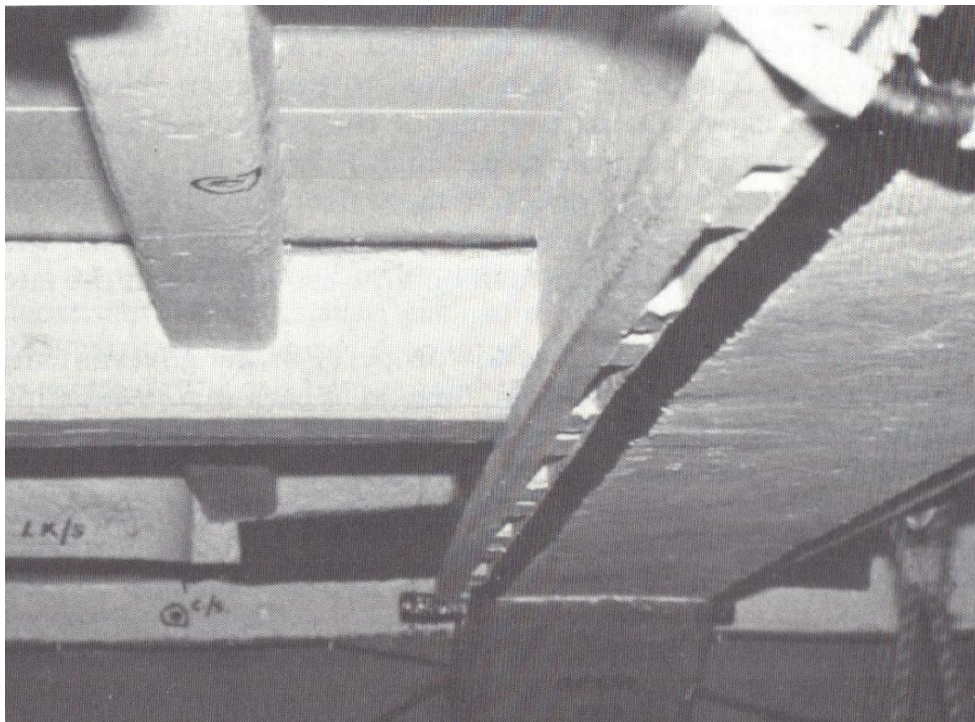
Source: E. H. H. Archibald and Ray Woodward, *The Fighting Ship in the Royal Navy, AD 897-1984* (New York: Blandford Press, 1984), 78.

Figure 8. Illustration of hammock hooks used for getting in and out of and slinging hammocks. Sailors to “lash and carry” their hammocks above deck. Royal Navy, Nineteenth Century.



Source: National Maritime Museum PW 3742.

Figure 9. Hammock Batten or Racks attached to deck beams above. Royal Navy, 1750's.



Source: © Brain Lavery, 1987, *The Arming and Fitting of English Ships of War, 1600-1815*, Conway Maritime Press, 179, used by permission of Bloomsbury Publishing Plc.

Battens were slightly more than hardware, and up to this point the largest structural change to accommodate the hanging of hammocks. They were “about 2 inches thick and 4 inches broad, nailed up under the deck...”⁹⁹ Also referred to as hammocks racks, “battens [were] nailed to the sides of a vessel's beams, from which to suspend the seamen's hammocks.”¹⁰⁰ Hooks, nails and cleats were all individual hardware protruding from the deck beams overhead, and were necessary because all the deck beams were flush against the deck, leaving no holes or openings. Rather than using removable, individual hardware, hammock battens were pieces of lumber, somewhat like beams, with holes at specific intervals, usually fourteen inches, giving it the look of a long wooden cinderblock (see figure 9). Sailors threaded hammock stops through these holes and secured their hammocks.¹⁰¹ Although this added weight to a ship, it was minimal at best and possibly a better solution due to their permanence.

In the early twentieth century, as ships were quickly transitioning to metal, so too was hammock hardware. As the construction of vessels shifted to metal, the previous solutions for hanging sailors' hammocks were no longer viable; thus came the introduction of the hammock bar. Simple in design, hammock bars were as they sound, bars stretching across the length of the mess deck or main deck, allowing men to easily tie off their hammock stops. The bars had the added benefit of an easy handhold for pulling oneself into the hammock. Much like the battens,

⁹⁹ Smyth, *The Sailor's Word-book*, 363-364.

¹⁰⁰ Greenwood, *The Sailor's Sea-book*, 123, 156-157.

¹⁰¹ Steel, *The Elements and Practice of Naval Architecture*, 35; Lavery, *The Arming and Fitting of English Ships of War*, 179; MacEwen and Lewis, *Encyclopedia of Nautical Knowledge*, 218.

the bars were a permanent solution. Again, a slightly more noticeable constructional addition, yet only a minute change.¹⁰²

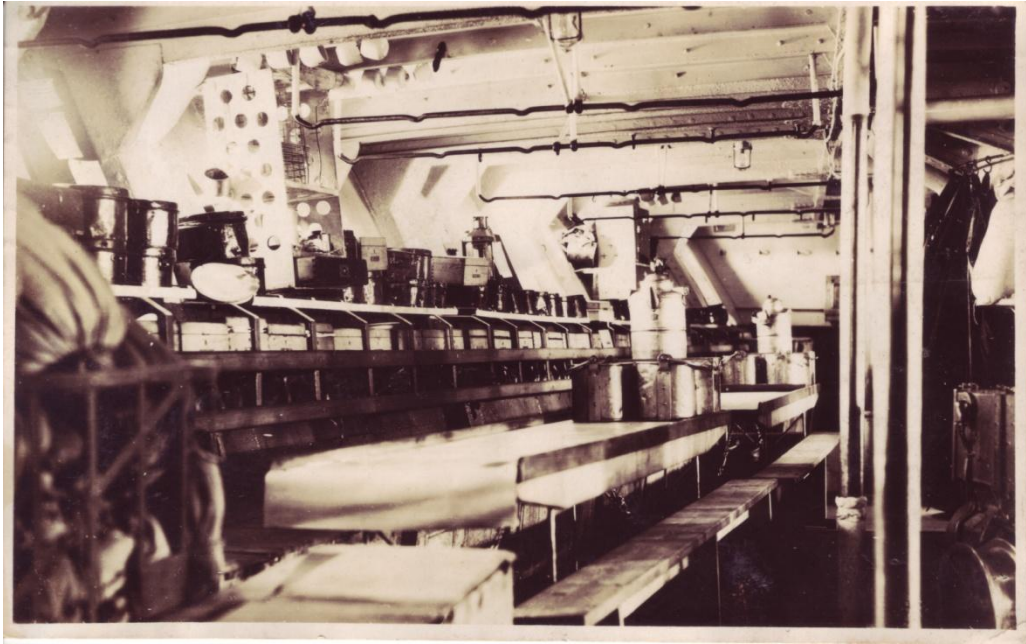
Figure 10. Hammock Bar on metal ship used to sling hammocks and get in and out of hammock.
Royal Navy, 1940.



Source: Imperial War Museums, Admiralty Official Collection, A 168. By R.G.G. Coote.

¹⁰² Taylor and Schmid, *The Battlecruiser HMS Hood*, 115, 117; Richard O. Mayne, *Betrayed: Scandal, Politics, and Canadian Naval Leadership* (Vancouver: University of British Columbia Press, 2006), 155; Ian Pfennigwerth, *Royal Australian Navy and MacArthur* (Sydney: Rosenberg Publishing, 2009), 32.

Figure 11. Hammock bars above mess tables on HMS *Hood* 1930's.



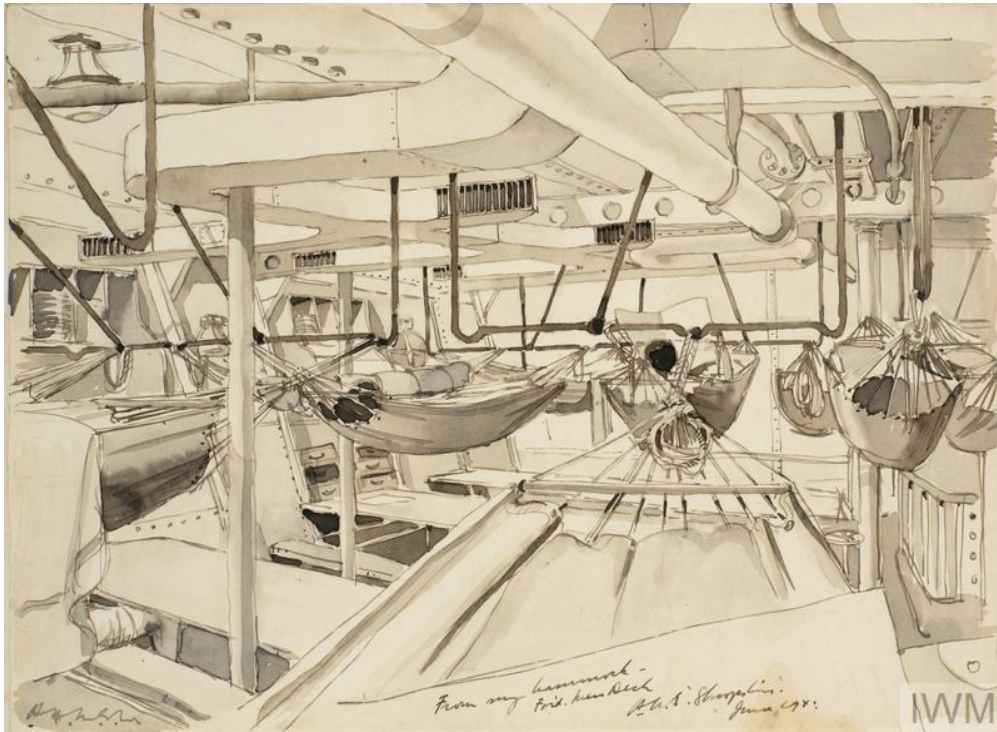
Source: Bruce Taylor Collection Courtesy of Brian Withers

Figure 12. Hammocks slung above mess tables. Canadian Navy, 1944.



Source: DND (Ottawa): 81/520/1000, box 6, file 20.

Figure 13. Illustration of Hammock Bars above mess tables, Royal Navy 1941.



Source: Imperial War Museum, Herbert Hastings McWilliams, ART LD 1556.

Figure 14: Hammocks at Royal Naval Volunteer Reserve, 1914.



Source: Imperial War Museum, Q 53295.

Regardless of the type of hardware used, the arrangement of the hammocks remained the same. Sailors slung their hammocks parallel to the length of the ships so that they would swing like a cradle with the motion of the vessel. Aligned in rows down the length of the ship like lines of sardines, each hammock allowed fourteen inches in width on average and hovered four feet over the deck. Hammock clews or stops looped around or over the nails or hooks in the beams at the head and foot of the hammock, however, not to the hook facing the hammock as one would expect, but rather the nail or hook on the backside of the beam to prevent hammocks slipping off. Furthermore, hammocks overlapped by eighteen inches like interlocking fingers, head to foot, so that one man's feet were against another man's shoulders. To ease the overcrowding, the arrangement of hammocks corresponded to the watch number of each sailor.¹⁰³ As Luce explains in his naval manual,

The hammock numbers correspond to the watch numbers, the odd, such as 1, 3, 5, 7, etc., for the starboard, the even, as 2, 4, 6, etc., for the port watch; and in quartering the crew, all the starboard watch are to be distributed among the odd-numbered guns, the port watch among the even, presuming that the force and intelligence of the crew are equally divided, so that in preparing for action at night at least half the battery may be fully manned, while the watch below are bringing up and stowing the hammocks.¹⁰⁴

This configuration achieved three things. First, by alternating the placement of the men by watch number rather than placing all of one watch on either side, it prevented the ship from listing to one side due to the misdistribution of weight. Second, it effectively doubled the amount

¹⁰³ Smyth, *The Sailor's Word-book*, 363-364; Theodore C. Mason, *Battleship Sailor* (Annapolis, United States Naval Institute Press, 1982), 119; Albert Leary Gihon, "The Need of Sanitary Reform in Ship-Life," *The Sanitarian* 5, no. 48 (March 1, 1877), 96; Nordhoff, *Man-of-war Life*, 22; Allison, *Sea Diseases*, 55; D. Ross, *The Perpetual Berthing and Watch Bill Book* (London: David Steel, 1797) in *Shipboard Life and Organization, 1731-1815*, Publications of the Naval Record Society volume 138, edited by Brain Lavery (Aldershot, England: Ashgate Publishing Limited, 1998), 25.

¹⁰⁴ Luce, *Seamanship*, 307; Ross, *The Perpetual Berthing in Shipboard Life and Organization*, 259.

of sleeping space allotted to each man since the hammock on either side of a sleeping sailor was empty due to his neighbor being on deck. Lastly, as Charles Nordhoff explains, it reinforced the hierarchy of the men onboard.¹⁰⁵

...hammock numbers are arranged in regard to the different parts of a ship; number one being the captain of the fore castle's, then progressing regularly aft, the last numbers being those of the quartermasters and messenger boy....¹⁰⁶

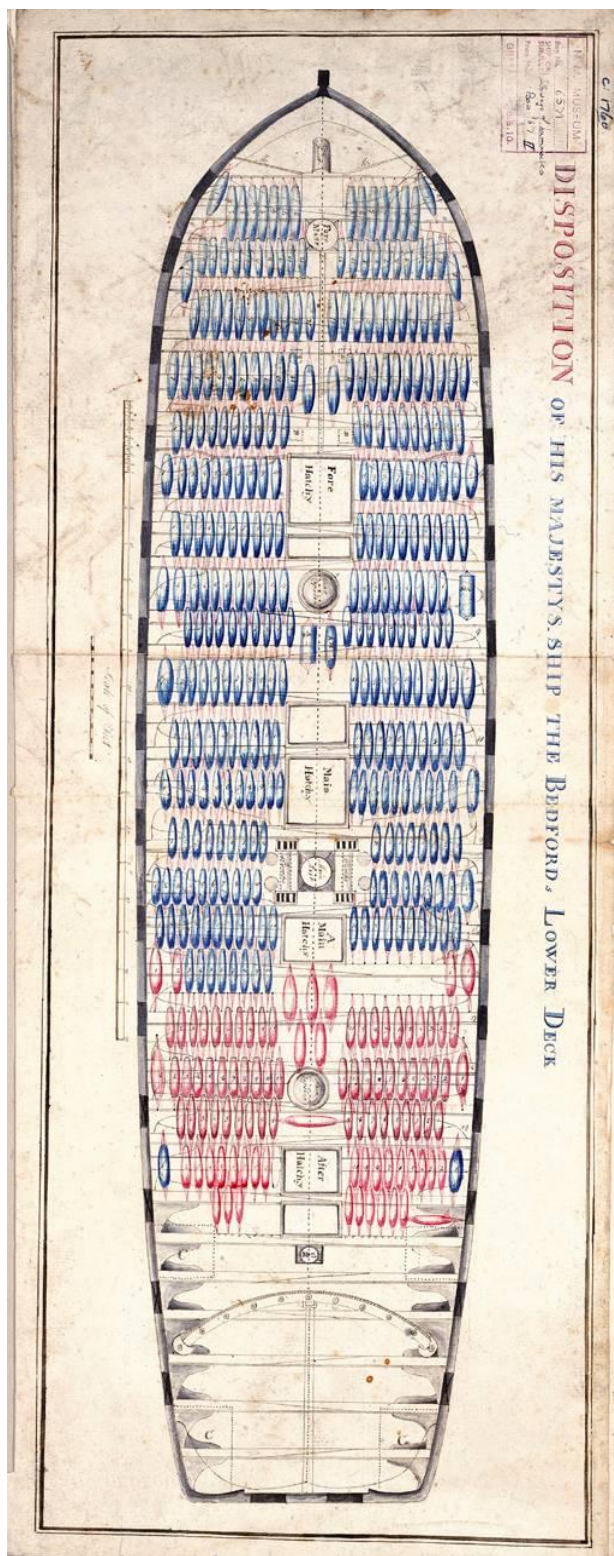
The placement of each hammock was indicated by the number provided each sailor. The number functioned as a form of identification for each sailor, both in daily routine and in ships' records. As previously mentioned, those with an even number belonged to the starboard watch and those with an odd number to the port, the names of the watch indicated the side of the ship a sailor was stationed in battle. Each sailor's hammock bore his number. Originally, the sailmaker was in charge of stenciling a sailor's number onto bits of canvas collected from worn out hammocks and attaching it to the hammock. In later years, sailors received several pre-stenciled pieces of canvas to attach to all the items they received from the navy. Each number corresponded to a hammock hook, nail, cleat, or batten, indicated by the same number painted above the hardware on the beam or a tin plate.¹⁰⁷

¹⁰⁵ Brady, *The Kedge-anchor*, 131; Chisholm, *A Manual of the Climate And Diseases*, 13; *The History of a Ship From Her Cradle to Her Grave*, 99-100; Allison, *Sea Diseases*, 55; Nordhoff, *Man-of-war Life*, 74.

¹⁰⁶ Nordhoff, *Man-of-war Life*, 74.

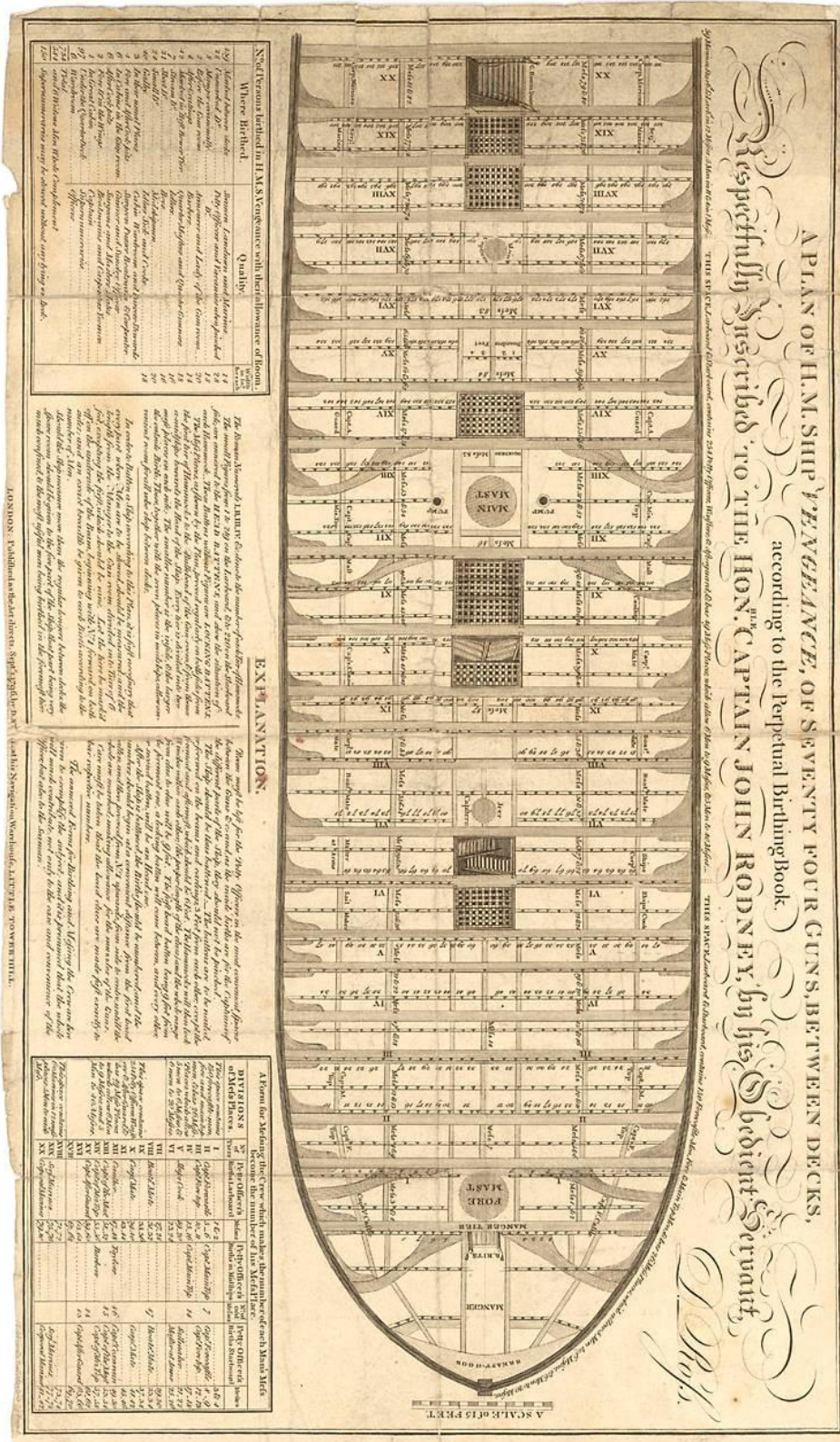
¹⁰⁷ Nordhoff, *Man-of-war Life*, 22, 41, 46; A Captain of the Royal Navy, *Observations and Instructions for the Use of the Commissioned, the Junior and Other Officers of the Royal Navy ... With an Appendix; being a complete set of forms for watch, station and quarter bills for ships of war* (London: P. Steele, 1804), iv, 48; Francis Buzzell, *The Great Lakes Naval Training Station: A History* (Boston: Small, Maynard and Company, 1919), 9; Samuel Leech, *Thirty Years from Home: Or, A Voice from the Main Deck* (Boston: JM Whittemore, 1847), 43-44; Luce, *Seamanship*, 307.

Figure 15. Sleeping configuration HMS *Bedford* c1780.



