“The Painful Task of Thinking Belongs To Me:” Rethinking Royal Navy Signal Reform during the American War of Independence

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ABSTRACT

This thesis examines the context and causes of signal reform in the British Royal Navy during the American War of Independence. It argues that changes in the ethos of the officer corps before and during the American War of Independence led to a complex period of signal reform. The original system was tied to the *General Printed Sailing and Fighting Instructions,* more often referred to as the Fighting Instructions. For around a century (ca. 1690 to ca. 1790), the Royal Navy utilized the Fighting Instructions as its main system of communication. During the American War for Independence, however, some sea officers began to question the system and devise new methods of signaling. This change was brought on by changes within the officer corps. Among the changes were trends of centralization and the influence of Enlightenment ideals. Both of these shifts helped to inspire the signal reformers, while also creating the environment to sustain signal reforms. This thesis examines the signal reforms of the three principal signal reformers of the war: Richard Howe, Richard Kempenfelt, and George Rodney.

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GENERAL AUDIENCE ABSTRACT

This thesis examines the context and causes of signal reform in the British Royal Navy during the American War of Independence. It argues that changes in the ethos of the officer corps before and during the American War of Independence led to a complex period of signal reform. For nearly one hundred years, the navy utilized the same system of signaling to communicate between ships: the *General Printed Sailing and Fighting Instructions*, more commonly known as the Fighting Instructions. During the American War of Independence, some British sea officers began to question that system and propose alternate systems of their own design. Influenced by their lengthy naval experience, shifts in trends of centralization, and the influence of Enlightenment ideals, officers like Richard Howe, Richard Kempenfelt, and George Rodney experimented with new methods of signaling.

All scholarly works are a work of collaboration. This work would have been simply impossible without the support of my friends and family. Foremost, I must thank Sam. Your help has been absolutely invaluable and I am not sure my gratitude can quite be expressed in words. You moved everything to come here and support me. There are few things more selfless than that. You read my drafts, listened to my presentations, and imbued me with a very clear understanding of Joan Scott. We often asked each other what this pandemic experience would have been like if we had been apart. I think we both know it would have been completely unmanageable.

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Preface

On the fifth of September, 1781, the "British fleet had," in the words of Rear Admiral Samuel Hood, "a rich and most plentiful harvest of glory in view."[1] After several days, the fleet had finally found its French adversaries at the mouth of the Chesapeake Bay. Both fleets believed themselves to have numerical superiority and proceeded to engage the other. What followed was a tactical and strategic debacle for the British Royal Navy. As the fleets came together, the British commander, Rear Admiral Thomas Graves, hoisted two signals at once: one for the ships to arrange themselves in a line ahead and another to engage the enemy. Admiral Hood viewed these signals from his ship, which was positioned in the rear of the British line. Hood reasoned that both signals could not be simultaneously executed and that the signal for a line ahead trumped the other. Thus, he and his division of six ships of the line remained passively unengaged with the French fleet for the majority of the action.[2] In the end, both fleets received a battering, but the British received the worst of it. The British elected to return to New York for repair, abandoning the forlorn British General Charles Cornwallis to his fate at Yorktown. Recriminations between Graves and Hood flew almost instantly. Graves had communicated poorly. Hood had acted indecisively.

This conflict between two admirals of the same fleet was symptomatic of the ongoing changes in the Royal Navy. For nearly one hundred years, the navy utilized the same system of signaling to communicate between ships: the *General Printed Sailing and Fighting Instructions*, more commonly known as the Fighting Instructions. During the American War of Independence, some British sea officers began to question that system and propose alternate systems of their own design. Some officers, like Admiral George Brydges Rodney, found no fault with the framework of the system but thought the navy had to change how the system functioned and was used by officers. Others, like Admiral Richard Howe

[1] Samuel Graves to George Jackson, September 16, 1781, in *Letters of Samuel Hood: 1781-1782*, David Hanney, ed. (London: Navy Records Society, 1895), 33.
[2] Sam Willis, *Fighting at Sea in the Eighteenth Century: The Art of Sailing Warfare*, (Woodbridge, Uk: Boydell, 2008), 71.

and Vice Admiral Richard Kempenfelt, stressed the need for a radically new system, but each sought to forge a slightly different path forward.