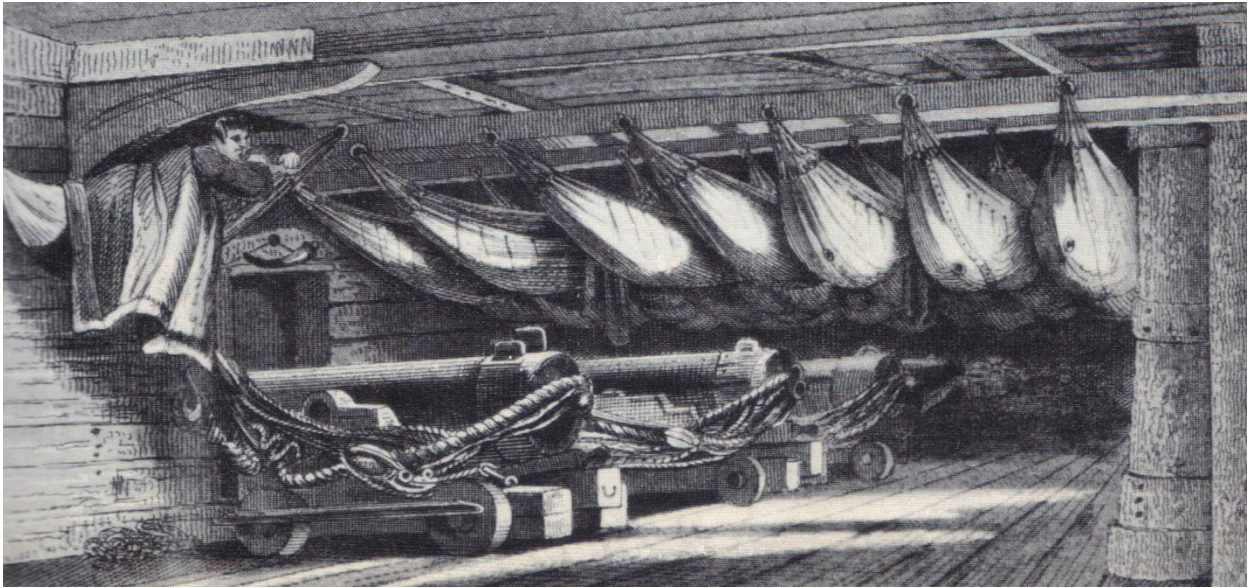
Source: National Maritime Museum ZAZ 76793.

Figure 16. Perpetual berthing HMS Vengeance c1797.



Source: National Maritime Museum ZAZ 6890.

Figure 17. Hammock slung on gun deck fourteen inches apart.



Source: J. G Heck, *Iconographic Encyclopedia of Science, Literature, and Art*, volume 33, translated by Spencer F. Baird (New York: Rdolph Garrigue, 1851), figure 21.

Construction of Merchant Ships

Unlike naval ships, merchant vessels frequently had bunks. Merchant ships carried considerably fewer sailors by comparison, mainly because they did not need men to operate artillery and fight. In fact, they generally employed the bare minimum of men because fewer employees meant higher profits. A merchant schooner could employ as few as five sailors. In reference to sleeping, and many other things, merchant and naval ships were polar opposites. Merchant vessels made every effort to increase the amount of cargo a ship could carry. This meant that there was nowhere to put a hammock below deck, removable or not; therefore, forecastles were the only place to house men. With a different set of factors, it made just as much sense for merchant vessels to use bunks rather than hammocks, creating a stationary fixed

sleeping berth, instead of worrying about the location of sailors throughout the night or the outfitting of bedding for various men as they came and went.¹⁰⁸

Outfitting

The outfitting of a ship, or more specifically a sailor, in reference to their hammock, bedding, and accessories is difficult to track over time. Before hammocks became a common item aboard ships, sailors who used hammocks had to personally obtain them whatever way possible, generally by bartering with or stealing from New World natives. In the case of the British naval forces, by 1597, officials began accepting hammocks with a warrant approving the payment for bolts of canvas to make hammocks. A warrant was similar to a signing bonus, designed to incentivize men to enlist in the navy. This implies the navy supplied the hammocks and possibly the bedding to the sailors. In 1624, records show the British navy outfitting a fleet of 3000 men with 300 hammocks. By 1629, the British navy issued one hammock for every two men stationed on ships abroad. The British navy quoted the cost of hammock production as two shillings in 1625 and two shillings seven pence each in 1642 and paid workers two shillings for every hammock assembled in 1661. Letters from various generals and captains sent to the Admiralty and Navy expressed their need of hammocks. In 1695, the Admiralty directly addressed poor sleeping conditions on sailing vessels and ordered the Navy Board to outfit ships with hammocks or sleeping platforms.¹⁰⁹

¹⁰⁸ Frederick Pease Harlow, *The Making of a Sailor: Or, Sea Life Aboard a Yankee Square-rigger* (Salem: Marine Research Society, 1928), 18-19; Henry E. Armstrong, "The Hygiene of Merchant Ships, with Especial Regard to Seamen," *Public Health* 7 (October 1894–September 1895), 64, 66; Nordhoff, *Man-of-war Life*, 158-159.

¹⁰⁹ Cabeza de Vaca, *South American Expeditions*, 172; Tertre, *Histoire Generale des Antilles*, 385 quoted from Davis, *American Sailing Ships*, 248; Oppenheim, *A History of the Administration of the Royal Navy*, 134, 197, 198, 235, 301; Charles II, *Notes Which Passed At Meetings of the Privy Council*, 63; Deane, *The Life of Richard Deane*, 630-631; Anson, *The Life of John Jervis Admiral Lord St. Vincent*, 117; Lavery, *Royal Tars*, 138-139.

Based on the available sources, the English navy undoubtedly supplied many ships in the seventeenth century with hammocks for sailors. This remains true through the eighteenth century, during which hammocks became an official tool of the permanent, professional Royal Navy. What is unclear, however, is if a sailor repaid the navy. Throughout history, military personnel often paid for standard issue items, through the garnering of their wages. From the vocabulary of the sources available, it is questionable if this was the case. Several sources use such words as ‘supplied,’ ‘issued,’ and ‘given,’ which are vague or subject to interpretation.¹¹⁰

There is some evidence that the Royal Navy supplied the hammocks outright, at least by the mid-eighteenth century. A document written by the Privy Council in 1757 states:

Boatswain is to receive into his charge the rigging, cables, cordage, anchors, sails, boats, and other stores ... he is not to cut up any cordage or canvas ... and under the inspection of the [sail] maker; and in every respect to be very frugal in the expense of stores; and ... to prevent the extravagant expense of new hammocoes.¹¹¹

In 1795, Colin Chisholm’s *A Manual of Climate and Disease* recounts how during an epidemic aboard his ship, all sailors received new hammocks. Author Peter Flynn explains how “the boatswain ensured that the spars [hammocks] were conserved and protected against unnecessary or unauthorized use.” Charles Nordhoff also describes how the sailmaker had “charge of all the canvas in the ship, including the hammocks....” Additionally, a United States Naval manual on seamanship, by S. Luce in 1868, indicates the navy’s responsibility to replace hammocks. “A torn or badly stained hammock should be left out and given to the sailmaker's mate, to be exchanged. At the Great Lakes Naval training station, when a sailor was about to “shove off ...

¹¹⁰ Great Britain, Privy Council, *Regulations and Instructions*, 222; Gillespie, *Advice to the Commanders and Officers on His Majesty's Fleet*, 21; Allison, *Sea Diseases*, 189; Chisholm, *A Manual of the Climate And Diseases*, 212.

¹¹¹ Great Britain, Privy Council, *Regulations and Instructions*, 98.

[but] lacked any of the various articles that make up a complete sea bag, he was at once outfitted with them.” Furthermore, accounts from the HMS *Britania* note the use of old hammocks and sails to make twine, swabs, and hammock numbers and to repair salvageable hammocks.¹¹²

Author John Masefield believes sailors paid for their hammocks and replacements, regardless of whether the destruction was the fault of the sailor or took place in battle. This is supported by a letter written by sailor Henry Walker in 1805 in which he explains how his “hammock and bedding had ... been shot away in action, which is the more unfortunate as I can so ill afford to replace them.”¹¹³ Likewise, a union sailor in 1860 observed,

Each man was furnished with a black bag in which to put his clothes; one pair of white duck pants, one white shirt with blue collar, one pair of blue pants, one blue shirt with wide collar and a white star worked on each corner; two pairs of woolen stockings, undershirts and drawers, one canvass hammock, two single, or one double blanket, for all of which we were obliged to sign a book; then a blank form was filled out and given to each man, being a plain statement of what he owed the ship, the same to be taken out of his pay at the end of his term of service. Looking the paper over I found that I was in debt to the ship three months’ pay, or as Tom expressed it, we had got to work for three months, or perhaps four, before we could be allowed to draw cash, and in all that time perhaps, could not set foot on shore.¹¹⁴

A United States Naval Academy manual in 1917 instructed midshipmen to purchase a mandatory list of supplies, including a hammock and bedding, from the naval store.¹¹⁵

¹¹² Chisholm, *A Manual of the Climate And Diseases*, 212; Flynn, "HMS *Pallas*," 103-104; Nordhoff, *Man-of-war Life*, 63; Luce, *Seamanship*, 308; Buzzell, *The Great Lakes Naval Training Station*, 104-105; Great Britain, Royal Navy, *Boatswain's Account, HMS Britania, 1805*, Royal Naval Museum, Portsmouth 53/4 in *Shipboard Life and Organization, 1731-1815*, Publications of the Naval Record Society volume 138, edited by Brain Lavery (Aldershot, England: Ashgate Publishing Limited, 1998), 593-600.

¹¹³ Masefield, *Sea Life in Nelson's Time*, 184; Jackson, *Logs of the Great Sea Fights*, 327.

¹¹⁴ Blanding, *Recollections of a Sailor Boy*, 36-37.

¹¹⁵ Earle, *Life at the U.S. Naval Academy*, 347.

During the age of sail, aboard merchant and nations other than Great Britain and the United States vessels, it seems sailors were wholly responsible for supplying their own hammocks. Jean-Baptiste du Tertre explained, in 1667, how French sailors still bartered with New World natives for hammocks. Around the same time, an English sailor aboard a merchant vessel describes how he was forced to sell his cloak in order to buy a hammock. Sailors who signed on with the Dutch East India Company also supplied their own hammocks. Richard Henry Dana Jr. speaks of carrying “my chest and hammock” aboard the ship in his iconic 1836 memoir. Another sailor, in 1800, aboard the slaving vessel *Crescent*, owned by the firm Throgmorton and Anderson, recounts bringing his own hammock with him from Liverpool and how men on the ship regularly left the vessel’s employ without taking their hammock with them or giving it away to another crew member.¹¹⁶

The evidence seems to indicate that the hammock that a sailor received, whether or not he reimbursed the navy for it, was his for the duration of his service; many sources cite a sailor’s ownership and responsibility over the care of his hammock. Multiple sources speak of sailors being ready at all times to “lash and carry” their bag and hammock. One example of this is in 1744, when a transfer order moved a group of men from the HMS *Leopard*, including the instruction to “take their hammocks only.” Throughout the eighteenth, nineteenth, and twentieth centuries, sailors took their hammocks with them from training station, to ship, to leave, and back to sea. Charles Nordoff illustrates how they took their hammocks ashore with them during

¹¹⁶ Tertre, *Histoire Generale des Antilles*, 385 quoted from Davis, *American Sailing Ships*, 248; Nicholas A. M. Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815* (New York: W.W. Norton and Company, 2005), 132; Mentzel, *Life At the Cape In Mid-eighteenth Century*, 21; Richard Henry Dana Jr., *Two Years Before the Mast: A Personal Narrative of Life at Sea* (New York: Macmillan Company, 1840), 195; Samuel Robinson, *A Sailor Boy's Experience Aboard a Slave Ship* (Scotland: GC Book Publishers Limited, 1867), 71, 97, 98; Great Britain, Royal Navy, Ship Administration WQB/40, *Captain's Orders, HMS Pegasus, 1786-1788 in Shipboard Life and Organization, 1731-1815*, Publications of the Naval Record Society volume 138, edited by Brain Lavery (Aldershot, England: Ashgate Publishing Limited, 1998), 1087.

leave. Various sources, including a United States Naval manual, 1941, and Department of the Navy regulations, 1884, instructed sailors to take their hammocks with them during a station transfer. The only item altered was the numbered patch on the hammock. Even those moved to a sick bay or hospital on shore brought their hammocks with them. Their issued hammock even remained their property in death as it served as a coffin at sea.¹¹⁷

Although hammocks did not directly cause the size of ship crews to increase, they facilitated the need that came with growing men-of-war and extensive armament. It did, however, cause ships to undergo structural changes. They allowed for the removal of bulky cabins in place of light surface additions in the form of hardware for the slinging of hammocks. Additionally, they required specific sleeping materials, forcing the navy to outfit sailors and form a standardized kit. Originally, sailors were lucky to have access to a hammock at all. In 1629, once the English navy began to outfit ships with hammocks, there was only one for every two men. This meant hot bunking. As one sailor ended his watch, he occupied the hammock of the man who just turned out to start his watch. Eventually, although the exact date is unknown, each man had his own hammock. By the mid to late eighteenth century, ships carried two hammocks for every sailor, so that “the spare one [was] constantly kept clean.” This allowed sailors to swap out their hammock for the clean one, then clean and dry the dirty one each week, improving health and hygiene and contributing to regulations and routine.¹¹⁸

¹¹⁷ Ammen, *The Old Navy and the New*, 77, 338; Great Britain, Royal Commission on Historical Manuscripts, *Report on the Manuscripts*, 63; Luce, *Seamanship*, 307-309; Nordhoff, *Man-of-war Life*, 197, 334; United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment, Government, and Instruction of Naval Apprentices, as Authorized by Circular of Navy Department, Dated January 1, 1884 [with Routine on Board Stationary and Cruising Training Ships]* (Washington, D.C.: Congressional Document, 1884), 19; John T. Tuthill, *He's in the Navy Now* (New York: R. M. McBride and Company, 1941), 23; Shippen, *Thirty Years at Sea*, 157-158.

¹¹⁸ Oppenheim, *A History of the Administration of the Royal Navy*, 235; Gillespie, *Advice to the Commanders and Officers*, 21; McLeod, *British Naval Captains of the Seven Years' War*, 111; Masefield, *Sea Life in Nelson's Time*, 132; Allison, *Sea Diseases*, 189; Flynn, "HMS Pallas," 103-104; Bowen, *The Naval Monument*, 81.

Chapter 3

Sleeping Conditions

Prince George's 'fun' was frequently at the expense of others. His practical jokes had sadistic undertones, especially when the vulnerable victim would climb into his hammock at night to find two marlinspikes placed where they would do the most harm.

-Dennis Friedman

Prior to the discovery and widespread adoption of hammocks, sailors slept on bare decks or in confined coffin-like cabins. Navies transitioned to hammocks for a number of reasons, including cost efficiency, health benefits, removable and therefore reusable space, and improved conditions and quality of sleep. Most believed sleeping conditions created by hammocks were far superior to prior sleep settings, and even better than bunks; however, they still came with several negative attributes along with the numerous positives.

Space

Although hammocks significantly improved sleeping conditions aboard maritime vessels, the circumstances were still not lavish or perfect. Much of the discomfort and negative attributes of sleeping in hammocks resulted from overcrowding. Naval ships sought to arm a vessel with as much artillery and as many men as possible in order to make it as deadly a warship as imaginable. George Robertson estimated the average sailor aboard a naval ship had slightly more than twelve square feet of living space. As one sailor, in the 1930's, James Cox, said about the living conditions aboard maritime vessels, "You are shoulder-to-shoulder all the time."¹¹⁹

¹¹⁹ Robertson, *Discovery of Tahiti*, xxxiv-xxxv; Christopher McKee, *Sober Men and True: Sailor Lives in the Royal Navy, 1900-1945* (Cambridge: Harvard University Press, 2002), 94.

Men such as Albert Gihon, urged the Royal Navy to calculate the number of sailors placed on a ship based on the size of the vessel rather than the possible armament. In 1871, he writes,

The berthing capacity of every vessel should be determined by a commission of officers, wholly or in part of the medical corps, and should be the guide to the regulation of the armament, rather than that a certain number of guns should be put on board and a certain allowance of human muscle, like that of tackle and breechings, be subordinate thereto.¹²⁰

Despite these recommendations, overcrowding on naval ships was still all too common (see figure 14).

On a well-organized naval vessel, hammocks swung in rows parallel to the keel, allowing hammocks to move with the sway of the ship. Each row interlocked with the rows fore and aft by eighteen inches, so that one row's feet would touch the next row's shoulders and so on. Each space was fourteen to twenty inches wide; however, because ships were prone to overcrowding, sailors were rarely afforded more than fourteen inches.¹²¹

When following the guidelines dictated by the *Perpetual Berthing and Watch Bill Book*, in 1797, however, the space allotted each man effectively doubled. Although the original intentions of the book was to ensure orderly sleeping arrangements that optimized the efficiency of the ship and sailors as well as prevent the vessel from becoming unbalanced during night watch, it created the added benefit of additional sleeping space per sailor. This meant by alternating the placement of men based on their watch assignment, when one watch was on deck

¹²⁰ Gihon, *Practical Suggestions in Naval Hygiene*, 94.

¹²¹ Ross, *The Perpetual Berthing in Shipboard Life and Organization*, 258; McKee, *Sober Men and True*, 94; Allison, *Sea Diseases*, 55, 129; Falconer, *An Universal Dictionary of the Marine*; Naval Medical Officer, *An Exposition of the Case of the Assistant-surgeons of the Royal Navy*, 3rd edition (London: J. Churchill, 1850), 18-19; Masefield, *Sea Life*, 131; Gihon, "The Need of Sanitary Reform in Ship-Life," 88; Terry Coleman, *Nelson Touch: The Life and Legend of Horatio Nelson* (New York: Oxford University Press, 2002), 12; Lavery, *Nelson's Victory*, 114; Lavery, *Royal Tars*, 178.

the hammocks on each side of every sailor below were empty, doubling their sleeping space from fourteen to twenty eight inches.¹²²

Despite the extra room created by alternating shifts, men were still packed in tightly. Several sailors described the situation in vivid detail. Once such sailor, William Don, states in 1855, “At night the lower deck, on which were slung 800 hammocks, was a curious sight. The hammocks, bulging with the sleepers, were like herrings in a barrel...”¹²³ Albert Gihon explains how “the movement of one man disturbs all those among whom he is wedged.”¹²⁴ Stephen Blanding recalled that “The hammocks were hung very closely together, so closely in fact, that when one occupant in the middle, or between two other hammocks, got out, the hammocks would close up like a jack knife, from the pressure of the neighboring hammocks.”¹²⁵

In later years, after the adoption of battle ships, and before the prevalence of bunks, each man was afforded more space, with twenty inches per hammock and roughly one hundred and fifty cubic feet of living space. Unlike naval vessels, merchant ships generally housed sailors in the forecabin on permanent bunks. This limited the number of men a vessel could take on; however, they occasionally built so many bunks into the small space that overcrowding was possible, but still far less frequent than on naval ships.¹²⁶

¹²² Great Britain, Royal Navy, Ship Administration WQB/40, *Captain's Orders, HMS Indefatigable, 1812* in *Shipboard Life and Organization, 1731-1815*, Publications of the Naval Record Society volume 138, edited by Brain Lavery (Aldershot, England: Ashgate Publishing Limited, 1998), 188; Ross, *The Perpetual Berthing* in *Shipboard Life and Organization*, 258; *The History of a Ship From Her Cradle to Her Grave*, 99; Nicholas A. M. Rodger, *The Wooden World: An Anatomy of the Georgian Navy* (Annapolis: Navy Institute Press, 1986), 61; Allison, *Sea Diseases*, 55.

¹²³ Don, *Reminiscences of the Baltic Fleet of 1855*, 33.

¹²⁴ Gihon, *Practical Suggestions in Naval Hygiene*, 94.

¹²⁵ Blanding, *Recollections of a Sailor Boy*, 114.

¹²⁶ Lavery, *Able Seamen*, 279; Paul A. Gilje, *Liberty on the Waterfront: American Maritime Culture in the Age of Revolution* (Philadelphia: University of Pennsylvania Press, 2004), 76-77; Tim Carter, *Merchant Seamen's Health, 1860-1960: Medicine, Technology, Shipowners and the State in Britain* (Woodbridge: Boydell Press, 2014), 13, 88.

Comfort

Aside from the overcrowding, most sailors regarded sleeping in hammocks as a comfortable experience. Several “swore that nothing in the world was as comfortable as a hammock...”¹²⁷ Others reported “sleep[ing] very comfortably” or “sleeping soundly in [their] swinging bed.”¹²⁸ Some men even chose to sleep in their hammocks rather than bunks while in naval barracks or prisoner camps. Most of the reports of comfort were in direct relation to the ability of a hammock to rock like a cradle with the motion of the ship, simultaneously lulling a sailor to sleep while diminishing the hazards of rolling about the deck. One man even said he “found it possible to go to sleep and rest soundly on a hammock of this kind when I could not have done so on the most luxurious bed.”¹²⁹

The cradle-like motion often provided respite for those suffering from seasickness. Charles Darwin wrote, “nothing but lying in my hammock did me any good.”¹³⁰ Furthermore, their unique traits and comforts were greatly welcomed during a storm. Richard Henry Dana Jr., in his 1840’s *Two Years Before the Mast*, stated “hammocks ... are the best things in the world to sleep in during a storm.”¹³¹ Although some difficulties arose during particularly violent storms, such as hammocks being “pitched against each other and the bulwarks,” sailors still generally considered them preferable to bunks.¹³² William Don, in 1855, vocalized his surprise

¹²⁷ Mason, *Battleship Sailor*, 119.

¹²⁸ Laurence Brockliss, John Cardwell, and Michael Moss, *Nelson's Surgeon: William Beatty, Naval Medicine, and the Battle of Trafalgar* (Oxford: Oxford University Press, 2005), 47; Nordhoff, *Man-of-war Life*, 76, 79.

¹²⁹ Leech, *Thirty Years from Home*, 202; Ammen, *The Old Navy and the New*, 318; Shippen, *Thirty Years at Sea*, 145; McKee, *Sober Men and True*, 71, 94.

¹³⁰ Charles Darwin, *The Autobiography of Charles Darwin* (New York: Barnes & Noble Publishing, 2005), 146.

¹³¹ Dana, *Two Years Before the Mast*, 239-240.

¹³² Brockliss, Cardwell, and Moss, *Nelson's Surgeon*, 122; Brown, *Poxed and Scurvied*, 90.

regarding a hammock's comfort, stating, "I had a real, genuine night's rest ... my first thoughts were how very comfortable a hammock is ... it is distinctly preferable to a hard ship's bunk."¹³³ During a storm, those in bunks, such as officers and merchant sailors, often found themselves tossed about. One merchant sailor, from the 1880's, explained his precarious sleeping position to prevent rolling off his bunk: "By bracing my back against the bulkhead and drawing up my knees against the front of the bunk and holding on with both hands, I soon wedged myself in and in this position slept."¹³⁴

Some sailors, however, found hammocks rather uncomfortable. One sailor remarked, "This swinging couch being anything but agreeable to a 'land-lubber' like myself, it was a long time before 'nature's soft muse' had 'weighed my eyelids down.'"¹³⁵ While others expressed their thoughts that the natural shape of a hammock curved the spine in an uncomfortable and unnatural manner.¹³⁶

Others disliked hammocks due to feelings of safety. Many spoke about their experiences or fears of falling out of their hammock while they slept. One sailor stated, "You get in bed at last ... and become alarmed lest they should be broken by a fall when asleep, for it is no easy matter to keep yourself balanced while awake: I tie myself in my hammock and so do pretty

¹³³ Don, *Reminiscences of the Baltic Fleet of 1855*, 23.