This thesis will examine the reasons that Royal Navy personnel began to question the existing system and to call for new signaling systems. Through an examination of officer's records, letters, and contemporary writing on signal systems, this thesis will demonstrate how the American War for Independence became a turning point of the Royal Navy's debate over communication at sea.

The thesis argues that a gradual shift within the ethos of the British Royal Navy's officer corps before and during the American War of Independence (1775-1783) led to a complex period of signal reform. Initially, sea officers did not object to the Fighting Instructions. After a shift in the ethos of the officer corps - caused by social and intellectual trends toward centralization and Enlightenment concepts - some officers began to question if a better format for signals existed. Sea officers inspired by these trends achieved positions of prominence during the American War of Independence and tested their new systems during the conflict.

Chapter one begins by explaining the relationship between signals and tactics, and gives a brief history of signaling to help illustrate the relationship. It also provides a concise explanation of how the Fighting Instructions worked in practice, which will help the reader to understand the complications that arose from the Fighting Instructions, as well as from later reforms.

The second chapter examines contemporary eighteenth century attitudes towards reform generally, and the Fighting Instructions, more specifically, to establish that signal reform did not occupy a spot of greater prominence in the decades before the American War of Independence. By examining the fallout from some of the navy's most controversial battles, the chapter aims to show that sea officers did not place blame for their defeats on the Fighting Instructions. Additionally, the chapter examines some of the factors that helped to forestall reform, such as the navy's "informal doctrine" and the use of signal books.

Chapter three explores the reformers, themselves, as well as the trends and forces that inspired and sustained their signal reforms. This thesis does not cover every British signal reformer in the American War of Independence, but rather the most prominent three examples to demonstrate the forces that inspired reform. These forces included the reformers' extensive naval experience, which gave them greater exposure to the Fighting Instructions and the wider world of signals. Another force impacting reformers was a centralizing trend within the Royal navy. This trend comprised two distinct, but connected factors: the reforms of Whig politicians in response to social pressures and changes, and a gradual shift from the decentralized concept of honor to the centralizing notion of duty. The final force impacting reformers was the influence of Enlightenment thinking and the theories which helped signal reformers to rationalize signal reform and approach it from a scientific perspective. Together, these factors show that signal reform was more than the individual genius of the reformers, but rather the product of wider social, intellectual, institutional, and cultural shifts.

Lastly, chapter four explores the reforms implemented by the signal reformers during the American War of Independence and explores how the events of the war itself influenced the reforms. The War of Independence proved a unique type of war for British forces. Initially, Howe left for America to fight a "continent in rebellion," but one with no navy capable of threatening the Royal Navy.[3] As the Continental Navy became more effective and European navies joined the war, the reforms, too, took on a new tone, one which aimed to combat these new threats. The war also became a laboratory for the reformers to test their new systems, with mixed success.

[3] David Syrett, *The Royal Navy in American Waters 1775-1783*, (Aldershot, UK: Ashgate, 1989), 27.

Historiography

Naval historian N.A.M. Rodger begins his 1986 book, *The Wooden World,* with an honest assessment of naval history historiography: "The Navy has in recent years been an unfashionable subject among professional historians in Britain, with the natural result that its historiography in many respects is old-fashioned and the received views of it do not well agree with modern understanding of the currents of British history as a whole."[4] His assessment, by and large, was correct. Naval history has never been a wildly popular topic among British historians. William L. Clowes, author of the first survey of British naval history, written in 1897, deplored the lack of professional scholarly interest in his own time, despite the fact that he wrote during a period now considered to be the "golden age" of naval history.[5] Past historians gave many supposed reasons for the general apathy towards naval history. Rodger suggests the scholars have been turned away by the myth that the navy was nothing more than "a floating concentration camp."[6] Possibly, naval scholarship is often so technical that it dissuades potential researchers. Some British naval historians argue that other historians generally have a geocentric bias – meaning they suppose that things of historic importance only happen on land. None of these reasons alone are particularly compelling, but regardless, naval historians are left with a particularly insular discipline. Happily, the insular nature of naval history has slowly been eroding, and the field is becoming more and more interdisciplinary following larger trends in military history.