¹³⁴ Harlow, *The Making of a Sailor*, 18-19, 55-56, 268; Richard Corfield, *Silent Landscape: The Scientific Voyage of HMS Challenger* (Washington D.C.: Joseph Henry Press, 2002), 66.

¹³⁵ *Maritime Scraps; Or, Scenes In the Frigate United States During a Cruise In the Mediterranean* (Boston: 1838), 12.

¹³⁶ "Roughing it in Comfort," *Armada International* 30, no.6 (December 2006/January 2007); Taylor and Schmid, *The Battlecruiser HMS Hood*, 117.

well.” These fears were not unwarranted. The surgeon general listed ninety-four men injured by hammock related falls in 1926.¹³⁷

Whether they viewed hammocks as exceedingly comfortable or not, the large majority of sailors found hammocks preferable to previous sleeping conditions on the bare deck, however, after a particularly bloody battle men reverted to sleeping on decks because enemy fire ripped most of a ship’s hammocks to shreds. This resulted in men sleeping on bare decks until the ship was reprovisioned. There were, however, a small number who found hammocks so unbearable that they slept elsewhere whenever possible.¹³⁸

Although most considered a hammock comfortable once in it, learning to mount and dismount one was not an easy task. Like most aspects of life at sea, getting in and out of a hammock was a learned skill, requiring practice to become proficient. A seasoned sailor eventually perfected the technique. A sailor would grab the hooks overhead, swing his body slightly, and land in his hammock.¹³⁹

Watching new sailors, or greenies, attempt to alight into their hammock for the first time was often a special event for vets. One young sailor, in the 1850’s, recalled,

The old vets would have their hammocks swung in a jiffy and then circulate about the deck to watch Greeny put up his little bed ... At last Greeny opens his hammock takes a jump upwards and lights upon it, but only to roll off on the other side and fall sprawling on the deck. A derisive laugh greets the mishap from those in the immediate vicinity. He approaches the hammock again as if it was a kicking horse, and tries a second time. He sits down on the edge of it, the hammock tilts and he is again thrown to the deck, this time, face downwards.

¹³⁷ Jones, *Sketches of Naval Life*, 11-12; Frederick Harrod, *Manning the New Navy: The Development of a Modern Naval Enlisted Force, 1899-1940*, (Westport, Connecticut: Greenwood Press, 1978), 149; Mason, *Battleship Sailor*, 119.

¹³⁸ Jackson, *Logs of the Great Sea Fights*, 62-63, 153-54, 287, 327; Robertson, *Synopsis Morborum*, 89, 320.

¹³⁹ Nordhoff, *Man-of-war Life*, 23.

Finally some good-natured vet shows him how it is done, and the would-be sailor turns in to sleep.¹⁴⁰

Other sailors explain various beginner methods of getting one's self into a hammock, usually employing a sea trunk or chair, often resulting in the same difficulties. One man likened it to "boarding an Eskimo kayak in rough water."¹⁴¹

Once asleep, new sailors frequently forgot they slept in the novel contraption. New recruits who woke in the middle of the night or in the morning, startled by the boatswain's whistle, often fell swiftly to the deck or received a sore skull from sitting up too quickly and striking the beam above. As one man explains, in 1838, "I was awakened the next morning by the shrill pipe of the boatswain ... and in my eagerness to arise, and totally forgetting the kind of resting-place I had passed the night in, at my first spring I...found myself sprawling at full length on the deck, several feet from my hammock."¹⁴²

Occasionally a sailor fell to the deck in other unexpected ways. From time to time, a hammock clew would become too old and snap while a sailor slept. On other occasions, men would purposefully cut down other sailors' hammocks. Sometimes it was in jest, while other times it was malicious. Frequently, especially if the head rather than the foot clew was cut, the fall could result in severe injury.¹⁴³

¹⁴⁰ Blanding, *Recollections of a Sailor Boy*, 52-53.

¹⁴¹ Jones, *Sketches of Naval Life*, 11-12; Mason, *Battleship Sailor*, 119.

¹⁴² *Maritime Scraps*, 12; Nordhoff, *Man-of-war Life*, 76.

¹⁴³ *The History of a Ship From Her Cradle to Her Grave*, 113-114; Blanding, *Recollections of a Sailor Boy*, 52-53.

Wetness

One of the main factors leading to discomfort regarding hammocks was wetness. For the most part, water and a damp environment was an unstoppable force when sailing. When living in a habitat surrounded by water, it is impossible to keep anything dry for long, a reality all sailors are well aware of.

Whether soaked with sea spray or drenched by rain, a sailor often retired below in wet clothes. Not all men had the presence of mind, the desire, or the energy to remove their sodden garments before turning into their hammocks. Furthermore, many captains and officers felt the same in regard to forcing men to disrobe before bed. Sleeping in soggy clothes led to wet hammocks, which probably was not an issue for a single night. Multiple soaked nights or the inability to open hammocks to the sun every day, due to various circumstances, however, created a perpetually damp, often smelly, bed. Numerous regulations, reports, and individuals sought to stem this problem through rules, education, and frequent airing; however, moist clothes in hammocks were still a regular occurrence.¹⁴⁴

Even when sailors removed their wet clothes, a soggy hammock was not always avoidable. Ships often leaked in multiple places. Water could enter through hatchways, gun ports, or any seam not tightly caulked. This often led to an abundance of water between decks, creating a dampness that permeated hammocks and clothes. In warmer climates, or particularly poor ships, the deck seams could expand, resulting in water leaking onto sleeping sailors.¹⁴⁵ Storms made leaking ships that much worse, James Lind, in 1757, eloquently details the situation endured by many sailors,

¹⁴⁴ Gihon, *Practical Suggestions in Naval Hygiene*, 44, 96, 146; Gihon, "The Need of Sanitary Reform in Ship-Life," 88; Rodger, *The Wooden World*, 62.

¹⁴⁵ Rodger, *The Wooden World*, 62; Masfield, *Sea Life*, 25-26; Harrod, *Manning the New Navy*, 12.

During such furious storms, the spray of the sea raised by the violence of the wind, is dispersed over the whole ship; so that the people breathe, as it were, in water for many together. The tumultuous waves incessantly breaking in upon the decks, and wetting those who are upon duty as if they had been ducked in the sea, are also continually sending down great quantities of water below; which makes it the most uncomfortable wet lodging imaginable: and, from the labouring of the ship, it generally leaks down, in many places, directly upon their beds. There being here no fire or sun to dry or exhale the moisture, and the hatches necessarily kept shut, this moist, stagnating, confined air below becomes most offensive and intolerable. When such weather continues long, attended with sleet and rain, as it generally is, we may easily figure to ourselves the condition of the poor men; who are obliged to sleep in wet cloaths and damp beds, the decks swimming with water below them; and there to remain only four hours at a time; till they are again called up to fresh fatigue, and hard labour, and again exposed to the washing of the sea, and rains.¹⁴⁶

Regulations instructed the airing of bedding at regular intervals and whenever necessary or possible; however, weather and circumstances often prevented this, leading to long durations of wet hammocks.¹⁴⁷

Merchant sailors often had it slightly better in comparison. Sleeping in forecastles set on the top deck, water did not leak from above or pool at the floor. Furthermore, the higher position allowed for more ventilation and therefore easier drying. Not all merchant sailors, however, were so lucky. When slavers carried a full human cargo, sailors frequently slept above deck under a tarp, which provided little shelter in bad weather.¹⁴⁸

¹⁴⁶ James Lind, *A Treatise on the Scurvy: In Three Parts, Containing an Inquiry Into the Nature, Causes, and Cure, of that Disease* (London: A. Millar, 1757), 69-70.

¹⁴⁷ Great Britain, Royal Navy, *Regulations and Instructions Relating to His Majesty's Service at Sea*, 8th edition, 1806 in *Shipboard Life and Organization, 1731-1815*, Publications of the Naval Record Society volume 138, edited by Brain Lavery (Aldershot, England: Ashgate Publishing Limited, 1998), 53-54.

¹⁴⁸ Nordhoff, *Man-of-war Life*, 158-159; Robinson, *A Sailor Boy's Experience*, 56.

Ventilation

Prolonged wet conditions generally led to a rancid environment. Extensive periods of damp and unclean hammocks, decks, and sailors quickly led to an overwhelming stench. Albert Gihon wrote several papers on the sanitary issues plaguing naval life. He writes, in 1871,

The graphic descriptions by reporters of the filth of some of the unclean and degraded poor of our great cities would find a parallel on the berth-decks of many of our men-of-war at night ... It is impossible to remain many minutes among the hammocks without experiencing a sensation of suffocation and nausea; indeed it is only necessary to lean over the main-hatch, toward the close of the first watch, to recognize the heavy mawkish odor that arises and betokens the over-crowding of human beings. That these beings are injuriously affected by what appeals so forcibly to our senses and excites disgust, does not admit of question. I have referred incidentally to this subject of overcrowding when speaking of ventilation....¹⁴⁹

Despite numerous reports of overpowering odors, there were still those who described clean, fresh environments below deck.¹⁵⁰

Much of the foul smells could be attributed to poor ventilation. So long as the weather was fair, ships kept hatches, portholes, and gun ports open, allowing air to circulate, drying the decks, and refreshing the stagnant air. If the weather was at all unfavorable, however, only a couple of hatchways remained open.¹⁵¹ Royal Navy regulations set forth in 1806 attempted to address and rectify the ventilation and dampness problem, stating,

As cleanliness, dryness and good air are essentially necessary to health, the Captain is to exert his utmost endeavors to obtain them for the ship's company in as great a degree as possible. He is to give directions ... that the lower decks are washed as often as the weather will admit of their being properly dried ... and the

¹⁴⁹ Gihon, *Practical Suggestions in Naval Hygiene*, 94.

¹⁵⁰ Gihon, "The Need of Sanitary Reform in Ship-Life," 88; Allison, *Sea Diseases*, 62.

¹⁵¹ Robertson, *Discovery of Tahiti*, xxxiv-xxxv; Iris Bruijn, *Ship's Surgeons of the Dutch East India Company: Commerce and the Progress of Medicine in the Eighteenth Century* (Amsterdam: Leiden University Press, 2009), 74; Maryam Philpott, *Air and Sea Power in World War I: Combat and Experience in the Royal Flying Corps and the Royal Navy* (London: IB Tauris, 2013), 73.

ports are to be opened whenever the weather will admit of it, and ... as few interruptions as possible may be opposed to a free circulation of air. The ventilators are to be continually worked and the hold and store rooms ventilated by windsails. The ship is always to be pumped dry, the pump well frequently swabbed and a fire, with proper precautions, let down to dry it. If the weather should prevent the lower deck ports from being opened for any considerable time, fires are to be made in the stoves supplied for that purpose and the lower decks may be scrubbed with dry sand.¹⁵²

Although captains and crew regularly sought to keep the tween decks clean, dry, and free of encumberments, they could not control the weather. Furthermore, forced-air ventilation was not seriously considered until the late nineteenth century, and even then, it was more in response to engine emissions than the damp, stifling environment.¹⁵³

Officers by Comparison

Officers generally slept separated from the average sailor, receiving more space to sling their hammocks, or even sleeping in bunks. As the highest-ranking officer, captains received their own cabin, located at the rear on the upper deck. On occasion, he relinquished it to a prominent passenger or to an Admiral if one was aboard. Depending on the size of the ship and the inclination of the captain, he sometimes shared his quarters with his first mate. A standing bed, a table, and often other items of furniture adorned the Captain's cabin.¹⁵⁴

¹⁵² Great Britain, Royal Navy, *Regulations and Instructions in Shipboard Life and Organization*, 53-54.

¹⁵³ Elliot Arthy, *The Seaman's Medical Advocate: Or, an Attempt to Shew that Five Thousand Seamen Are, Annually, During War, Lost to the British Nation Through the Yellow Fever* (London: Meffrs Richardson, Royal-Exchange; and Mr. Egerton, 1798), 210-211; Dana, *Two Years Before the Mast*, 194; Harrod, *Manning the New Navy*, 12; United States Naval Institute, *Proceedings of the United States Naval Institute*, volume 6 of 12 (Washington, D.C.: United States Naval Institute, 1886), 237.

¹⁵⁴ Ross, *The Perpetual Berthing in Shipboard Life and Organization*, 260; Smith, *Captain John Smith*, 737, 792; Archibald and Woodward, *The Fighting Ship in the Royal Navy*, 78; Robert Gardiner and Brian Lavery, *The Line of Battle: The Sailing Warship 1650-1840* (Annapolis: Naval Institute Press, 1922), 144.

The type of bedding occupied by officers differed. Officer quarters had no standard outfitting and could vary based on a number of circumstances such as rank, ship size, era, or nation. Most officers, however, usually slept in a doublewide hammock, a bunk, or a cot. Many felt a cot or bunk was a catch twenty-two. It afforded the sleeper more space, but did not swing with the movement of the vessel. Officers generally received their own sleeping areas or cabins. These cabins could occupy up to one-third of the lower deck. Sometimes the cabins were stationary wooden structures. More frequently, however, the quarters were actually just a separate area, known as the wardroom, in the aft of the ship, partitioned by removable canvas to prevent obstructions during battle.¹⁵⁵

If wooden enclosed cabins were available, senior officers, such as lieutenants, surgeons, pursers, chaplains, gunners, boatswains, and carpenters, or passengers, like Charles Darwin, received them first. Although private and slightly more spacious, they were still not luxurious. Darwin believed his cabin to be “the capital one, certainly next best to the Captain’s ...,”¹⁵⁶ yet Admiral Sir James Sullivan, in 1831, explains it as,

The narrow space at the end of the chart-table was his only accommodation for working, dressing, and sleeping; the hammock being left hanging over his head by day...His only stowage for clothes being several small drawers in the corner, reaching from deck to deck; the top one being taken out when the hammock was hung up, without which there was not length for it, so then the foot-clews took the place of the top drawer.¹⁵⁷

¹⁵⁵ Great Britain, Royal Commission on Historical Manuscripts, *Report on the Manuscripts*, 40-41; *The History of a Ship From Her Cradle to Her Grave*, 99; Davis, *American Sailing Ships*, 91, 109; Mason, *Battleship Sailor*, 8; Corfield, *Silent Landscape*, 66; Taylor and Schmid, *The Battlecruiser HMS Hood*, 105, 124; Robertson, *Discovery of Tahiti*, xxxiv-xxxv; Gardiner and Lavery, *The Line of Battle*, 144.

¹⁵⁶ Ammen, *The Old Navy and the New*, 34; Brockliss, Cardwell, and Moss, *Nelson's Surgeon*, 15; Bruijn, *Ship's Surgeons of the Dutch East India Company*, 66; R. J. Cressman, “Historic Fleets,” *Naval History* 29, no. 5 (October 2015), 64; Masfield, *Sea Life in Nelson's Time*, 23, 28, 98; Darwin, *The Autobiography of Charles Darwin*, 142; Keith Thomson, *The Young Charles Darwin: Influences and Ideas* (New Haven: Yale University Press, 2009), 142.

¹⁵⁷ Francis Darwin, *The Life and Letters of Charles Darwin* (New York: D. Appleton and Company, 1887), 192.

Petty officers not afforded cabins or canvas enclosures hung their hammocks together. Depending on the layout of the vessel, they slept along the sides or at the rear of the gundeck. They received the benefit of twenty-eight or more inches per hammock rather than the typical fourteen. Although slightly better off regarding all problems due to better location and added protection, officers still faced many of the difficulties plaguing the average sailor's sleeping conditions, including dampness, crowding, and poor ventilation. On merchant ships, those that had more than a captain and a first mate, slumbered on bunks in a private cabin at the stern, while the crew slept in the forecastle.¹⁵⁸

Officers rarely had to care for their own hammocks. They often received hammock boys or men who stored and cleaned their hammocks for payment of grog; however, petty officers sometimes did not. Officers' hammocks were stored together in the hammock netting and cleaned collectively on separate lines.¹⁵⁹

Comradery

In an environment ruled by routine and regulation, fun, humor, and merriment was not always abundant, and sailors seized opportunity where and when they could. Some employed hammocks in search of such amusements and as a tool in creating friendships. As explained, the art of turning in and out of a hammock required much practice to master. Veteran sailors delighted in opportunities to watch new men learn the skill. The older laughed and jested as the younger flailed about and repeatedly fell to the deck. After everyone had a good laugh, many

¹⁵⁸ Coleman, *Nelson Touch*, 12-13; Masefield, *Sea Life*, 132; Rodger, *The Wooden World*, 67; Bruijn, *Commanders of Dutch East India*, 229; Carter, *Merchant Seamen's Health*, 88.

¹⁵⁹ Great Britain, Admiralty, *The King's Regulations and Admiralty Instructions for the Government of His Majesty's Naval Service. Revised Edition Embodying the Alterations Effected in the Regulations by Addenda, or Otherwise, up to the 31st March 1905* (London: His Majesty's Stationary Office, 1906), 230, 300; Jones, *Sketches of Naval Life*, 99, 219, 220; Masefield, *Sea Life*, 76.

older sailors often took pity on their younger counterparts, instructing them in the best techniques, creating bonds and friendship. Sailors also took pleasure in mocking one another if circumstances, such as a broken clews or an overly startled awakening, brought a man to the deck without warning.¹⁶⁰

Sailors also used hammocks to play pranks on one another. Most often men would cut hammocks clews, causing the inhabitant to fall to the deck in a tangled heap, much to the amusement of those sailors sleeping nearby. Other men would place items, such as marline spikes and round shot, in another man's hammock, generally in the most sensitive locations possible.¹⁶¹ One sailor, from the late nineteenth century, tells of an amusing prank on two unsuspecting and intoxicated men.

I remember a night when one of them, who went by the name of Jack, came tumbling down the hatchway in a beastly state of intoxication, closely followed by another of the gang. The pair were then lashed up in their hammocks by the middle, and triced up to the beams, the head and foot clews being let go, and there they hung like the Golden Fleece till cut down.¹⁶²

Despite the many drawbacks and inconveniences, it seemed a rather unanimous feeling that hammocks were far superior to prior sleeping conditions. Most even believing them better than bunks on merchant vessels. Officers were afforded slightly better sleeping conditions, although still dealing with many of the negatives such as dampness, poor ventilation, and overcrowding. Tight spacing and the adoption of hammocks even created opportunities for

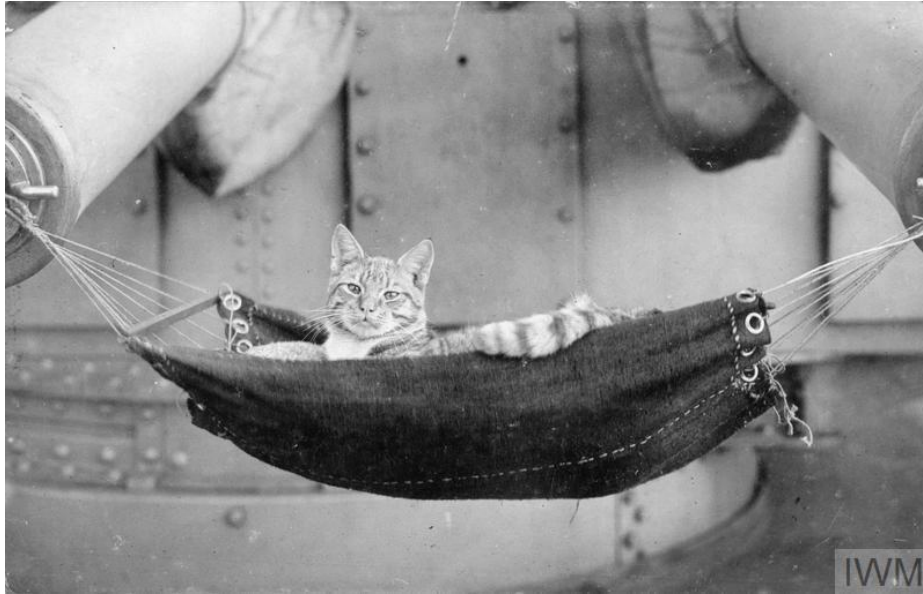
¹⁶⁰ Blanding, *Recollections of a Sailor Boy*, 52-53; Leonard, *USS Constellation on the Dismal Coast*, 8; Nordhoff, *Man-of-war Life*, 22-24; *Maritime Scraps*, 12-13.

¹⁶¹ Blanding, *Recollections of a Sailor Boy*, 53; John Newton, *An Authentic Narrative of Some Remarkable and Interesting Particulars in the Life of John Newton*, edited by Richard Cecil (Edinburgh: J. Anderson, 1825), 34; Lavery, *Nelson's Victory*, 163; Dennis Friedman, *Darling Georgie: The Enigma of George V* (London: Peter Owen Publishers, 2014), 47; Masfield, *Sea Life in Nelson's Time*, 82.

¹⁶² William Robert Kennedy, *Hurrah for the Life of a Sailor!: Fifty Years in the Royal Navy* (London: Blackwood, 1900), 4.

bonding and pranks among sailors. Overall hammocks had a profound effect on sleeping conditions and therefore daily life.

Figures 18 and 19: Small hammocks made for cats by sailors in comradery.



Source: Imperial War Museum, Reast Cecil Victor, HU 99090.



Source: Imperial War Museum, Admiralty Official Collection, A 6410.

Chapter 4

Effects on Daily Life

At 7.30 am I heard the word passed that the starboard bridle port on the gun-deck had been burst in by the sea, and I knew that the ship was gone if we did not keep the water out in some way. I called for volunteers and went forward. Every plunge the ship made, water came pouring in through a space six feet by four, completely flooding the gun-deck. I ordered capstan bars and hammocks to be brought at once, and we began our fight for life...we got a table, and, standing it up with both tackles hooked behind, we began to pile hammocks in front, and for five hours we had the most desperate struggle.

- Frederic Stanhope Hill

Hammocks affected a sailor's daily life, including various regulations, daily routines, and alternative uses for hammocks during the day. Maritime life thrived on rules, regulations, and routine, albeit on naval ships far more than merchant vessels. Hammocks were an integral part of routine, adhering to several regulations. Since merchant ships did not consistently use hammocks, they did not factor into regulation or routine. Although the majority of information about hammocks' involvement in regulation and routine derives from the British Royal Navy and the United States Navy, it is safe to assume any navy that depended heavily on hammocks exhibited similar rules and routines. Furthermore, the genius and ingenuity of navies found alternative uses for hammocks during the day when no man slept.

Regulations

Regulations and rules are the foundation of any military organization throughout history. The use of hammocks within the Royal and United States Navies was no exception. Regulations

regarding hammocks were sparser through the sixteenth, seventeenth, and eighteenth centuries; however, by the nineteenth century they were abundant.

The first set of regulations pertains to the outfitting of hammocks, for each sailor had to possess one before other regulations could apply. By 1798, sailors in the Royal Navy each received two hammocks so that he would always have a clean one. The boatswain maintained this regulation, ensuring every man observed cleaning and trading protocols and did not misuse his hammocks. Additionally, regulation stated each sailor must own at least one mattress cover and a blanket.¹⁶³

These items belonged to each sailor for the duration of his enlistment; therefore, if a sailor transferred service stations, he brought his hammocks and bedding with him. Identification numbers were sewn onto every hammock to ensure men kept to their own. If transferred, his hammocks received a patch with his new number, guaranteeing ownership. In the Royal Navy, neglecting, selling, or discarding one's hammock was a punishable offence. Possible disciplinary actions included imprisonment up to three months, discharge, reduction in rank, solitary confinement, or extra watch shifts. In addition to the elimination of grog rations and reduction of smoke breaks along with all smoke breaks and meals supervised by sentries. Plus the decreased dinner time of only thirty minutes followed by standing at attention for the remainder of the mealtime on the upper deck, then standing at attention between eight and ten p.m. All or any of these punishments could be issued for up to fourteen days.¹⁶⁴

¹⁶³ Gillespie, *Advice to the Commanders and Officers*, 21; A Captain of the Royal Navy, *Observations and Instructions*, 48; Luce, *Seamanship*, 308.

¹⁶⁴ United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 19; Luce, *Seamanship*, 307, 309; Captain of the Royal Navy, *Observations and Instructions*, 48; Great Britain, Admiralty, *The King's Regulations*, 243, 244, 246, 247.

Regulations also dictated when and where a sailor could sleep. During good weather, a sailor could not be below deck between six and eight p.m. Sailors could not sleep in another man's hammock or anywhere other than his assigned hammock place, especially above deck. Sleeping in another man's hammock was a punishable offence. In the Royal Navy, possible ramifications included deprivation of good conduct badges and medals, solitary confinement, or those listed previously in regards to smoking, grog, meals, and watches. At nine p.m. all men not on watch retired to their hammocks where they had to remain until their watch or the morning bells. Additionally, regulations prohibited loud conversations and disturbances during the night. Once the morning bell rang, sailors woke and dismounted hurriedly or risked being cut down for lingering. Furthermore, officers could administer punishments for failing to wake promptly, including a month without a hammock.¹⁶⁵

Once awake, a sailor quickly lashed his hammock in preparation of daily storage above deck. Regulations stated a hammock required seven turns with a marlin lashings. Once lashed, and the head and foot clews neatly tucked, the sailor carried his hammock above. On deck, before a hammock could be placed in the netting, it was passed through a regulation ring to ensure it was lashed tightly and correctly. If sailors awoke to a call to arms, regulation required only three turns.¹⁶⁶

¹⁶⁵ Bellingshausen, *Voyage of Captain Bellingshausen*, 21, 43; United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 14; Great Britain, Admiralty, *The King's Regulations*, 243, 244, 246, 247; Gihon, *Practical Suggestions in Naval Hygiene*, 146; Nordhoff, *Man-of-war Life*, 131-132; Newton, *An Authentic Narrative*, 34; Masfield, *Sea Life*, 99-100.

¹⁶⁶ Luce, *Seamanship*, 308; Mason, *Battleship Sailor*, 52; Bechervaise, *Thirty-Six Years of a Seafaring Life*, 111; Nordhoff, *Man-of-war Life*, 133; Shippen, *Thirty Years at Sea*, 36; Leonard, *USS Constellation on the Dismal Coast*, 152.

Officers supervised as men placed their hammocks in the designated spot dictated by their assigned number. The last man on deck or those who neglected to stow their hammocks properly were regularly punished.¹⁶⁷

Additional regulations governed various aspects pertaining to health, hygiene, and clothing in relation to hammocks. The most prominent regulation prohibited wet clothes coming in contact with hammocks. Firstly, sailors had to remove any soggy articles before turning in. Secondly, regulations stated men should never stow clothing, especially if sodden, in hammocks, nor place damp hammocks in the hammocks netting. In the Royal Naval, these actions fell under the punishments of general neglect, resulting in the possibilities listed above in regard to meals and smoking. Other less common but more severe health infractions, such as micturating in ones hammock, resulted in indefinite solitary confinement.¹⁶⁸

As early as 1798, regulations demanded bedding be shaken out twice a week, scrubbed twice a month if feasible, thriced up below when fumigating the ship at least once a week, and aired whenever possible. Likewise, in Russia, the Code of Naval Regulations, Orders, and Ordinances required ships to scrub bedding twice a month, on the first and fifteenth, and air them often as weather allowed. The United States Navy also had several similar regulations. Every month sailors cleaned mattress covers on the second and fourth Tuesdays, washed blankets on the third Wednesday, and scrubbed hammocks on the second Thursday, so that men always had a clean hammock. Additionally, all bedding was shaken, aired, and exposed to the sun at least once

¹⁶⁷ Luce, *Seamanship*, 308; A Captain of the Royal Navy, *Observations and Instructions*, 48; Nordhoff, *Man-of-war Life*, 133; Jonathan Sayles Neale, "Forecastle and Quarterdeck: Protest, Discipline and Mutiny in the Royal Navy, 1793-1814" (PhD diss., University of Warwick, 1990), 390.

¹⁶⁸ Gihon, *Practical Suggestions in Naval Hygiene*, 96, 146; Luce, *Seamanship*, 309; United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 6-7; Great Britain, Admiralty, *The King's Regulations*, 243, 244, 246, 247; Great Britain, Royal Navy, *Black List, HMS Blake, 1811-1812*, Codrington Paper COD/3/8 in *Shipboard Life and Organization, 1731-1815*, Publications of the Naval Record Society volume 138, edited by Brain Lavery (Aldershot, England: Ashgate Publishing Limited, 1998), 414.

a week. Officers regularly inspected hammocks and sleeping areas to ensure sailors did not neglect their cleaning responsibilities. Not following cleaning regulations could easily result in flogging.¹⁶⁹

Routine

Hammocks punctuated the beginning and end of a sailor's day. Men alternated watches throughout the night, those who left their hammocks for the second watch did not move or lash them. Storing hammocks was the first task every morning. A sailor's day began between six-thirty and seven-thirty in the morning depending on the navy, season, and hemisphere. First came the piercing sound of the boatswain's whistle and his cry to "Pipe hammocks," followed by officers bellowing statements such as "All hands, ahoy," "All hands up hammocks, ahoy," "Turn out and save a clew," "Out or down here," "Rise and shine," "Lash and carry," "Bear a hand," or "Show a leg." Sailors awoke quickly, dismounting and lashing their hammocks. Those who did not were often cut down or beaten with rope. In ten to fifteen minutes, men must lash and carry their hammocks above deck and secure them in the hammock netting. If awoken during a call to arms, a sailor must execute the same task in only eight minutes. Once lashed with seven turns, sailors placed hammocks in the netting above deck for the remainder of the day. Men then set to work cleaning the ship, followed by breakfast.¹⁷⁰

¹⁶⁹ Gillespie, *Advice to the Commanders and Officers*, 22; Bellingshausen, *Voyage of Captain Bellingshausen*, 19, 21, 43; United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 27; Luce, *Seamanship*, 308; Gihon, *Practical Suggestions in Naval Hygiene*, 96; Allison, *Sea Diseases*, 189; Thomas Hodgskin, *An Essay on Naval Discipline. Showing Part of Its Evil Effects on the Minds of the Officers and the Minds of the Men and on the Community* (London: C. Squire, Furnival's-Inn-Court, 1813), 33-34.

¹⁷⁰ Bechervaise, *Thirty-Six Years of a Seafaring Life*, 111; United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 25; Masefield, *Sea Life*, 83, 131-132; Nordhoff, *Man-of-war Life*, 79; Shippen, *Thirty Years at Sea*, 148; Gihon, *Practical Suggestions in Naval Hygiene*, 82; Earle, *Life at the U.S. Naval Academy*, 252; E. Smith, "Old Ironsides: Luckiest Ship," *Leatherneck (Pre-1998)* 55, no. 10 (October 1972), 56;

Just as the day began with the storing of hammocks, it then ended with hanging them. As the sun sank, once again the boatswain blew his whistle and called the order “Pipe down,” or “Down all hammocks.” Officers supervised as assigned men climbed into the hammock netting and chucked the hammocks on to the deck. Each sailor quickly found his hammock and scurried below deck.¹⁷¹ As one man explained, “Although nearly a thousand men have to get their hammocks, by the order and arrangement that exist, every one being numbered, it is done without either noise or confusion, and the whole business is accomplished in a few minutes.”¹⁷² Some accounts specify eight or nine in the evening, but several sources only identify sunset as a marker of time. Many, however, do not provide a time at all, simply using the piping down of hammocks as an indicator of time, illustrating how the piping of hammocks acted as a symbol of the beginning and end of a sailor’s day.¹⁷³

On a broader scope, hammocks and their accessories were part of the weekly and monthly routine. Cleaning hammocks was not always a part of shipboard routine, until it became obvious keeping hammocks clean improved a sailor’s health. Although schedules varied from ship to ship, the habit of cleaning hammocks as often as possible caught on through the eighteenth

Great Britain, Royal Navy, Ship Administration WQB/40, *Captain’s Orders, HMS Indefatigable, 1812* in *Shipboard Life and Organization*, 191; Leech, *Thirty Years from Home*, 43-44; Newton, *An Authentic Narrative*, 34; Jones, *Sketches of Naval Life*, 21, 96-97; Great Britain, Privy Council, *Regulations and Instructions*, 198.

¹⁷¹ Blanding, *Recollections of a Sailor Boy*, 39; Bellingshausen, *Voyage of Captain Bellingshausen*, 43; Jones, *Sketches of Naval Life*, 21, 102; Luce, *Seamanship*, 308.

¹⁷² *The History of a Ship From Her Cradle to Her Grave*, 100.

¹⁷³ United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 26; Bechervaise, *Thirty-Six Years of a Seafaring Life*, 119; William Clarence Braisted, *Report on the Japanese Naval Medical and Sanitary Features: Of the Russo-Japanese War to the Surgeon-General, US Navy* (Washington, D.C.: US Government Printing Office, 1906), 12; Leonard, *USS Constellation on the Dismal Coast*, 8.

century. Then in 1804, the Royal Navy Admiralty ordered hammocks cleaned at least once a month.¹⁷⁴

As the nineteenth century progressed, captains ensured that hammocks were scrubbed whenever possible; however, weather did not always permit it. For example, on the USS *Constellation* between 1859 and 1861, hammocks underwent random cleansing. Some months men washed the hammocks twice and other months not at all. The sailor's journal often mentions that the hammocks were scrubbed and aired because there was "fine weather."¹⁷⁵

In the second half of the nineteenth century, navies issued firmer regulations. A medical evaluation by Leonard Gillespie of the Royal Navy in 1860 advised captains,

At least twice a week the bedding of all hands should be shook out and well aired upon deck [and] ... When the ship is fumigated, which should be done at least once a week, even when free from sickness, all the hammocks should be hung up and unlashd between decks, so that the bedding may be fumigated; and after which it should be well aired.¹⁷⁶

In 1884, the Department of the United States Navy created a set cleaning schedule for ships at sea, advising mattress covers cleaned on the second and fourth Tuesday, blankets washed on the third Wednesday, and hammocks scrubbed on the second Thursday of every month.¹⁷⁷ The cleaning of hammocks twice or more a month actively improved health. Furthermore, the routine storage of hammocks above deck, open to the sun and air, kept hammocks fresher longer while serving an additional purpose: protection.

¹⁷⁴Allison, *Sea Diseases*, 136, 189; Jones, *Sketches of Naval Life*, 97.

¹⁷⁵ Shippen, *Thirty Years at Sea*, 77; Leonard, *USS Constellation on the Dismal Coast*, 24, 29, 35, 38, 39, 46, 57, 58, 74, 92, 117, 124, 126, 127, 157, 165, 177, 198, 203, 204, 209, 246, 248, 278, 281, 306, 348, 369.

¹⁷⁶ Gillespie, *Advice to the Commanders and Officers*, 22.

¹⁷⁷ United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 27.

Protection

One of the greatest advantages of the hammock was its removability; once removed from its slung position on the gun deck, however, it still required a storage location. The solution, surprisingly, was above deck. Trough-like netting ran around the outside of the majority of the deck atop the railing. The troughs had several names, including hammock cranes, hammock netting, hammock troughs, hammock cloths, and hammock stanchions. During the day, hammocks rested within these troughs. This solution was threefold. First, it enabled the storage of hammocks, not only away from the gun deck but also in an area otherwise unused, preventing their stowage from occupying room on the ship better used for other purposes. Second, the tight packing of hammocks within the trough created a makeshift wall during battle, forming added protection against enemy fire. Third, it allowed hammocks access to fresh air and sun, aiding in the health of sailors. Authors Peter Flynn and Peter Goodwin also suggest it functioned as a windbreak.¹⁷⁸

The question, however, is which came first: the need for protection or the need for storage. This may be impossible to answer. In fact, just like many of the other details surrounding the early adoption of hammocks on maritime vessels, its stowage is one of the most grey, so much so that there is barely a mention of how a hammock was stowed until 1746. Peter Goodwin, however, identifies the use of hammock cranes beginning in 1710. Likewise, information about the use of hammocks as protection prior to 1746 is also slim. In 1628, the

¹⁷⁸ Flynn, "HMS *Pallas*" 103-104; Peter Goodwin, *The Construction and Fitting of the English Man of War 1650-1850* (Annapolis: Naval Institute Press, 1987), 210.

Duke of Buckingham, regarding his impending expedition to Rochelle, France, ordered the use of hammocks as bulwarks in the event of an enemy encounter.¹⁷⁹

In 1746, several Admiralty records show the discussion involving the stowage of hammocks in hammock netting as protection. Many opposed the idea of storing hammocks above deck, suggesting rain or abundant sea spray would perpetually soak the hammocks, creating an unhealthy situation. The Navy board, however, quickly proposed a waterproof covering over the hammock netting as a solution to the problem during days with less than ideal circumstances. Those who spoke against the use of hammocks above deck suggested the use of junk, old rope, or cork for protection. The Navy Board rejected both ideas, citing the use of junk and rope as too heavy and an obstruction to the wind and sailing. Furthermore, the use of cork proved ineffective at stopping or even slowing a musket ball. The dialog resulted in the order to outfit all Royal Navy vessels with hammock cranes. It seems the debate focused more on the solution for protection rather than for the storage of hammocks; however, it is uncertain if the need for storage ignited the discussion.¹⁸⁰

The stowage of hammocks was highly regulated. At the start of each day, generally six or seven in the morning, every sailor lashed up his hammock and brought it on deck within ten to fifteen minutes of the morning bells. While still hanging, a sailor rolled his hammock, and the bedding inside, into a long sausage shaped roll. Once rolled, the men wrapped a hammock lasher, marlin, or cord, around the hammock a regulation seven turns at even intervals and unhooked the hammock from the deckhead. He then twisted and tucked the head and foot clews under the lashings and carried the bundle on deck for storage in its assigned location within the

¹⁷⁹ Blomfield, "Hammocks and Their Accessories," 145; Goodwin, *The Construction and Fitting of the English Man of War*, 210.

¹⁸⁰ Lavery, *The Arming and Fitting of English Ships of War*, 245; Flynn, "HMS Pallas" 103.

hammock netting. As regulations set forth by Great Britain's Privy Council states, "the Commanders of His Majesty's Ships and Vessels are to cause all such Men daily to lash up their Hammacoes, and carry them to the proper Places for barricading the Ship...."¹⁸¹ Thus creating the phrase "to lash and carry," used by sailors throughout the eighteenth, nineteenth, and twentieth centuries. Just as sailors had assigned sleeping places, so did their hammocks have a designated stowage location, explained by the Naval book on *Perpetual Berthing*,

The number of hammocks that can be stowed in the nettings on deck should be ascertained; and when the whole is measured and marked with the proper distribution of room, small patches or pieces of canvas should be made out for all the hammocks...It is an advantage for hammocks always to be stowed in the same place; therefore the numbers should be regulated by the size of the nettings and the height the officer will have the hammocks stowed. This should be ascertained before the patches are made.¹⁸²

Before placing the hammocks in the netting for the day, officers inspected the hammocks, noting any lashed incorrectly or wrapped too loosely, sending them back to the sailor for correction. To ensure uniform technique, the officers employed a measuring tool known as a hammock hoop or ring; sailors passed their wrapped hammocks through the hoop to determine the accuracy of the lashing; a hammock that did not fit was unacceptable. When called to battle stations in the dead of night, a hammock only required three turns rather than seven and officers did not spend time checking or rejecting the quality of the lashings.¹⁸³

¹⁸¹ Simmons, *The Sea-gunner's Vade-mecum*, 142-143; Luce, *Seamanship*, 308; Don, *Reminiscences of the Baltic Fleet of 1855*, 38; Smith, "Old Ironsides: Luckiest Ship," 56; Rodger, *The Command of the Ocean*, 61; Masefield, *Sea Life*, 132-133; Nordhoff, *Man-of-war Life*, 133; Shippen, *Thirty Years at Sea*, 36; Bechervaise, *Thirty-Six Years of a Seafaring Life*, 111; Great Britain, Privy Council, *Regulations and Instructions*, 198.

¹⁸² Ross, *The Perpetual Berthing in Shipboard Life and Organization*, 257, 258, 260.

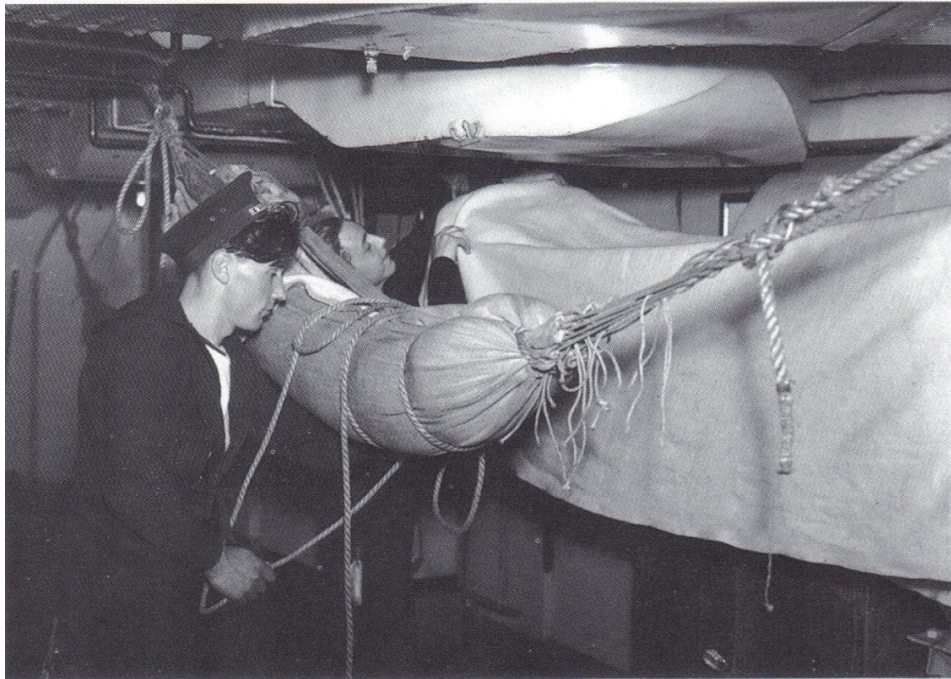
¹⁸³ Luce, *Seamanship*, 309; Masefield, *Sea Life*, 132-133; Leonard, *USS Constellation on the Dismal Coast*, 152.

Figure 20. Sailors lashing a hammock in barracks, United States Naval Air Station, 1944.



Source: Naval History and Heritage Command.80-G-233270. 26 April 1944.

Figure 21. A sailor lashing his hammock. Royal Navy, Early Twentieth Century.



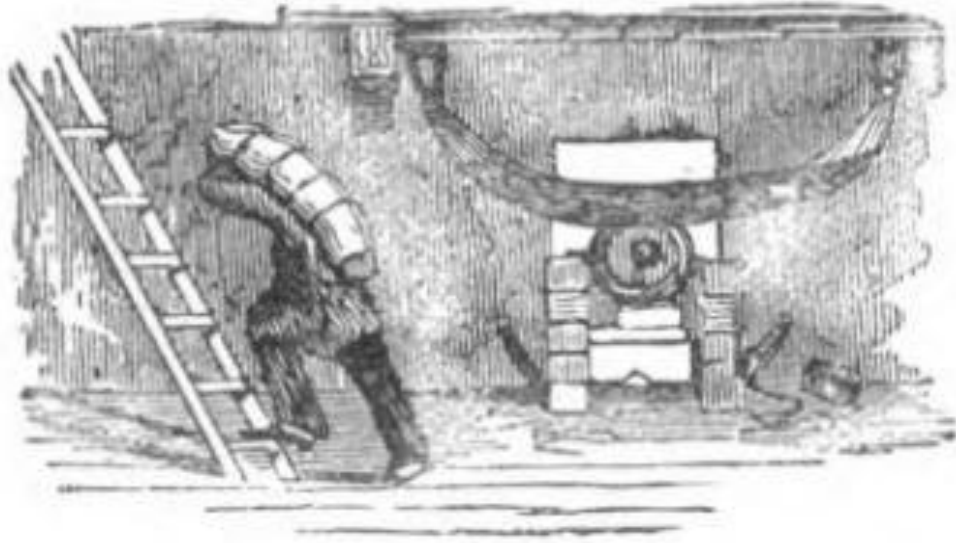
Source: Imperial War Museums, Admiralty Official Collection, A 166. By R.G.G. Cootes.

Figure 22: Fully lashed hammock. Royal Navy, Early Twentieth Century.



Source: Imperial War Museums, Admiralty Official Collection, A 165. By R.G.G. Cootes.

Figure 23. To lash and carry a hammock.



Source: *The History of a Ship From Her Cradle to Her Grave, With a Short Account of Modern Steamships & Torpedoes* (London: G. Routledge and Sons, 1882), 100.

Figure 24. Hammock netting covered with canvas. Royal Navy, 1855.



Source: CFB Esquimalt Naval & Military Museum. D.H. Nelson Collection.