The first modern professional works on British naval history were written around the turn of the twentieth century. Similarly to other histories, British naval history was initially the story of great men and great events, sometimes known as the golden age of naval history (c. 1890 – 1930). More specifically, naval history, like military history, focused on important battles and strategies. Alfred T. Mahan, a U.S. naval officer and lecturer at the Naval War College, became a dominant contributor to the

[4] N. A. M. Rodger, *The Wooden World: An Anatomy of the Georgian Navy,* (New York: W. W. Norton, 1986), 11.
[5] William Laird Clowes, ed., *The Royal Navy: A History from the Earliest Times to the Present,* Vol. 1, (London: Sampson Low, Marston and Company: 1897), vii.
[6] Rodger, *The Wooden World,* 11.

field of naval history. Mahan's *The Influence of Sea Power Upon History 1660-1783* (1890) proved enormously influential.[7] Mahan, like many of his contemporaries, wrote for a military audience. In his introduction to *The Influence of Sea Power Upon History* he writes: "A study of the military history of the past, such as this, is enjoined by great military leaders as essential to correct ideas and to the skillful conduct of war in the future."[8] The lessons of naval history were, for Mahan, purely military and meant to teach his own fellow naval officers strategy and tactics.

Julian S. Corbett, like Mahan, wrote at the turn of the twentieth century and was certainly influenced by Mahan's works. Corbett wrote a number of enduring works, many of which still have historical worth. Most pertinent for this project are two volumes he edited for the Navy Records Society: *Fighting Instructions: 1530-1816* (1905) and *Signals and Instructions 1776-1794* (1909). This first work lays out a significant number of signal books and earlier signaling systems used by the Royal Navy, with an introduction by Corbett explaining their strategic usefulness. The second volume functions somewhat as a revision of the first. After evidence came to light that cast doubt upon Corbett's findings in the first volume, he was forced to revise some of his earlier conclusions about the exact sequence of signal reforms which he outlined in the second volume. As is typical of the period, though, Corbett's work views signaling systems solely as a method to analyze the tactical challenges of his own age. Furthermore, he wrote critically of the old system of Fighting Instructions, which Corbett viewed as antiquated and tactically limited.[9]

Corbett and Mahan's writing was meant for consumption by naval experts. The information they extracted from the past was meant to inform the decisions of contemporary naval leaders throughout Europe. Mahan believed that the tactics of battle in the age of sail and steam were fundamentally similar.

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[7] Roger Knight, "Changing the Agenda: The 'New' Naval History of the British Sailing Navy," *Mariner's Mirror* 97, no. 1, (February, 2011): 225–242, 225.
[8] Alfred Thayer Mahan, *The Influence of Sea Power Upon History, 1660-1783,* 12 ed., (Boston: Little, Brown, 1890), 2.
[9] Julian S. Corbett, ed., *Fighting Instructions, 1530-1816*, Navy Record Society, vol. 29, (London: Navy Records Society, 1905).

This perspective - analyzing tactics of past periods by using the standards of the present - makes for bad analysis. It fails to account for how eighteen century British sea officers understood and used their signal systems. The Royal Navy's officers did not believe themselves to be lacking in imagination or tactical understanding the way Mahan and Corbett said they did. Furthermore, admirals of the eighteenth and nineteenth centuries lived and operated in two very distinct professional settings. Their understandings of strategy and tactics *were* fundamentally different. The lessons of the past did not always carry over effectively. Later historians came to realize the flaws of writers like Mahan and Corbett, and began to broaden the boundaries of naval history.