Merchant vessels rarely used hammock nettings. While a naval ship housed hundreds of men, a merchant vessel typically carried no more than twenty, and often men slept in bunks rather than hammocks. This meant that no alternative storing solution was needed, nor did the ships stand to gain any protection from the few hammocks aboard, which they generally did not need anyway. Although private vessels usually followed this pattern, there was always the exception. For example, in his memories Richard Henry Dana Jr. detailed an encounter with a poacher. At first, he thought the vessel was a man-of-war due to the hammock netting and heavy armament; however, he soon realized he was incorrect, for the ship employed the extra protection and weapons due to its illegal endeavors.¹⁸⁴

Netting Construction

Although it did not alter the integrity of a vessel, hammock netting required modifications to the structure. Additionally, their design endured changes over the centuries. Used by all Royal Navy vessels by 1746, hammock troughs ran the length of the upper decks from the “after end of the fore-rigging and the forward end of the mizzen rigging,” on both sides, often including the poop deck and the forecastle, with the occasional breaks for gangways. The original design consisted of a U-shaped iron bracket, placed equidistant along the railing. The bracket sat six inches above the railing and was fifteen to sixteen inches deep, positioning it at breast height, and varied in width. At the base of the bracket, an iron spike extended through the railing and into the planksheer below, securing the hammock crane to the vessel. Often times a plank lined the base of the bracket to stabilize the hammocks. Once sailors positioned their

¹⁸⁴ Dana, *Two Years Before the Mast*, 257.

hammocks in the cranes, tarred canvas covers slipped over the hammocks and cranes to protect and secure them.¹⁸⁵

In 1770, the design underwent its first change. The brackets became square rather than U-shaped. Furthermore, the attachment of thick hammock netting created a safer gully to cradle the rolled up hammocks. Every crane had an eyelet at the top of each arm through which ran a rope used for tying the hammock netting to the interior of each side. By this time, ships carried two hammocks per sailor, requiring additional storage. This led to the addition of hammock stanchions on some vessels; rather than the entire U-shaped bracket, only half, one arm, of the bracket protruded out of the side of the hull where the top of the hull met the railing, creating a second hammock trough, the railing forming the other half of the trough, as seen in figure 26.

Waterproof canvas cloth still covered the hammock netting, but the canvas was no longer tarred.¹⁸⁶

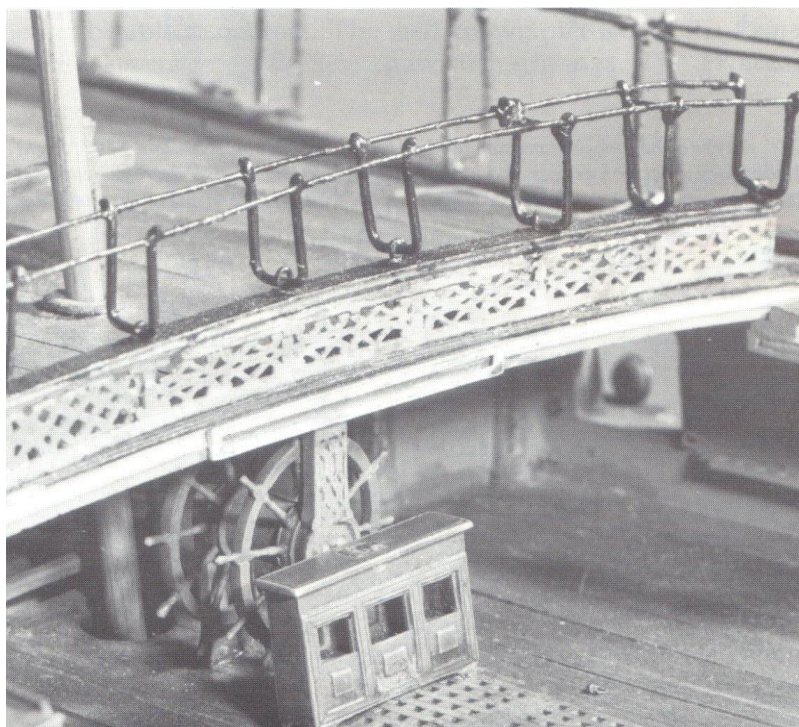
Another change came in 1810 when wooden boxes replaced the metal brackets, which were lighter and more easily replaced. The use of canvas covers still remained. The wooden boxes, however, often increased injuries when hit by canon fire, sending splinters flying. By 1812, the addition of money rails on the forward and aft portions of ships allowed hammock troughs to run the full length of the vessel.¹⁸⁷

¹⁸⁵ Davis, *American Sailing Ships*, 109-110; Simmons, *The Sea-gunner's Vade-mecum*, 142-143; Jones, *Sketches of Naval Life*, 3; Commander Richard W. Meade, *A Treatise on Naval Architecture and Ship-Building* (Philadelphia: J. B. Lippincott and Company, 1869), 390; Lavery, *The Arming and Fitting of English Ships of War*, 245-246; Goodwin, *The Construction and Fitting of the English Man of War*, 211; Captain William Hutchinson quoted in Gomer Williams, *History of the Liverpool Privateers and Letter of Marque: with an Account of the Liverpool Slave Trade*, edited by David Eltis (London: McGill-Queen's University Press, 2013), 13-14; Fanning, *Voyages Round the World*, 276.

¹⁸⁶ Goodwin, *The Construction and Fitting of the English Man of War*, 211; Captain Hutchinson quoted in Williams, *History of the Liverpool Privateers*, 13-14; Lavery, *The Arming and Fitting of English Ships of War*, 245-246.

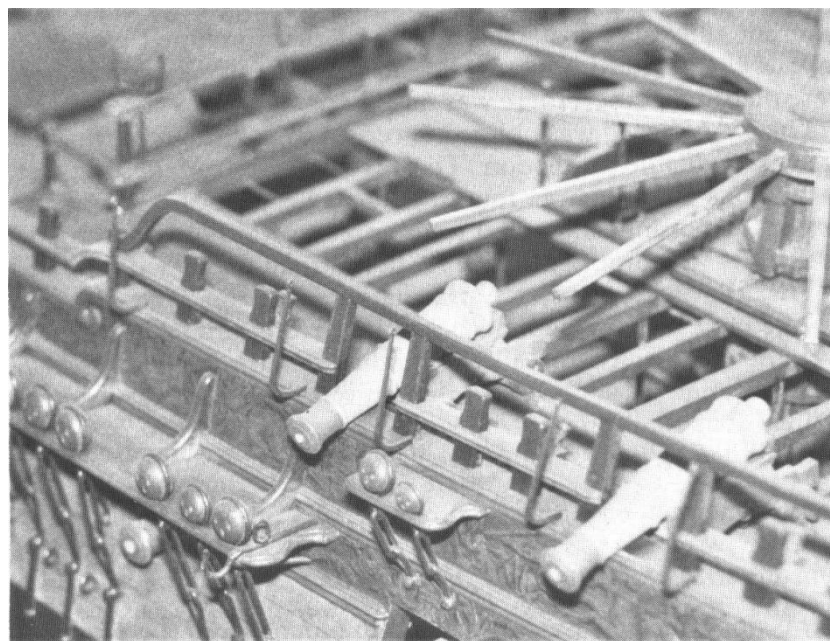
¹⁸⁷ Goodwin, *The Construction and Fitting of the English Man of War*, 211; Davis, *American Sailing Ships*, 109-110; Howard Irving Chapelle, *The History of the American Sailing Navy: The Ships and Their Development* (New York: Bonanza Books, 1949), 336, 476, 477.

Figure 25. Hammock railing on the HMS *Victory* 1765.



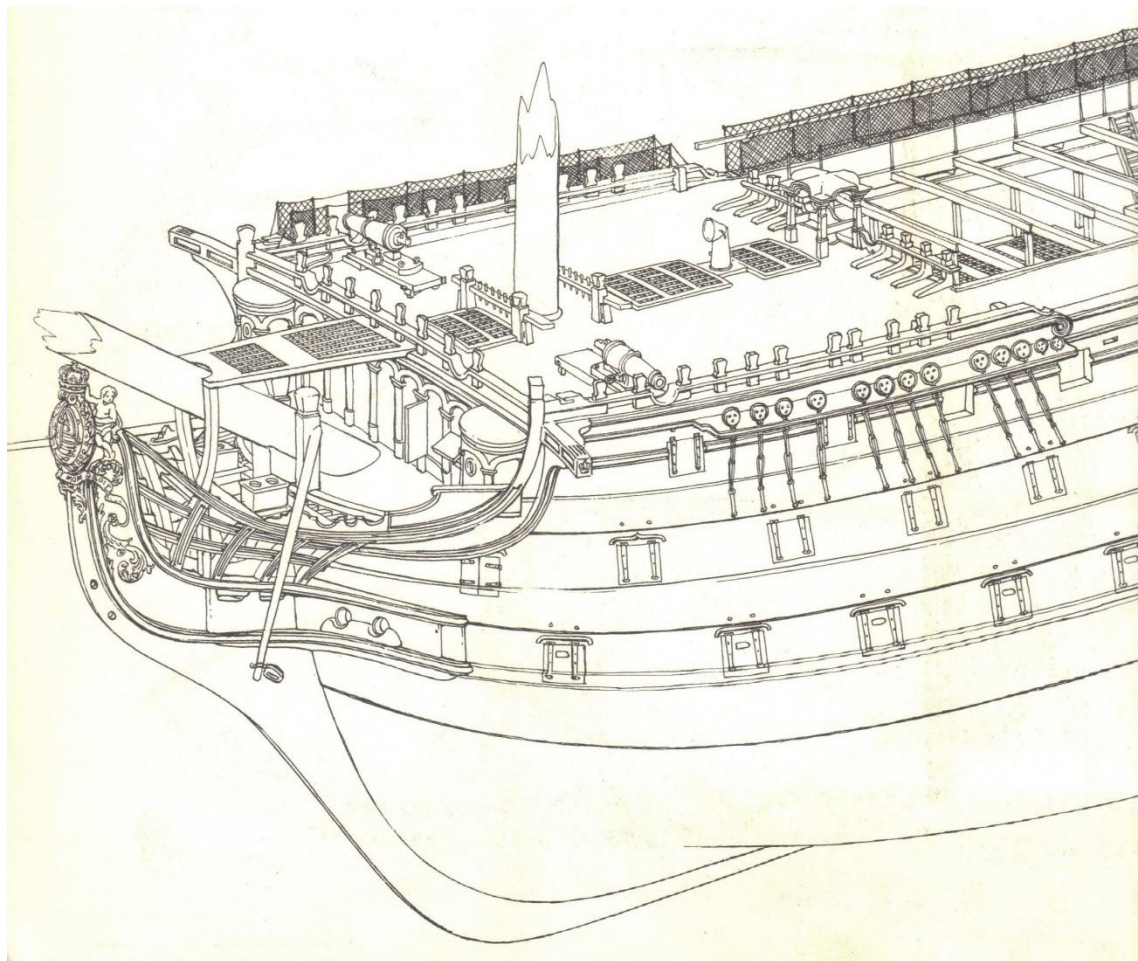
Source: © Brain Lavery, 1987, *The Arming and Fitting of English Ships of War, 1600-1815*, Conway Maritime Press, 245, used by permission of Bloomsbury Publishing Plc.

Figure 26. Hammock Stanchions



Source: © Brain Lavery, 1987, *The Arming and Fitting of English Ships of War, 1600-1815*, Conway Maritime Press, 246, used by permission of Bloomsbury Publishing Plc.

Figure 27. Hammock Netting on HMS *Victory* 1805.



Source: Björn Landström, *The Ship: An Illustrated History* (Garden City, New York: Doubleday, 1961), 190.

Figure 28. Hammock Cranes of the HMS Victory 1805.

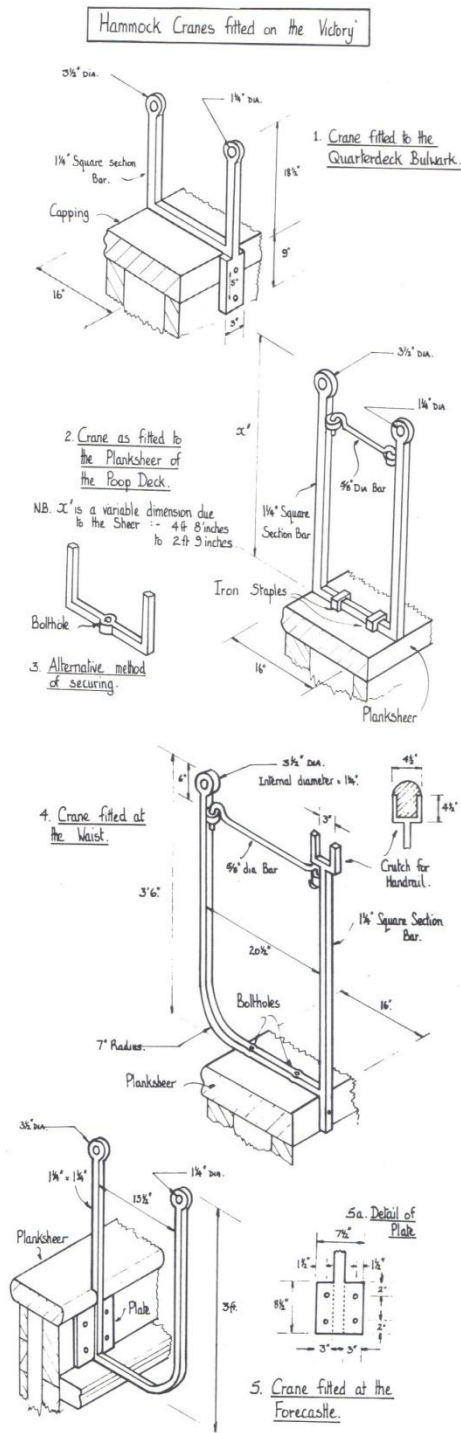
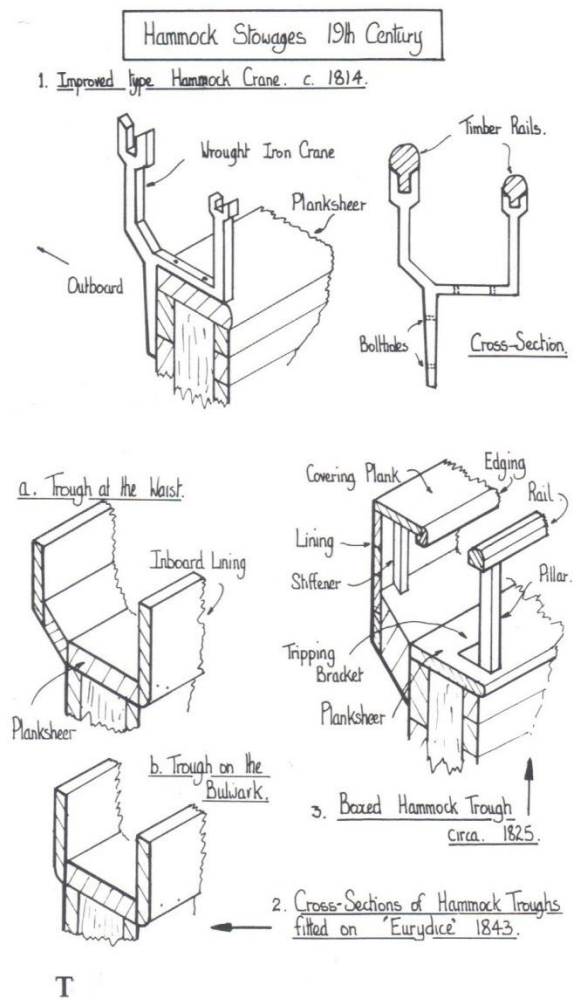
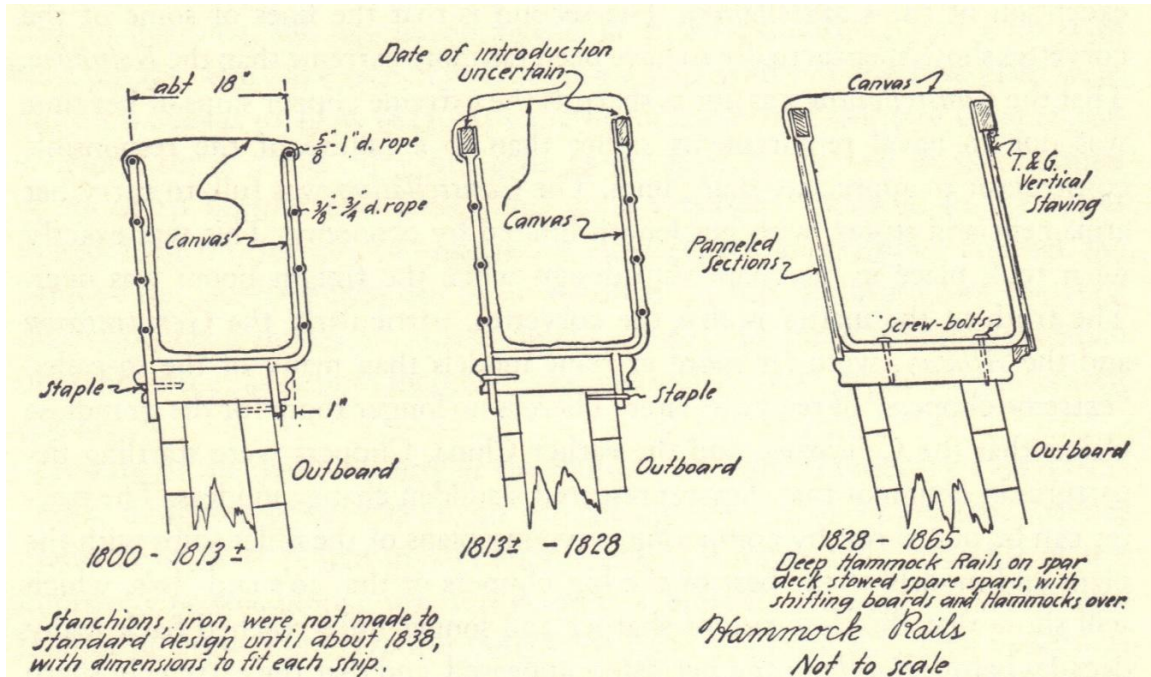


Figure 29. Various Hammock Stowage, Nineteenth Century.



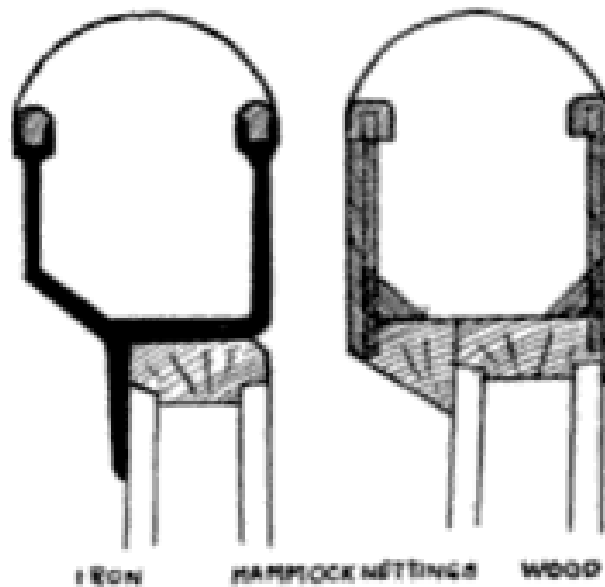
Source: © Peter Goodwin, 1987, *The Construction and Fitting of the English Man of War 1650-1850*, Conway Maritime Press, 211 and 212, used by permission of Bloomsbury Publishing Plc.

Figure 30. Various hammock crane designs, United States Navy, Early to Mid-Nineteenth Century.



Source: Howard Irving Chapelle. *The History of the American Sailing Navy: The Ships and Their Development* (New York: Bonanza Books, 1949), 476.

Figure 31. Iron vs. Wood hammock netting, United States Navy, Nineteenth Century.



Source: Charles Gerard Davis, *American Sailing Ships: Their Plans and History* (New York: Dover Publications, 1929), 109.

Figure 32: Model of hammocks stored in hammock netting uncovered, c1867.



Source: National Maritime Museum SLR 2941.

Netting as Protection

When filled with rolled hammocks, the netting created a barrier, described by many as a wall, bulwark, or parapet. This primarily protected sailors against musket balls, flying debris, and splinters; splinters being one of the most deadly dangers in battle. It dampened the impact of exploding shells and could even help in slowing the force of a canon ball. Many authors have likened stored hammocks to sandbags.¹⁸⁸

Several captains, such as Captain Hutchinson, went so far as to run a second tier of hammocks above the hammock netting, prior to combat, for the better protection of their men.

As he explained

For the same reasons, in clearing and preparing the ship for fighting, I used to make the forecastle and top-men lash the hammocks, to shelter them, horizontally on the outside of the fore and topmast shrouds, close to one another, breast high, and then a single hammock above, leaving a little vacancy to point and fire their

¹⁸⁸ Great Britain, Privy Council, *Regulations and Instructions*, 198; Simmons, *The Sea-gunner's Vade-mecum*, 143; Rodger, *The Command of the Ocean*, 61; McLeod, *British Naval Captains of the Seven Years' War*, 111; Flynn, "HMS *Pallas*," 103-104. William Laird Clowes, Clements Robert Markham, Alfred Thayer Mahan, Herbert Wrigley Wilson, Theodore Roosevelt, and Leonard George Carr Laughton, *The Royal Navy: A History from the Earliest Times to the Present*, volume 3 of 7 (London: Sampson Low, Marston and Company, 1898), 21.

muskets through, which guards that tender and most important seat of knowledge, the head, as well as the other parts of the body which it governs, from the enemy's small shot.¹⁸⁹

Hammocks were even sometimes used on the gun decks to create curtains around each canon “so that if a shell exploded in the starboard battery its action would be limited to the crew of that gun, and the crew of the port gun ... would escape the flying debris.”¹⁹⁰

During the threat of battle, sailors often opted to keep their hammocks stowed in the netting to ensure protection, other times captains ordered it.¹⁹¹ Amidst an encounter, an officer noted how “one [shell] struck her, going through the pilot-house and exploding in the starboard hammock nettings, producing slight injury, and wounding one of the pilots and a seaman very slightly by the splinters.”¹⁹² Another Admiral recounted his experience: “although the hammock-rail netting that protected us to above the hips was well riddled, as well as the inside of the bulwark beyond us, we escaped injury from the dozen or more guns that had been aimed at us.”¹⁹³ Although the hammocks provided a considerable level of protection, stopping unknown quantities of small shot, they did not always prevent death. During the conflict between the *Merrimac* and the *Cumberland*, on

¹⁸⁹ Captain Hutchinson quoted in Williams, *History of the Liverpool Privateers*, 14.

¹⁹⁰ Braisted, *Report on the Japanese Naval Medical*, 69.

¹⁹¹ Christopher McKee, *Edward Preble: A Naval Biography 1761-1807* (Annapolis: Naval Institute Press, 2014), 161; Frederic Stanhope Hill, *The Romance of the American Navy as Embodied in the Stories of Certain of our Public and Private Armed Ships from 1775 to 1909* (New York: GP Putnam's Sons, 1910), 349.

¹⁹² J. Thomas Scharf, *History of the Confederate States Navy: From Its Organization to the Surrender of Its Last Vessel* (New York: Rogers and Sherwood, 1887), 143.

¹⁹³ Ammen, *The Old Navy and the New*, 364.

March 9, 1862, one sailor observed how one shell tore straight through the hammock netting, killing or wounding eight men.¹⁹⁴

Just like the beginning of the use of hammocks as protection was not an overnight sensation, so too was their eventual dissolution. As ships transitioned to metal construction, they also eliminated hammock netting over a period of twenty to thirty years from World War I through World War II. Nathan Miller, in his *The U.S. Navy: An Illustrated History*, suggests hammock netting was a thing of the past by the end of the 1920's, which is true of all metal vessels before and after that decade. Metal ships no longer employed hammocks as an added layer of protection and had the additional room below deck to store them during the day in designated rooms or trussed up overhead on the mess deck. As the navies eliminated wooden vessels, so too did they phase out hammock netting.¹⁹⁵

Hammocks served as protection in more ways than one. In addition to shielding the men from debris during battle, captains frequently lashed them around the vital and weaker parts of the ship, such as the rigging and lanyards, to protect the vessel in the same way. In various parts of the ship, hammocks formed barricades to secure important areas, such as the sick bay, or divide decks into portions to help localize any damage suffered in each space. During hand-to-hand combat, those trying to board a vessel would have to climb over the hammock netting or cut through it, allowing those being attacked precious time to prepare.¹⁹⁶

Hammocks also offered different protection when not in battle. During a storm, a canon that broke free could be deadly, crushing anyone in its path. During such events, hammocks were

¹⁹⁴ Hill, *The Romance of the American Navy*, 233; A. B. Feuer, *America at War: The Philippines, 1898-1913* (Westport: Greenwood Press, 2002), 17.

¹⁹⁵ Miller, *The U.S. Navy*, 64; Taylor and Schmid, *The Battlecruiser HMS Hood*, 26-27; Lavery, *Able Seamen*, 109, 139.

¹⁹⁶ Masefield, *Sea Life*, 171; Shippen, *Thirty Years at Sea*, 361; Scharf, *History of the Confederate States Navy*, 122.

cut down to act as breaks under the wheels; once the hammock stopped the canon, it could be secured until the gale passed. In a more unlikely scenario, one captained used hammocks, capstan bars, and a table to plug a six-foot hole until rescue arrived.¹⁹⁷

Often times, the benefit of added protection during battle came with a distinct disadvantage. During battle, if a hammock succeeded in actively protecting men from debris, small arms, or canon fire, the result was a shredded hammock. Numerous captains and sailors explain this plight. On August 2, 1798, Captain Edward Kirby stated, “almost all the hammocoes [were] cut to pieces.” Another Captain, Davis Donaldson, wrote in his log, on October 21, 1805, that “the gangway netting and hammock[s] [were] completely shot to pieces.” A midshipmen explained his personal quandary to his mother on November 22, 1805, “my hammock and bedding had likewise been shot away in the action, which is the more unfortunate as I can so ill afford to replace them.”¹⁹⁸ Commodore Macdonough observed after a battle, on September 13, 1814, “there were not 20 whole hammocks in the nettings at the close of the action.”¹⁹⁹ The result of most battles left a crew with little to no useable hammocks. While the purser and boatswain salvaged anything of use, men were frequently bedless until the ship could make it to port.²⁰⁰

Although hammocks often aided sailors in protection, they occasionally caused hazards, most notably fire. During an engagement between French and British naval forces, on November

¹⁹⁷ Simmons, *The Sea-gunner's Vade-mecum*, 178; Hill, *The Romance of the American Navy*, 316-317.

¹⁹⁸ Jackson, *Logs of the Great Sea Fights*, 62, 63, 287, 327.

¹⁹⁹ William James, *A Full and Correct Account of the Chief Naval Occurrences of the Late War Between Great Britain and the United States of America: Preceded by a Cursory Examination of the American Accounts of Their Naval Actions Fought Previous to that Period: to Which is Added an Appendix; with Plates* (London: T. Egerton, 1817), clxiv.

²⁰⁰ Masefield, *Sea Life*, 184; Kevin McCranie, *Utmost Gallantry: The US and Royal Navies at Sea in the War of 1812* (Annapolis: Naval Institute Press, 2011), 151.

14, 1798, a French vessel threw several hammocks overboard because they had caught fire and threatened the ship.²⁰¹

Flotation

Hammocks not only served as protection onboard but also in the water. In the event a crew abandoned ship, hammocks could double as flotation devices; navies, however, did not realize this until the early nineteenth century. If a vessel was going down, sailors could dislodge the hammocks and throw them overboard. Additionally, the design of hammock nettings and covers allowed hammocks to break free and float to the surface in many cases if there was not enough time for the crew to access them. One account details how sailors managed to stay afloat by using their hammocks for almost an hour.²⁰² Two haunting examples explain how important hammocks could be as flotation devices. One sailor observed in 1878,

The hammocks had, unfortunately, been stowed in some unusual place between the boom boats, as the nettings were being cleared out, so that it was useless to attempt to get them out, and thus a very perfect means of escape was withheld from many of the poor fellows who were drowned. Had the hammocks been in their ordinary place, they would have floated away, and afforded so many life buoys, quite capable of keeping a man afloat for at least half an hour.²⁰³

In another account in 1918, Sir Roger Keyes explains that he “went to the *Queen Elizabeth* and told the Commander-in-Chief ... [he] was afraid there could be no survivors. Actually three were picked up ... A marine and a stoker were found uninjured, they had both been asleep in their

²⁰¹ Yonge, *The History of the British Navy*, 521.

²⁰² *Annual Register: A Review Of Public Events At Home And Abroad, For Year 1864* (London: Longman And Company, 1865), 93; *Annual Register, Or A View Of History, Politics, And Literature, Of the Year 1829* (London: Baldwin, Craddock, and Joy, et al, 1830), 179.

²⁰³ *Annual Register: A Review Of Public Events At Home And Abroad, For Year 1878* (London: Longman And Company, 1879), 50.

hammocks on the lower deck, and woke up swimming.”²⁰⁴ By 1918, metal ships stored hammocks below deck, preventing their use as life-saving flotation devices.

In 1879, Theodorus Mason wrote an entire paper on the need for and types of flotation on all maritime vessels. His paper, *The Preservation of Life At Sea: a Paper Read Before the American Geographical Society, February 27th, 1879*, covers every kind of vessel in every sector, not only evaluating the type of flotation gear they currently employed but also any possible improvements based on various tests. He focused heavily on the use of bedding and hammocks as life saving devices stating,

... life-preservers ...without additional expense. It would economize space, always a coveted article aboard ship. By their superior size and greater buoyancy, they would support a person in the water better than a jacket ... Had this fact been known to the officers of many of the men-of-war which have sunk suddenly, the loss of life would have been much smaller.²⁰⁵

At the time of the paper, a United States naval hammock could support four sailors for an hour. He suggests several improvements and changes. First, he explained the addition of cork shavings to mattresses would increase their buoyancy. In addition, he proposed placing hammocks into a “closely woven water-proofed cotton canvas bag,” quadrupling the buoyancy. He most strongly advocated for a new, cheaper mattress that was in its trial phase aboard vessels. Mason tested the new mattress, made of compressed felt, and found it to be virtually unsinkable. In addition to the wide spread use of the new mattress, he recommended several improvements to the design. First, the addition of handles would enable one mattress to save more than one man. Additionally, he advised the inclusion of snaps to allow multiple mattresses to be secured together to form a raft and support countless people. Furthermore, the formation of several

²⁰⁴ Roger Keyes, *The Naval Memoirs of Admiral of the Fleet Sir Roger Keyes: Scapa Flow to the Dover Straits, 1916-1918* (New York: E.P. Dutton, 1935), 98.

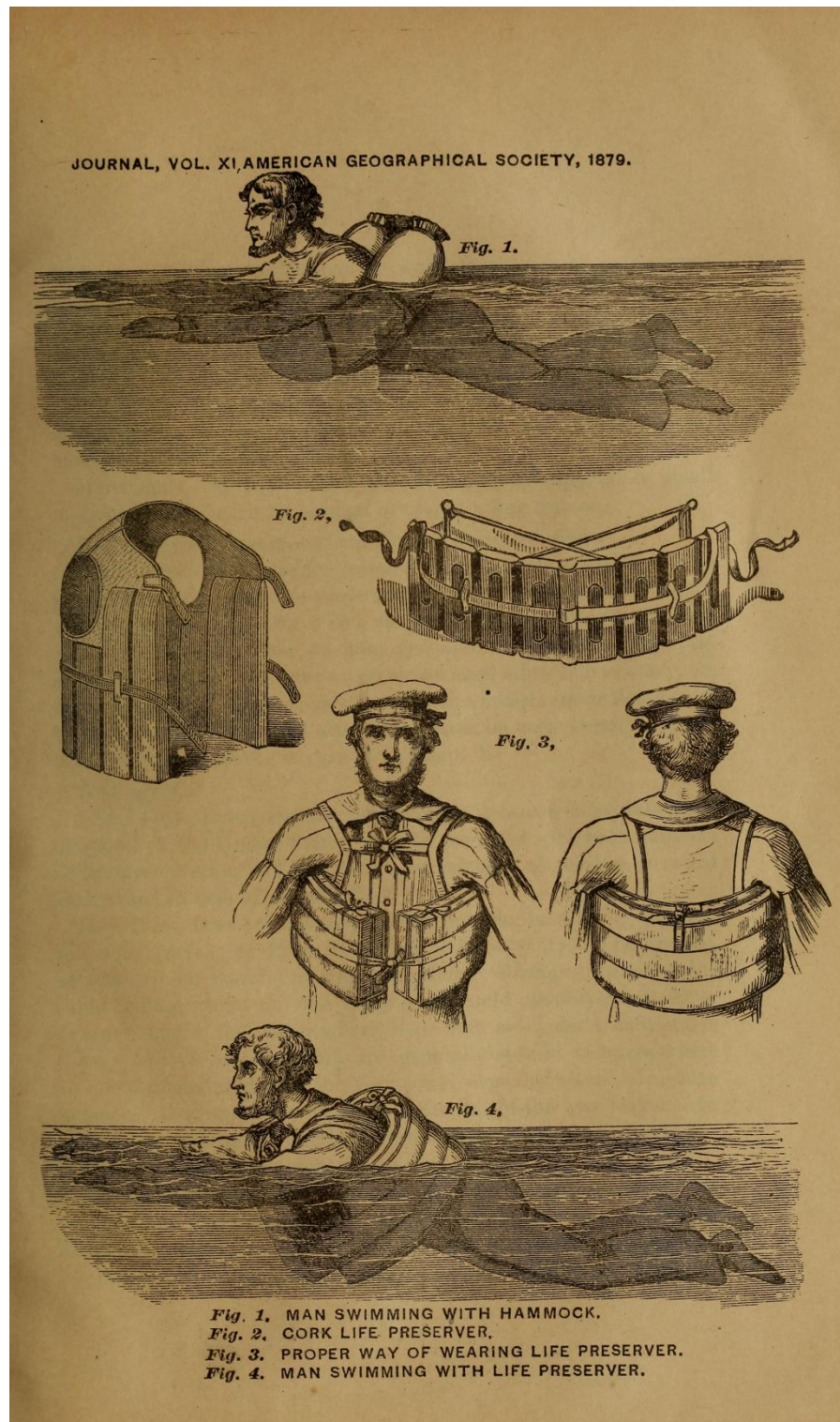
²⁰⁵ Mason, *The Preservation of Life At Sea*, 8.

mattresses into a raft would enable men to paddle to shore safely without the added danger of a rowboat flipping over in the breakers. He also explained how to use a lashed hammock as a life preserver (figure 30): “the clews are to be brought together and secured. This forms a ring-buoy, which is placed around the body, under the arms.”²⁰⁶

Although primarily used for sleeping, hammocks played important roles in a sailor’s daily life. Regulations dictated their uses. They were apart of daily routine, signaling the beginning and end of the day. In addition, they found function and purpose during waking hours as forms of protection, doubling their usefulness. The action of storing hammocks above deck also allowed the sun and air to refresh hammocks, one of the many steps taken to improve a sailor’s health.

²⁰⁶ Mason, *The Preservation of Life At Sea*, 7-11, 20.

Figure 33. How to use a hammock as a life preserver. United States Navy, 1879.



Source: Theodore C. Mason, *Battleship Sailor* (Annapolis, United States Naval Institute Press, 1982), 7.

Chapter 5

Health and Hygiene

... I sunk down with my face to the moon. The master-at-arms came along soon after and waked me up: he asked pardon for his boldness, but said he never liked to see a person sleeping where the moon could reach his face. He had sailed in a schooner, in the West Indies once, he continued; the men were permitted to sling their hammocks on deck; the moon shone upon them, and a general inflammation of the eyes was the consequence, ending in a few cases with fevers and death: it was attributed to the moon.

-George Jones

In a cramped enclosed space such as a maritime vessel, maintaining health and hygiene was important. Anything from the common cold to yellow fever could quickly ravish a crew, leaving the ship and crew crippled or dying, unable to sail or protect themselves. As the seventeenth century progressed, officials increasingly embraced the belief that sleeping on bare decks or in the small coffin-like cabins, described as “wombs of hell” by Eugenio de Salazar, was detrimental to a sailor’s health, leading to the eventual adoption of hammocks in the early eighteenth century.²⁰⁷

Even after the complete integration of hammocks into the Royal Navy, the belief that sleeping on deck caused health issues grew; therefore, officials issued warnings and rules

²⁰⁷ Salazar, *Seafaring in the Sixteenth Century*, 31; Oppenheim, *A History of the Administration of the Royal Navy*, 134, 197, 198, 232, 235, 299, 301; Blomfield, “Hammocks and Their Accessories,” 145; Lavery, *Royal Tars*, 101; Lavery, *The Arming and Fitting of English Ships of War*, 155; Flynn, “HMS Pallas,” 103.

preventing men from sleeping on deck in an attempt to maintain health standards.²⁰⁸ Captain Edward Rious, esquire of the Royal Navy, wrote in 1799,

...in hot weather it is too frequently the case that thoughtless men neglect the care of their bedding and from a desire of avoiding the disagreeable and close but not destructive heat of between decks, sleep upon deck, or at least hang their hammocks up under the booms and other places exposed to a draught of air; the consequence of which, however agreeable it may be to their feelings at the instant, is sooner or later, owing to the sudden check of perspiration or to noxious damps or night dews, generally fatal.²⁰⁹

In 1884, a United States Congressional document by the United States Navy, under sanitary rule IV, declared, “when on board ship[s], deck officers will not allow apprentices to sleep out of their hammocks nor to lie about decks at night.”²¹⁰ Likewise, a 1916 Royal Navy pocket manual, written by W. M. James, stated, “A large number of men will request to sleep in the open air in summer; and if this is made possible, the sick list will soon show the effect.”²¹¹ Although many of these declarations resulted from the belief that sleeping under the moon provoked disease, they do show insight into the understanding that overexposure to the elements and lack of physical protection caused illness.²¹²

In addition, the navy, captains, and sailors went to numerous lengths to maintain cleanliness and health. Many captains, such as Captain Wallis of the HMS *Dolphin*, discovered early on that perpetual wetness and uncleanness fostered illness. As Captain Wallis observed in

²⁰⁸ Bellingshausen, *Voyage of Captain Bellingshausen*, 43; Jones, *Sketches of Naval Life*, 65.

²⁰⁹ John Davie, *Observations and Instructions* (London: 1804) in *Shipboard Life and Organization, 1731-1815*, Publications of the Naval Record Society volume 138, edited by Brain Lavery (Aldershot, England: Ashgate Publishing Limited, 1998), 269.

²¹⁰ United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 14.

²¹¹ James, *The Royal Navy Officer's Jutland Pocket-Manual*, 107.

²¹² Jones, *Sketches of Naval Life*, 65.

1766, “men began to fall down very fast in colds and fevers, in consequence of the upper works being open, and their clothes and beds continually wet.”²¹³ Captain Cook stated in the mid-eighteenth century, “Proper methods were used to keep their persons, hammocks, bedding, and clothes constantly clean and dry. Equal care was taken to keep the ship clean and dry betwixt decks.”²¹⁴ In 1750, a sailor described cleaning protocol,

In the next place our hammocks are ordered on deck every morning , and gun-ports hauled up, if the weather will permit it; the lower deck, in dry weather, well scraped and washed, and in foggy or wet, scraped and swept. To remove any moisture or damps from the beams, and where the men steep, we burn dry wood, sprinkled with powdered rosin, in match-tubs, partly filled with sand, removing them to every birch between deck: when this cannot be done, as the weather will not every day allow the hammocks to be got up, we put hot loggerheads in buckets of tar and pitch, the fumes of which are noxious to all sorts of vermin, and drive out the putrid and confined air.²¹⁵

Clean Hammocks

Captains and officials agreed hammocks should be washed and aired regularly, decks cleaned, fumigated, and aired often, as well as clothes washed and kept dry and out of hammocks.²¹⁶ These various standards, precautions, rules, regulations, and routines helped maintain a healthy environment. A quote from Norman Chevers in his 1864 Dutch medical treatise illustrated that sanitary standards progressed:

²¹³ Robertson, *Discovery of Tahiti*, 104.

²¹⁴ Captain James Cook, *Voyages of Discovery*, edited by Robert Welsh (Chicago, Illinois: Academy Chicago Publishers, 2005), 241.

²¹⁵ *Annual Register, Or A View Of History, Politics, And Literature, Of the Year 1760* (London: J. Dodsley, 1781), 158.

²¹⁶ Robertson, *Synopsis Morborum*, 50; A Captain of the Royal Navy, *Observations and Instructions*, 14, 35, 48; Gihon, *Practical Suggestions in Naval Hygiene*, 96; Gillespie, *Advice to the Commanders and Officers*, 20; Rodger, *The Wooden World*, 216; Great Britain, Royal Navy, *Regulations and Instructions in Shipboard Life and Organization*, 53-54; Davie, *Observations and Instructions in Shipboard Life and Organization*, 269.

I have been at the pains to go over all this evil old ground, because, in the present times of sanitary improvement, we are liable to become ignorant or forgetful of the tremendous dangers which disregard of the now common precautions for preserving health involve; and because it is, happily, difficult to find the strongest proofs of the perils which attend such neglect, except in the maritime records of days which have now, in the great mercy of Providence, passed away. Recollect that those dangers ... the ill scrubbed hammocks.²¹⁷

Clean hammocks were a high priority, helping to maintain crewmembers' health. Due to the wet environment of a ship at sea, keeping hammocks clean and dry was a never-ending task. Water could leak in through open seams and permeate the air, or sailors would return below from duty soaked, adding to the damp air, and regularly leaving his soiled clothes on while in bed. This caused perpetually sodden, smelly hammocks, creating an overwhelming noxious smell that hung in the air of sleeping decks like an ominous cloud. Men such as James Lind and Albert Leary Gihon spoke adamantly for the need to keep hammocks as clean and dry as possible, banning sailors from entering their hammock wet or storing wet items in them.²¹⁸

During the day, hammocks were stored in hammock nettings. In 1746, Admiralty records show the adoption of hammock netting covers, to allow the stowage of hammocks above deck and yet remain dry.²¹⁹ Hammock clothes "were canvas covers put over the hammocks when they were put above the bulwarks in the hammock rails or nettings."²²⁰ Made from painted or tarred waterproof canvas, the hammock cloths enabled hammocks to remain dry in rough seas or rainy

²¹⁷ Norman M. D. Chevers, *On the Preservation of the Health of Seamen, Especially of Those Frequenting Calcutta and the Other Indian Ports: Being a Lecture Read to an Audience of Seamen at the Floating Library, Calcutta, January 5, 1864* (Calcutta, Military Orphan Press, 1864), 31.

²¹⁸ Robinson, *A Sailor Boy's Experience*, 56; Rodger, *The Wooden World*, 62; Lind, *A Treatise on the Scurvy*, 68-70, 229; Gihon, *Practical Suggestions in Naval Hygiene*, 96; Leonard, *USS Constellation on the Dismal Coast*, 204, 249; Nordhoff, *Man-of-war Life*, 158; Royal United Services Institution Papers, RUSI/ER/3/11, *Captain's Orders, HMS Amazon, 1799 in Shipboard Life and Organization, 1731-1815*, Publications of the Naval Record Society volume 138, edited by Brain Lavery (Aldershot, England: Ashgate Publishing Limited, 1998), 157-158.

²¹⁹ Lavery, *The Arming and Fitting of English Ships of War*, 245; Flynn, "HMS Pallas," 103.

²²⁰ Leonard, *USS Constellation on the Dismal Coast*, 311.

conditions (figures 31 and 32). The covers had a drawback, however. If hammocks were wet when covered, they generally did not dry out; therefore, they baked in the heat under the cloth adding to the stench and growth of organisms. Occasionally sailors piped down hammocks early or slung them up between the beams if the weather was particularly nasty in an effort to keep them dry and allow men to retire from the rain.²²¹

Since wet hammocks were not all together avoidable, the next precaution was airing them whenever possible. Lines called hammock gant-lines were strung among the rigging for the purpose of hanging the hammocks and clothes to air and dry. Many sailors spoke about hanging their hammocks to air out. Optimally sailors aired hammocks once or twice a week; however, the weather did not always permit such a frequent schedule, reduce airing to “whenever possible” or “when the weather permitted.”²²²

Although crews aired hammocks whenever feasible, which helped keep them dry and fresher, they still needed regular washing. As Edward Shippen observed in his autobiography, “Nothing points to bad condition in a man-of-war more than a netting full of dirty hammocks, unless it be dirty and untidy boats.”²²³ Both the Royal and United States navies mandated hammocks scrubbed no less than once a month, optimally twice a month. This, however, was not always possible. Several ships’ logs show hammocks sometimes washed up to three times a

²²¹ Jones, *Sketches of Naval Life*, 3-4; Bradford, *A Glossary of Sea Terms*; Smyth, *The Sailor's Word-book*; Nordhoff, *Man-of-war Life*, 158; Royal United Services Institution Papers, RUSI/ER/3/11, *Captain's Orders, HMS Amazon, 1799* in *Shipboard Life and Organization*, 157-158.