Historians now refer to the scholarship created by the movement away from the golden age of naval history as new naval history. Initially, new naval histories began as empirical studies, focused on tying the navy to wider political, diplomatic, and economic themes. From there, the study of naval history has broadened to include many new untapped areas, including social, and administrative history.[10]

While much of the new naval history has been unrelated to operational history, many naval scholars continued down that traditional path. Unlike previous operational histories, these new renditions attempted to analyze the operations of the past on their own terms, devoid of modern comparisons. They began to question whether the old operational analysis of historians like Mahan proved very helpful. One such historian was John Creswell. Creswell published his well-known book, *British Admirals in the Eighteenth Century: Tactics in Battle*, in 1972. Creswell highlights some of the major misconceptions made by Corbett and Mahan regarding the system of signaling. He argues that they placed the blame for the supposed tactical stagnation of the eighteenth century on the admirals themselves. Rather, Creswell argues that the navy simply had no formal system of tactics, nor did technology radically change during the century to compel a complementary change in tactics.[11] Further, Corbett had believed that admirals

[10] Knight, "Changing the Agenda," 227-228.
[11] John Creswell, *British Admirals of the Eighteenth Century: Tactics in Battle*, (London: Archon Books, 1972), 7-8 and 253.

were required by their superiors and the Admiralty to adhere strictly to the Fighting Instructions.[12] Creswell argued that admirals were not bound by the Fighting Instructions. They were not permanent rules, like Corbett argued. They were simply a means of communication aligned to the dominant tactic at the time. The dominant tactics at the time happened to be the line ahead.[13]

Other more modern historians have taken on the task of analyzing Royal Navy tactics and communication. Sam Willis' book, *Fighting at Sea in the Eighteenth Century* (2008), puts the tactical situation into perspective. He argues that much of what has been written about tactics utilized contemporary treatises and the Fighting Instructions with little to no regard for the practical realities of naval combat in the eighteenth century. Traditional naval historians believed that the tactics espoused in treatises and the Fighting Instructions reflected everything that occurred in battle, when in reality, battles unfolded in a way that bore little resemblance to either treatises or the Fighting Instructions. Rather than rely solely on instructions and treatises, Willis examines contemporary officers' records and courts martial. Willis' perspective is an important one because it allows one to separate the Fighting Instructions from the reality of combat. That is certainly how the officers of the Royal Navy would have known it.[14]

Ruddock Mackay and Michael Duffy, too, have written about British tactics in this period. Their book, *Hawke, Nelson and British Naval Leadership: 1747-1805* (2009), looks at what made British admirals successful. Their work helps to identify historian's understanding of tactics in this period and how the Royal Navy's officers understood them.[15] Willis', Mackay's, and Duffy's work helps to show that signal reform was more than a simple switch from inefficiency to efficiency. Rather there was a complex conversation occurring within the Royal Navy during the American war.

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[12] Creswell, *British Admirals,* 8.
[13] The line ahead refers to the traditional formation the navy sailed in during battle. Essentially the fleet sailed in a single column to allow each ship to bring all its guns to bear.
[14] Sam Willis, *Fighting at Sea*.
[15] Ruddock Mackay and Michael Duffy, *Hawke, Nelson and British Naval Leadership: 1747-1805,* (Woodbridge: Boydell Press, 2009), 1-7.

The history of signaling systems was all too often a teleological business. Historians have assumed that more communication and more control equated to better outcomes during the eighteenth century. Due to this assumption, historians have focused on the immediate reforms and reformers that they believed brought about the system during the Napoleonic War. They have ignored the steps it took to get there and the contest of ideas that surrounded reform. Envisioning reform as a positive good ignores the sizable portion of the officer corps that supported various reforms that did not lead to the nineteenth century system, as well as those who did not support reform at all. Thus there is a heavy focus on the French Revolutionary and Napoleonic wars as the birthplace and testing ground of new signal systems. A closer look at the American War of Independence, however, reveals this to be not entirely true.

The social history of the navy has mirrored many of the trends of general social history. Michael Lewis - considered by many to be the father of the social history of the navy – is a case in point. Lewis spent his career in number of important naval institutions, including the Royal Naval Colleges in Osborne, Dartmouth, and Greenwich. One of his earliest works, *England's Sea-Officers: The Story of the Naval* Profession (1939), represents the first work to consider the officer corps as a whole. Like many of the social histories of the period, it is a history of a social structure and a decisively quantitative study at that. Analyzing data collected from two massive naval biographical dictionaries, *England's Sea-Officers* traces the story of how the officer corps became a modern officer corps.[16] For Lewis, there were six requirements for a modern officer corps that the Royal Navy fulfilled by the end of the nineteenth century.[17] This frame of analysis is no longer the most insightful. No doubt eighteenth century officers considered themselves modern officers. Nevertheless, *England's Sea-Officers* stands as one of the very first studies of the officer corps and historians continue to cite Lewis' work.