²²² Smyth, *The Sailor's Word-book*; Earle, *Life at the U.S. Naval Academy*, 247; Bellingshausen, *Voyage of Captain Bellingshausen*, 143; Leonard, *USS Constellation on the Dismal Coast*, 46, 58, 117, 124, 204 Great Britain, Royal Navy, Order Books and Orders, OBK/9, *Naval Instructions on Board His Majesty's Ship Magananime, 1759-1761* in *Shipboard Life and Organization, 1731-1815*, Publications of the Naval Record Society volume 138, edited by Brain Lavery (Aldershot, England: Ashgate Publishing Limited, 1998), 83; Great Britain, Royal Navy, Ship Administration WQB/40, *Captain's Orders, HMS Pegasus, 1786-1788* in *Shipboard Life and Organization*, 99; Great Britain, Royal Navy, Ship Administration WQB/40, *Captain's Orders, HMS Indefatigable, 1812* in *Shipboard Life and Organization*, 187, 188, 191, 192.

²²³ Shippen, *Thirty Years at Sea*, 77.

month, while other times months would lapse without a proper scrubbing. Like airing, sailors reported only washing hammocks when the weather allowed it, often preventing frequent cleansing.²²⁴ One Royal medical treatise even suggested taking airing and cleaning a step further. In 1798, Leonard Gillespie advised,

The morning-watch should in good weather bring their hammocks with them on deck, and should be ordered to shake out and air them before the watch expires, if the ship's duty admits it. In stowing the hammocks when the weather is fine, no clothes (particularly painted ones) should be put around them as a cover, in order that they may be fully exposed to the breeze and sun. At least twice a week the bedding of all hands should be shook out and well aired upon deck; the neglect of which I have often had occasion to see produce bad effects. When the ship is fumigated, which should be done at least once a week, even when free from sickness, all the hammocks should be hung up and unlashed between decks, so that the bedding may be fumigated; and after which it should be well aired. At four o'clock, P.M. the hammocks should regularly be piped down; and some person should soon after go round the deck to see that all the hammocks are unlashed, in order to cool by exposure to the air, and to ascertain that they are prepared; it being customary with sailors, especially unseasoned ones, to throw their hammocks on a gun after they have been carried below, and sleep on the deck; which often proves prejudicial to their health.²²⁵

Navies generally outfitted each sailor with two hammocks to bolster the chances for men to have clean, dry hammocks. That way while the sailors used a clean hammock, he could work to cleanse and dry his other.²²⁶ A Captain in the Royal Navy in 1804 summarized the policy,

The establishment of two hammocks to each man, so conducive to the preservation of health, is always to be complied with, if it be possible; but the boatswain must be vigilant and attentive to see that this regulation is not

²²⁴ Arthy, *The Seaman's Medical Advocate*, 210-211; United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 18, 27; Jones, *Sketches of Naval Life*, 97; Bellingshausen, *Voyage of Captain Bellingshausen*, 43; Leonard, *USS Constellation on the Dismal Coast*, 24, 29, 35, 38, 39, 57, 74, 92, 126, 127, 157, 165, 177, 198, 203, 209, 246, 248, 278, 281, 306, 348, 369; Nordhoff, *Man-of-war Life*, 123; Rodger, *The Wooden World*, 61; Great Britain, Royal Navy, Ship Administration WQB/40, *Captain's Orders, HMS Pegasus, 1786-1788 in Shipboard Life and Organization*, 97-98; Bechervaise, *Thirty-Six Years of a Seafaring Life*, 116, 120.

²²⁵ Gillespie, *Advice to the Commanders and Officers*, 22.

²²⁶ Gillespie, *Advice to the Commanders and Officers*, 22; Leech, *Thirty Years from Home*, 44; Rodger, *The Wooden World*, 61.

perversed, and the hammocks appropriated to other uses than that of sleeping in.²²⁷

Additionally, to help maintain the health of seamen, sailors regularly scrubbed the decks. This added the benefit of prolonging the cleanliness of hammocks between cleansings and dryings. Sailors swept the decks every day. Additionally, ventilation and airing of the decks took place whenever the weather allowed. Decks were scrubbed, holystoned, scrapped, and fumigated as often as possible, frequently scrapped or scrubbed everyday and fumigated at least once a month. They also lit fires to dry the decks and purify the air. This helped to prevent the buildup of stagnant, wet air, and the accumulation of sludge. Cleaning the between decks too late in the day or on a cloudy day, however, was more detrimental than helpful, adding to the moisture below deck.²²⁸

Despite captains', sailors', and regulations' best effort, decks and hammocks still regularly became putrid and perpetually wet. Albert Gihon, in his 1871 and 1876 medical observations, illustrated how foul the situation could get if untreated:

The graphic descriptions by reporters of the filth of some of the unclean and degraded poor of our great cities would find a parallel on the berth-decks of many of our men-of-war at night ... It is impossible to remain many minutes among the hammocks without experiencing a sensation of suffocation and nausea; indeed it is only necessary to lean over the main-hatch, toward the close of the first watch, to recognize the heavy mawkish odor that arises and betokens the over-crowding of human beings. That these beings are injuriously affected by what appeals so forcibly to our senses and excites disgust, does not admit of question²²⁹ ... Wait, if you can, till the deck is crowded with these hammocks ... and then, if you can

²²⁷ A Captain of the Royal Navy, *Observations and Instructions*, 48.

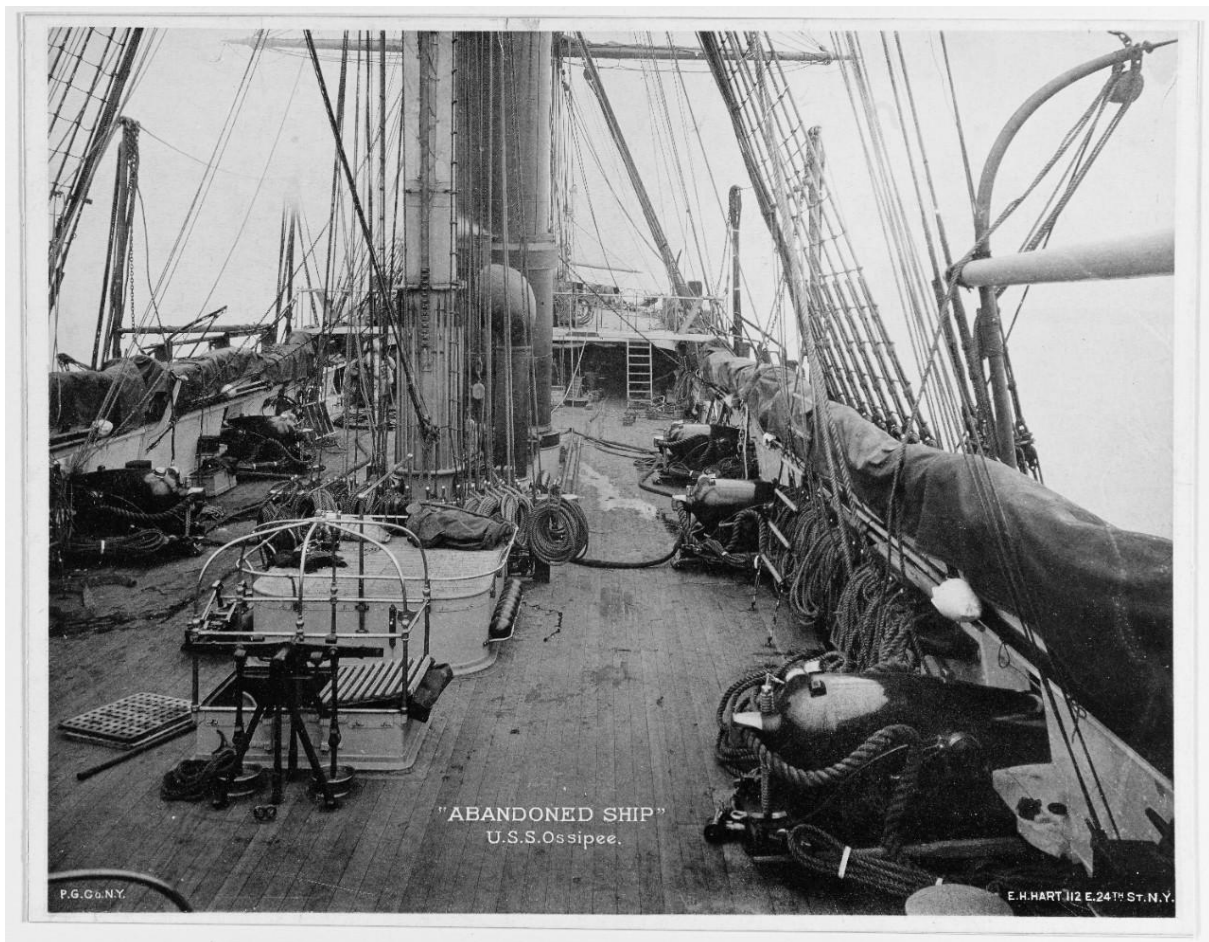
²²⁸ Arthy, *The Seaman's Medical Advocate*, 210-211; Bechervaise, *Thirty-Six Years of a Seafaring Life*, 120; Dana, *Two Years Before the Mast*, 194; Bellingshausen, *Voyage of Captain Bellingshausen*, 19, 21; Yates Stirling, *Fundamentals of Naval Service* (Philadelphia: JB Lippincott, 1917), 536; Jones, *Sketches of Naval Life*, 97; Great Britain, Royal Navy, Ship Administration WQB/40, *Captain's Orders, HMS Pegasus, 1786-1788 in Shipboard Life and Organization*, 97-98.

²²⁹ Gihon, *Practical Suggestions in Naval Hygiene*, 94.

still breathe, wait until the crew ... are all wedged into place, some scarcely removing their wet and soiled outer clothing, none disturbing the under-clothing, which may have been worn for weeks, and if removed, would disclose, as only the medical officers and their subordinates know, bodies as begrimed as the garments.²³⁰

Most merchant vessels did not use hammocks. Furthermore, far fewer regulations and routines dictated merchant life. Most likely merchant sailors washed bedding when possible, but probably on a less regulated basis.

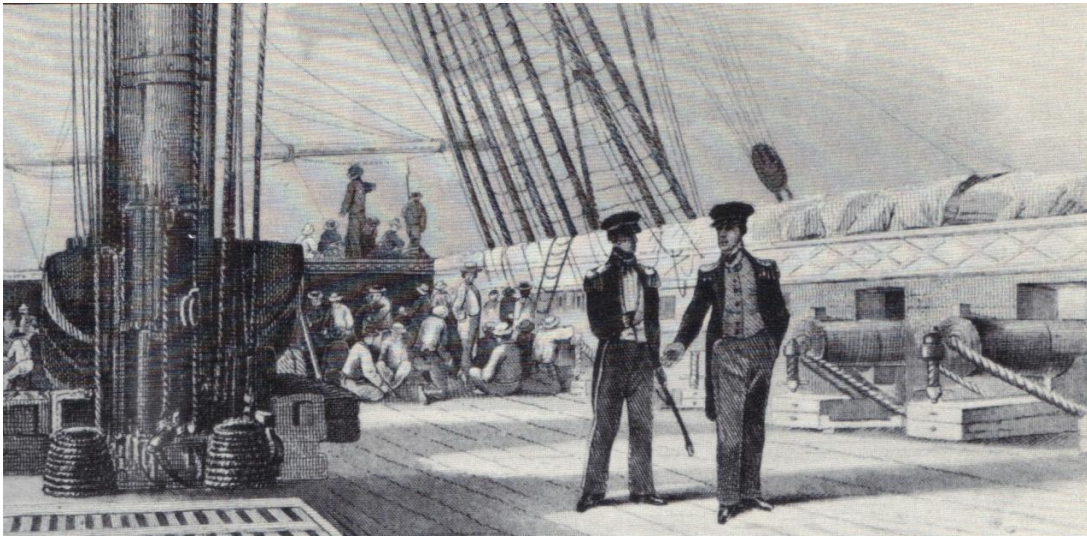
Figure 34. Hammock Coverings over netting on port and starboard rail. USS *Ossipee*, 1862-1881.



Source: Naval History and Heritage Command (42946).

²³⁰ Gihon, "The Need of Sanitary Reform in Ship-Life," 88.

Figure 35. Hammock Cover in background, Royal Navy 1851.



Source: J. G. Heck, *Iconographic Encyclopedia of Science, Literature, and Art*, volume 33, translated by Spencer F. Baird (New York: Rdolph Garrigue, 1851), figure 21.

Figure 36. Scrubbing hammocks on docks, Newport, RI. 1940's.



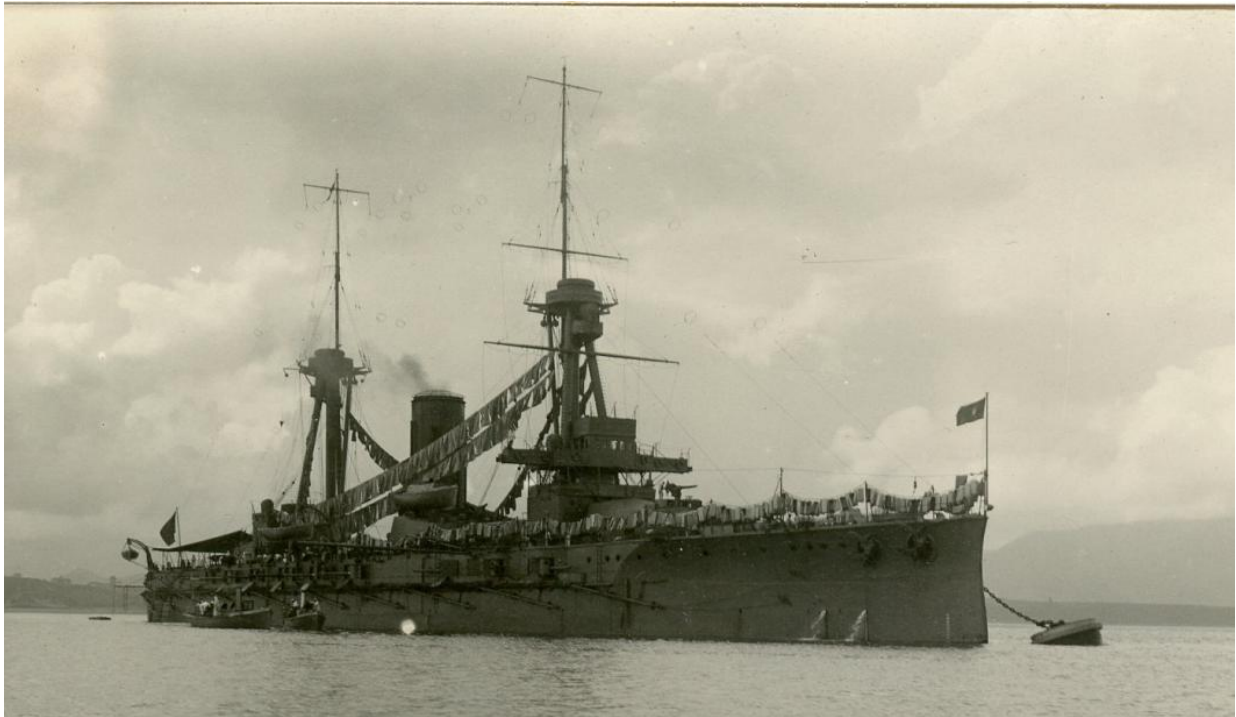
Source: Naval History and Heritage Command, NH 116931.

Figure 37: Hammock Inspection USS *Oklahoma* 1916.



Source: Naval History and Heritage Command (44423).

Figure 38: “Hammocks hung out to dry on the dressing line of the Spanish battleship *España* c. 1920 in an evolution known as *oreando coys*.”



Source: Bruce Taylor Collection.

Personal Hygiene

Personal hygiene was equally important in maintaining a sailor’s health and directly related to the cleanliness of hammocks. Sailors who neglected to remove wet clothes or maintain personal hygiene constantly filled their hammocks with water, sweat, and grime. Likewise, if hammocks and the ‘tween decks were not kept clean, they caused detriments to a sailor’s hygiene. Navies and crews often did their best to maintain hygiene. At the Great Lakes Training

facility, the United States Navy detained any sailor who showed physical or mental illness or dirty equipment until he rectified the problems.²³¹

Sailors maintained hygiene and therefore preserved hammocks by regularly washing linen and clothes. Men washed linens two to four times a month on average. This helped prolong the linens from becoming saturated with filth and soiling the mattress. Furthermore, cleaning and drying linens was easier and faster than hammocks. Regulations stated crews must wash clothes at least twice a week or as often as possible. In addition, a sailor could not get into bed with wet clothes on; rather, they had to disrobe and hang their clothes on their hammock hooks. Sailors often disregarded the later rule, however, sleeping in hammocks with sodden clothes, wearing the articles until they practically disintegrated.²³²

Poor hygiene and neglected cleaning had side effects other than a rancid smell and wet atmosphere. If sailors did not keep the decks cleaned, swept, washed, and aired, insect and vermin infestations would grow exponentially. Daniel Ammen described his experience in 1891, stating,

There was one condition ... that was disagreeable in the extreme, ... cockroaches; everywhere below decks it was ever present and repulsive. As soon as the hammocks were hung up, these pests would sally forth from their hiding-places and fly around, chasing one another in joyful glee. This annoyance was considerably abated after providing a dozen or more large jars with narrow mouths, and putting a little molasses and water in them. Morning after morning, for a month or more, these traps would be brought on deck and emptied

²³¹ Buzzell, *The Great Lakes Naval Training Station*, 104-105.

²³² Bellingshausen, *Voyage of Captain Bellingshausen*, 165; Bechervaise, *Thirty-Six Years of a Seafaring Life*, 120; United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 18; Gihon, *Practical Suggestions in Naval Hygiene*, 65; Leonard, *USS Constellation on the Dismal Coast*, 204; Jones, *Sketches of Naval Life*, 97; Shippen, *Thirty Years at Sea*, 77; Gihon, "The Need of Sanitary Reform in Ship-Life," 88, 96.

overboard, until at length the nuisance was sensibly abated, but still remained in disagreeable proportions.²³³

Poor ventilation, lax cleaning habits, and neglected hygiene, coupled with the typical lack of protection from the elements above deck, often resulted in disease. Steps were taken to diminish the frequency and spread of sickness and disease when detected, such as quarantine, the complete scrub down of vessels, or replacement of all hammocks and linens. Sailors, however, disregarded the precautions too often, while other times so many men in such a small place was simply too strong an equation for cleaning rituals to overcome. Although plenty of sickness still ravaged many ships, it remained the belief of the eighteenth, nineteenth, and half of the twentieth centuries that the “using of hammocks instead of berths” was healthier.²³⁴ No doubt at that time, in wooden vessels, it was.

Merchant vessels also underwent a fair amount of cleaning to maintain the safety of the ship and the cargo and to aid in the health of the men. Since fewer men berthed in a smaller stationary location, however, they did not share all of the same hygienic difficulties as naval ships, such as the difficulty of storing airing and bedding.

Sickbay

Hammocks also played a part in the sickbay and treatment of the wounded and infirm. Without a sickbay, the ill often slept in the corners, above and below deck, during the day, since the functions of a ship did not provide excess room to sling hammocks for the sick. As ships grew, sailors occasionally found space to sling hammocks during the day for the infirm. In 1751,

²³³ Ammen, *The Old Navy and the New*, 35.

²³⁴ Gihon, “The Need of Sanitary Reform in Ship-Life,” 44; Leonard, *USS Constellation on the Dismal Coast*, 37; Chisholm, *A Manual of the Climate And Diseases*, 13, 26, 27, 212.

regulations and instructions issued by the Privy Council of Great Britain, ordered sufficient room made for ill sailors based on the advice of the surgeon on board. It was not until 1801, however, that the Royal Navy designated specific, fixed locations of sickbays aboard naval vessels. The forward part of the berth deck, below the forecastle, was partitioned off for the sole use of the sickbay. The location allowed for easy temperature control due to its position near the galley stove and the ample ventilation by the high-set gun ports. Furthermore, it gave easy access to the head, a sailor's bathroom. Merchant vessels, however, did not employ sickbays; the ill simply remained in their bunks unless special quarantine was necessary.²³⁵

Sickbays employed hammocks and cots. Cots offered wounded men easier access and often a more comfortable, flat resting place. Edward Shippen, in his thirty-year memoir from the mid-nineteenth century, describes cots as,

... I was in a cot in the sick-bay. A "cot" is made of canvas, stretched on a frame, with sides of canvas, to keep one from rolling out, and ends, to which the sides are laced. The cot is suspended by "netties" from the head and foot, converging to a ring, which suspends the whole from hammock-hooks in the beams. When the cot is soiled the frame is taken out, and the canvas unlaced and scrubbed, just like a hammock. I am thus particular in describing a cot, because at this time I spent many weeks in one. Sailors on board a man-of-war are rather afraid of a cot, because, as it takes up much more room than a hammock, one is seldom ordered by the doctor, except for a very serious case.²³⁶

The sickbay also used many hammocks since they enabled more men to fit into the small area. Furthermore, they helped comfort certain ailments, such as seasickness and heat stroke, allowing the sailor to rock with the ship and providing ample ventilation. In some instances, however, sailors preferred neither hammock nor cot. One sailor, so overcome by diarrhea,

²³⁵ Arthy, *The Seaman's Medical Advocate*, 57; Great Britain, Privy Council, *Regulations and Instructions*, 55; Kevin McCranie, *Utmost Gallantry: The US and Royal Navies at Sea in the War of 1812* (Annapolis: Naval Institute Press, 2011), 145; Rodger, *The Wooden World*, 66.

²³⁶ Shippen, *Thirty Years at Sea*, 145.

preferred to lay on a chest rather than a bed. While others, when so sick and close to death, asked to lay on deck.²³⁷

At the beginning of each day, an officer sounded sick call. Any sailor who felt ill or injured could report to the medical officers. Those declared sick or hurt received a hammock or cot from the sail-maker or boatswain.²³⁸ Many of the men who reported, however, were not ill, as one sailor states, “About a dozen men usually appeared [during “sick-call”] in a sloop-of-war like ours when there was no epidemic on board. Of these, perhaps three would be sufficiently ill to be allowed their hammocks or cots.”²³⁹ Both the truly infirm and those feigning illness made for a cramped environment. The already small space included an operating table and a dispensary, before the sick crowded in. When the sickbay reached maximum capacity, men were forced into the corners of the lower decks, subject to the never-ending noise and disruptions from passing sailors. During war, a sickbay could become so overcrowded and overwhelmed, many injured men crawled to their hammocks, where they died unattended.²⁴⁰

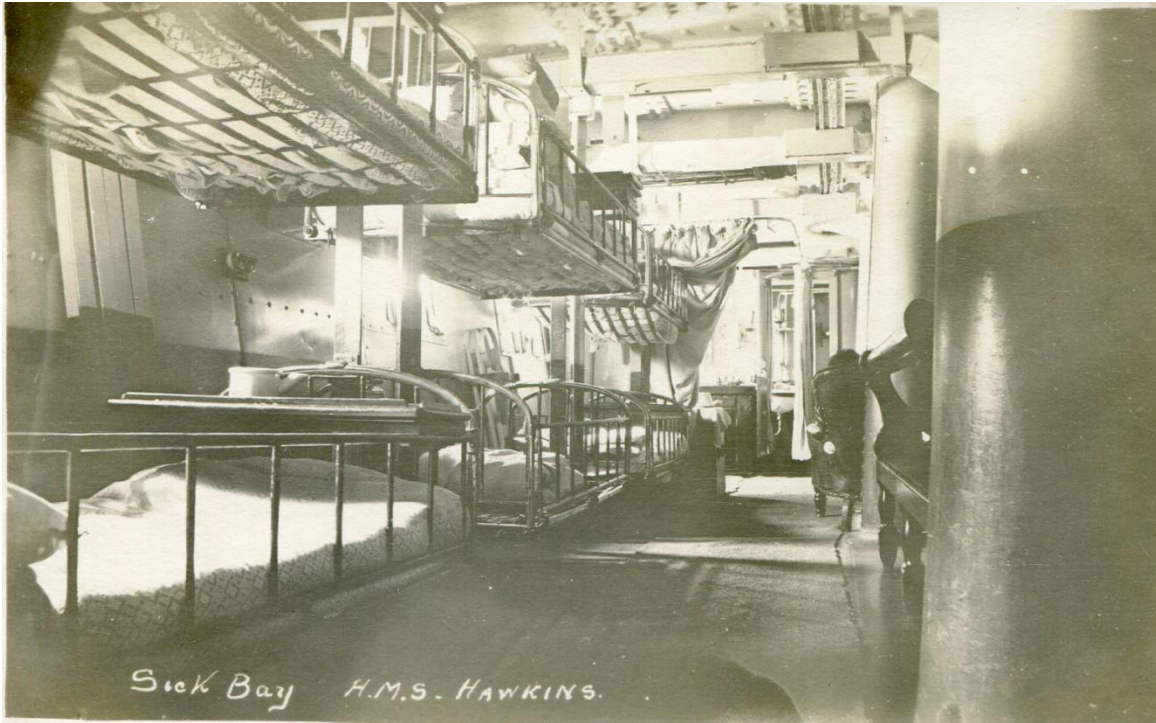
²³⁷ Leech, *Thirty Years from Home*, 120; Chisholm, *A Manual of the Climate And Diseases*, 218; Braisted, *Report on the Japanese Naval Medical*, 32; Robertson, *Synopsis Morborum*, 89; Severance, *The American Manual*, 142.

²³⁸ United States, Department of the Navy, Bureau of Equipment, *Regulations for the Enlistment*, 13; Nordhoff, *Man-of-war Life*, 63.

²³⁹ Shippen, *Thirty Years at Sea*, 149.

²⁴⁰ Braisted, *Report on the Japanese Naval Medical*, 32; Shippen, *Thirty Years at Sea*, 152; Leech, *Thirty Years from Home*, 146; Robertson, *Observations On the Jail, Hospital Or Ship Fever*, 64.

Figure 39: Bunks in the sick bay of the HMS *Hawkins* in the 1920s (the only bunks used by sailors aboard this vessel).



Source: Bruce Taylor Collection.

Burial

A sailor's hammock remained his property in death as much as life. Unable to preserve bodies until returning to port, due to decomposition and possible infectious disease, sailors received burials at sea; therefore, if a sailor died at sea, so too was his funeral and burial. After the crew mustered on deck, often in the evening, they wrapped the deceased man into his hammock and sewed it closed. Ballast, shot, or a cannon ball was inserted into or sewn to the makeshift cloth coffin to weigh down the sailor, preventing him from floating on the surface. Then a chaplain or captain often gave a speech or service. At the conclusion of the ceremony, the speaker would end with "we therefore commit his body to the deep." His messmates then lifted

the plank on which the body rested allowing the corpse to slide into the ocean.²⁴¹ Edward Shippen, in his 1879 autobiography *Thirty Years at Sea: The Story of a Sailor's Life*, illustrates the scene,

He is sewed into his hammock, weighted at the feet with round shot, or kentledge. A few hours after, all hands are called "to bury the dead." The main-yard is backed to deaden the ship's way, and the body is placed on a board projecting over the gangway, with the jack covering it. The chaplain, if the ship carries one, if not, the captain, or some other officer, reads the funeral service, and at the words "we commit his body to the deep" the board is tilted, and the remains strike the water with a dull splash.²⁴²

During times of war and battle, there was not always enough time or resources to bury the dead with all the normal pomp and circumstance; therefore, sailors often committed their messmates to the sea without sewing them in or weighing them down. In horrendous battles that tore men limb from limb, the body parts of different men scattered along the deck ended up in the same hammock coffin, buried together.

On rare occasions, during the death of a high-ranking officer or of a beloved crewmember, sailors provided the deceased with a wood coffin rather than a hammock. Like the hammock, the coffin received weighting. Furthermore, numerous holes were drilled throughout the coffin to allow water to fill the box so it would sink to the ocean floor. From time to time, if a ship was near land, or if a sailor died in a foreign port, he received a land burial rather than at sea, although his hammock still acted as his coffin. On merchant ships, because they usually lacked hammocks, scraps of canvas, linen, or makeshift entombment provided a coffin-like

²⁴¹ *Maritime Scraps*, 60-61; Nordhoff, *Man-of-war Life*, 197; Leech, *Thirty Years from Home*, 85, 152; George Little, *Life on the Ocean: Or, Twenty Years at Sea; Being the Personal Adventures of the Author* (Boston: Clark, Austin & Smith, 1852), 86, 101, 102; Cook, *Voyages of Discovery*, 230; Robinson, *A Sailor Boy's Experience*, 30; Don, *Reminiscences of the Baltic Fleet of 1855*, 52; Jones, *Sketches of Naval Life*, 36; Shippen, *Thirty Years at Sea*, 34, 123; *The History of a Ship From Her Cradle to Her Grave*, 233-234; John D. Whidden, *Ocean Life in the Old Sailing Ship Days: From Forecastle to Quarter-deck* (Boston: Little Brown and Company, 1832), 45; Corfield, *Silent Landscape*, 74.

²⁴² Shippen, *Thirty Years at Sea*, 34.

receptacle when possible. For most sailors who died at sea, however, their hammock was their last bed and their final resting place.²⁴³

Although disease, illness, filth, and wetness were unavoidable circumstances at sea, the hammock acted as a tool and catalyst to help stave the severity of those problems. Hammocks eliminated small coffin-like sleeping spaces that bred sickness and replaced them with the opportunity for men to sleep in more open and better-ventilated areas. The drawbacks of hammocks also forced navies to look at health and hygiene, creating rules and regulations to help maintain these factors for the safety of sailors. Although hammocks did not cure disease, if cared for properly, they acted as a tool to facilitate a healthier maritime environment.

²⁴³ Leech, *Thirty Years from Home*, 146; Robert Kerr, *A General History And Collection of Voyages And Travels: Arranged In Systematic Order: Forming a Complete History of the Origin And Progress of Navigation, Discovery, And Commerce, by Sea And Land, From the Earliest Ages to the Present Time* (Edinburgh: W. Blackwood, 1811), 57; Charles Carlton, *This Seat of Mars: War and the British Isles, 1485-1746* (London: Yale University Press, 2011), 279; Kennedy, *Hurrah for the Life of a Sailor*, 115; *Annual Register, Or A View Of History, Politics, And Literature, Of the Year 1823* (London: Baldwin, Craddock, and Joy, et al, 1824), 275.

Conclusion

The importance of past inventions are frequently overlooked, but it is the useful items in life, those used without thought, broke, discarded, and replaced, that are important in shaping history and the lives of men. As history progresses and these items are constantly mentioned in passing in the historical record it becomes clear just how much those items influenced lives and history. The history of hammocks aboard maritime vessels is one such item that acted as a tool that helped shape maritime culture.

Prior to the exposure of hammocks to the Western World, sailors slept on barren decks, occasionally with some form of basic shelter such as a forecastle, or in small coffin-like cabins. This created many issues, including health issues, reduction of useful space, and over-weighted ships. The introduction of hammocks into the maritime world, however, offered a solution to these problems and more.

The hammock most likely originated with the Arawak peoples of the Circum-Caribbean who carried them throughout the Caribbean islands where the Arawak-speaking Tainos and the Caribs introduced it to Columbus. From Columbus' initial contact with the hammock on November 3, 1492, hammocks began to penetrate the maritime world. Those sailors who traveled to the New World bartered for and returned with hammocks, which they possibly then traded upon their return. By 1597, the English navy began supplying ships with hammocks, believing they offered a far healthier sleeping environment. By 1629, the English navy outfitted all overseas ship with one hammock for every two sailors. Although the total integration of hammocks onto all naval vessels varied, it was most certainly complete by the first half of the eighteenth century, thus providing an important tool that facilitated maritime life.

The adoption of hammocks on maritime vessels directly impacted life at sea and facilitated many changes and improvements. As a removable tool, hammocks enabled the space in which they occupied at night to double as a useful space during the day. Therefore, space was no longer idle and wasted during the day, allowing for more room onboard ships, which enabled vessels to carry more sailors. The compact sleeping space of a hammock equally facilitated the employment of higher numbers of men aboard vessels. Although the general growth in the size of ships was due to the expanding construction technology, hammocks mirrored this technology and allowed ships to employ not only the sailors it took to sail the vessel but also the men it took to create ships of war. Prior to the adoption of hammocks, crew size averaged twenty-five men. By the middle of the seventeenth century, with the spread of hammocks, the same sized vessels averaged one hundred men crews; while large ships carried as many as eight hundred men, with numbers reaching as high as one thousand by the middle of the nineteenth century.

The advent of hammocks changed maritime life in financial ways as well. This new tool required labor and multiple materials, including canvas, rope, and various hardware and accessories, which cost money. Furthermore, as a bed, they required linens, blankets, and covers. All of these items, whether paid for by individual sailors or navies, created a monetary burden, and therefore affected the financial aspects of outfitting ships.

Additional monetary expenditures also derived from the changes to ships' construction. Although these costs were most likely minor, as the major change and therefore cost was the addition of hardware required to string the hammocks. Ship construction also changed with the introduction of hammocks. No longer were ships constructed with multiple cabins, but rather were fitted with specialized hardware for hanging hammocks on the open spaces of the gun deck, in a manner to maintain the trim and functionality of the vessel.

Hammocks also greatly affected sleeping conditions aboard maritime ships. Before the adoption of hammocks, men slept in tiny cabins or on bare decks with little shelter, generally viewed as miserable circumstances. The emergence of the hammock, however, meant men could now sleep below deck. As a removable tool, sailors had the opportunity to slumber on the gun deck, a vital space that could not function properly if encumbered with permanent structures.

Most sailors considered hammocks relatively comfortable. The primary complaint of comfort was the constant forced curve to the spine. Many believed the benefits of the cradle like motion, however, outweighed the negatives. Overall, hammocks provided a far more pleasant sleeping space for sailors.

Although hammocks considerably improved sleeping conditions, they came with their own set of drawbacks. Officials used the fact that hammock provided a way to house high numbers of men to justify overcrowding ships, creating a cramped environment, only allowing fourteen inches of sleeping space per sailor. Furthermore, hammocks were still susceptible to the wet atmosphere at sea. Although sailors took precautions to keep hammocks dry and clean, those who did not follow the rules, extremely leaky ships, and a wet atmosphere ensured hammocks were not always dry. Furthermore, the cleaning and drying of hammocks was subject to the weather, which was not always favorable, causing long stretches of time in which hammocks remained sodden. Although hammocks were not a perfect sleeping solution, they still created better sleeping conditions in a difficult environment.

Hammocks were also one of the many ways navies formed divisions between seamen and officers. Although most officers slept in hammocks, they received double the space and occasionally room dividers or cabins. Some high-ranking officers even slumbered in beds or cots. Sailors often used hammocks as a tool of comradery, laughing at greenies as they struggled

to mount their hammocks, jesting with the unfortunate sailor who tumbled out of bed accidentally, or playing pranks by cutting hammocks down as others slept.

Hammocks played an important role in everyday naval life. All military bodies require countless rules and regulations to maintain optimum functionality. Navies and their rules concerning hammocks were no exception. Regulations dictated the outfitting of hammocks, their handling, distribution, treatment, cleaning, and location. If any of the various regulations were ignored, those in violation were swiftly disciplined.

Routine dominated a sailor's life, and the introduction of hammocks onto maritime vessels altered daily routines to include various events involving hammocks. They marked the beginning and end of each day. At the start of each day, sailors rolled and lashed their hammocks, carrying them above deck for storage in the hammock netting. At the conclusion of the day, sailors reversed the process by gathering their hammock from the netting and stringing them up in their assigned location. Hammocks also influenced various routines throughout the month, primarily concerning the washing of hammocks, which occurred two or more times a month, if the weather permitted, with additional cleaning throughout the month for linen, clothes, and covers.

Additionally, hammocks influenced the changes in protection during war. One of the greatest features of the hammocks was their removability. This allowed any space they occupied at night to function differently during the day. The only dilemma was storing them during waking hours. To this problem came another multipurpose solution. By storing hammocks above deck along the railings, they doubled as a protective barrier during war, helping to protect men from cannon fire, small shot, and debris. This solution also required the change in the construction of ships, or more appropriately the need for additional hardware. To store

hammocks along the railing of the vessels, U-shaped brackets and boxes, with netting and covers, were installed to hold the hammocks. Furthermore, hammocks functioned as another form of protection; in the event of a sinking ship, hammocks provided floatation and life preservers for those in the water.

Moreover, hammocks caused changes in attitudes towards and procedures concerning health and hygiene aboard maritime vessels. Before hammocks, men slept on bare decks, with little shelter, or in putrid, stifling coffin-like cabins. Officials agreed hammocks provided a solution that improved the health of sleeping conditions. To optimize the health benefits offered by hammocks, various rules dictated the frequent cleaning of the ship and hammocks alike, to prevent damp stagnant air and rancid hammocks. Men also had to maintain personal hygiene. This included the treatment of clothing. Sailors were to keep themselves and their clothes as clean as possible. More importantly, however, regulations prevented sailors from bringing wet clothing into hammocks. Personal hygiene and the absence of sodden clothing in hammocks helped to maintain the longevity and cleanliness of hammocks, aiding in the health of sailors and ships. Hammocks also allowed the sickbay to hold more men than if there were only cots. Furthermore, they acted as a sailor's last resting place, functioning as coffins for those who died at sea. Therefore, hammocks, much like any tool, affected numerous aspects of maritime life.

Phasing Out

Just as the adoption of hammocks onto maritime vessels was a slow trickle, so too was their replacement by bunks. Starting around the turn of the twentieth century, as new ships were built and old ships were renovated, bunks began to replace hammocks. Once vessels started to grow rapidly, and battleships replaced warships, space below decks increased as well. Therefore,

once a vessel was large enough to provide a permanent area to house sailors, bunks replaced hammocks. As the available space grew and ships became more water-tight, many believed shifting to bunks or cots was not only possible and healthier, but would eliminate several of the difficulties and problems related to hammocks.²⁴⁴

Around the 1890's, the United States Navy began to use bunks on shore for navy men. Although, it still took some time to switch to bunks even on land. On April 26, 1917, a brand new set of forty barracks for one-thousand men, was outfitted with hammocks rather than cots or bunks. Passenger ships and merchant vessels, however, employed bunks on a large scale for many centuries past. Then in 1924, the United States Navy started their trial run of bunks on the USS *Oklahoma* and *California*.²⁴⁵

By World War II, many ships still employed the use of hammocks, such as the HMS *Hood*, whereas, other ships, such as the Battleship *Missouri*, transitioned to bunks. In 1942, bunks had replaced hammocks on all of the Big Five battleships except the USS *Tennessee*.²⁴⁶ Lisle Rose, in *Power at Sea, Volume 2: the Breaking Storm, 1919-1945*, suggests that “As late as 1940, most enlisted men slept in hammocks ... In the year before Pearl Harbor, most navy ships replaced the hammock with cots, and, eventually, bunks...”²⁴⁷ In the 1953 edition of *Encyclopedia of Nautical Knowledge*, however, the author, William MacEwen, stated,

²⁴⁴ Mason, *The Preservation of Life at Sea*, 6; Armstrong, “The Hygiene of Merchant Ships,” 66.

²⁴⁵ Mason, *The Preservation of Life at Sea*, 6, 8, 10; Michael D. Besch, *Navy Second to None: The History of U. S. Naval Training in World War I* (Westport: Greenwood Press, 2001), 133-134; Minturn, *From New York to Delhi*, 86.; Franklin Lawrence Babcock, *Spanning the Atlantic* (New York: Alfred A. Knopf, 1931), 108, 169, 170; S. L. Kotar and J. E. Gessler, *The Steamboat Era: A History of Fulton's Folly on American Rivers, 1807-1860* (London: McFarland and Company, 2009), 55, 177, 179; Harrod, *Manning the New Navy*, 149.

²⁴⁶ Paul Stillwell, *Battleship Missouri: An Illustrated History* (Annapolis: Naval Institute Press, 1996), 12; Mason, *Battleship Sailor*, 119; Taylor and Schmid, *The Battlecruiser HMS Hood*, 105, 124.

²⁴⁷ Lisle A. Rose, *Power at Sea: The Breaking Storm, 1919-1945* (Columbia, Missouri: University of Missouri Press, 2006), 331.

“Hammock(s) ... now almost displaced by metal-framed berths set up in tiers of two to three in height, depending on number of men carried and sleeping space allotted.” Implying some naval vessels still used hammocks.²⁴⁸

By the end of the twentieth century, hammocks in the military became a rarely used item, mostly by Marines and Special Forces in jungle settings, known as the Explorer Ultralite Asym hammock.²⁴⁹ It is unclear when the transformation truly began or when the transition was absolutely complete. What is obvious, however, is that the majority of the conversion took place in the 1940’s and 1950’s. Just as hammocks offered an improved sleeping solution to bare decks and coffin-like cabins, given the available space and technology, so too did bunks eventually provide even better sleeping conditions once the space and technology allowed for the evolution.

Image 40: Bunks referred to as “coffin racks.” USS *Missouri* 1987.



Source: Bruce Taylor Collection Courtesy of Rich Pedroncelli.

²⁴⁸ MacEwen and Lewis, *Encyclopedia of Nautical Knowledge*, 218.

²⁴⁹ “Roughing it in Comfort.”

Today

Even as hammocks were being phased out on naval vessels, their popularity began to grow in the public opinion. In 1940, Reginald Meek wrote an article for the *New York Times* entitled “A Cruise in a Hammock: Days and Nights aboard a Brazilian Ship Touching Strange Ports and Islands,” in which he praises the recreational use of hammocks stating,

Here one can learn the joy of sleeping on ship deck in a Brazilian hammock and under a tropical moon ... Now, before one climbs aboard the Oyapock one had best buy a hammock in Belém. And one can get a big colored beauty for two or three dollars. Some folk say that the art of making hammocks has been brought to perfection in Brazil. Certain it is that after one has acquired the knack of tumbling in and out one will be a hammock fan for the rest of one’s life. And Brazilian hammocks are big and wide. They are most pleasant at night under a star-filled sky when one swings in a cooling breeze. Before the ship is well away from port, Brazilians will be stringing up their hammocks to the beams, preferring to swing away the night on deck rather than sleep in a stateroom.²⁵⁰

Today the thought of hammocks conjures an image of sandy beaches and turquoise water. There are countless websites dedicated to the sale of every kind of hammock, many containing small introductions on the history of hammocks. Every type of hammock, from woven to synthetic and waterproof to those that swing on stands rather than between trees are available. The average person may know that hammocks were once a maritime tool, however, it is a thought lost among the now recreational identity of hammocks.

Future Research

As an item viewed with little importance until now, the history of the hammock received minimal attention. Only two works, “Hammocks and Their Accessories,” a four-page article,

²⁵⁰ Reginald H. Meek, “A Cruise in a Hammock,” *New York Times* (1923-Current File), November 17, 1940, 154.

written by Rear-Admiral Sir R. Massie Blomfield, published in the *Maritime Mirror* in 1911 and “Hammocks: A New Vision” a fine arts master’s thesis written by Laura L. Rowell, broach the topic at its full scope. These works, while accurate and insightful, only address the subject at a cursory level.²⁵¹ All other information on the matter comes in the form of single sentence comments, random observations, and insights in relation to other topics. For this reason, a comprehensive evaluation of the impact of hammocks on maritime culture was warranted. Although this author has attempted to address every facet of the importance of hammocks, there are still many areas for improvement.

The primary difficulty faced by this author, and therefore an area left incomplete, is the barrier of language. The inability to access and evaluate sources in other languages created gaps in the available information and therefore is one area future authors can expound upon. Although limited written record by early Caribbean and Mesoamerican cultures exists, those with advanced knowledge of their culture and languages may be able to expand on the origin of the hammock. Alternatively, possibly even those educated on Greek and Roman history could discern a detailed origin of the hammock, as one author postulates Alcibiades developed the hammock for the Athenian fleet in the early 400’s BC in Athens.²⁵²

The largest gap created by language barriers is the possible primary research on the adoption of and use of hammocks on Spanish, Dutch, and French maritime vessels, as this thesis mainly deals with British and United States ships. It is clear substantial material from other nations, especially from Dutch sources, is available. Vocabularies of other languages, however, pose future difficulties. While there are other spellings of hammock throughout the decades in English, different languages have more than one word to describe hammocks that also double as

²⁵¹ Blomfield. “Hammocks and Their Accessories,” 144-147; Rowell, “Hammocks: A New Vision,” 5-8.

²⁵² Smyth, *The Sailor's Word-book*, 363.

other words. While this may complicate future research, there is no doubt the available information and additional insights gained from understanding the evolution of the vocabulary would make for an interesting study and further expound on the knowledge provided here.

Although little evidence has been found in the course of this research pertaining to the archeological record or artifacts, most likely due to the fact that hammocks were made from easily degradable materials such as canvas and rope, it is possible that a deeper more comprehensive dig into such records could prove to be an avenue of future research and insight. The information collected to form this thesis and any additional information discovered could also be used to create a database for future scholars who are looking for information of hammocks pertaining to individual subjects.

In a time when ships were almost too small for the number of men they carried to arm the instruments of war, hammocks offered a technology that allowed hundreds of men to live and sleep fairly comfortably in extremely confined quarters. Their adoption in turn affected every aspect of maritime life. Men-of-war during the age of sail succeeded in functioning only with the technology and improvement that the adoption of hammocks provided.

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Appendix A

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