[16] Michael Lewis, *England's Sea-Officers: the Story of the Naval Profession*, (London: George Allen & Unwin, 1948).
[17] Michael Lewis, *England's Sea-Officers*, 7.

In the 1960s, historians began to shift their focus from the elites of society to the masses.[18] The social history of the navy followed this wider trend, focusing on the lives and experiences of common sailors, rather than officers and policy makers. The navy's social history also usually incorporated the theme of the oppressor and the oppressed. In the naval context the oppressor was the officer and the oppressed the heroically patriotic - but long suffering - British sailor. Many of these works highlighted the brutal mistreatment sailors faced at the hands of their officers.[19] Partially as a result of the paradigm of the tyrannical officer, but also from the general lack of naval scholarship, the history of the officer corps has remained unstudied in great detail after Lewis. When historians did pursue social histories, they usually represented of biographies of certain officers, such as John Barrow's two nineteenth-century works on Richard Howe and George Anson.[20] These studies proved useful in their own way – providing details of the lives of these officers as well as some of their correspondence - but they did not comprise a comprehensive look at the social world of the Royal Navy.

The reputation of officers remained mired in accusations of cruelty and ignorance for many decades. Of course, the Royal Navy has long been a lightning rod for accusations of conservative-minded admirals chained to tradition. Much of this image comes from the nineteenth century, when authors agitating for reform of the navy's system of discipline appealed to the British public who viewed the British sailor as "a noble patriot deprived of his rights and liberties as an Englishman," especially with the Napoleonic Wars in recent memory.[21] These same authors told sordid tales of brutal floggings and perpetually drunken sailors.[22] Indeed, when the naval historians of the golden age of naval history sat down to write their works at the end of the nineteenth century, flogging had only recently been

[18] Sarah Maza, *Thinking About History*, (Chicago: University of Chicago Press, 2017), 14-16.
[19] Rodger, *The Wooden World*, 11.
[20] John Barrow, *The Life of George Lord Anson ….* (London: 1839); John Barrow, *The Life of Richard Earl Howe*, (London: John Murray, 1838).
[21] John D. Byrn, *Crime and Punishment in the Royal Navy: Discipline on the Leeward Islands Station, 1784-1812*, (Aldershot, UK: Scolar Press, 1989), 2.
[22] Byrn, Crime and Punishment, 1-5.

discontinued in the Royal Navy and the rum ration was still being provided on British ships.[23] The old traditions of the navy seemed to be something very much alive to the navy's first historians. These historians also took a rather dismal view of eighteenth century admirals. In 1874, J. K. Laughton wrote of the "very strong conservative feeling" in the service and the wider maritime world.[24] Naval leaders were comfortable dealing with the shortfalls of the systems they worked under rather than inventing new ones, according to Laughton.[25] Mahan viewed things in a similar light, declaring that "changes in tactics have to overcome the inertia of a conservative class."[26] As mentioned previously, historians like Mahan and Laughton were looking to extract the lessons of the past to use as contemporaneous warnings. They saw admirals and administrators who in the eighteenth century became chained to their dogmatic beliefs in the traditional ways of the navy. Since Mahan and Laughton feared complacency in their own navies, it makes sense they would attribute this to the failures of the previous century.[27] In reality, the officer corps of the Royal Navy were not the conservative absolutists that they were made out to be. Historians have since corrected these narratives only gradually. The advent of the administrative history of the British navy has done much to aid in that process.

The administrative history of the navy has opened the door for many new avenues of research and allowed for the study of the navy as an institution. Put simply, administrative histories have explored how the inner workings of the navy functioned. Utilizing the copious records released around the end of the Second World War, this approach assessed the actions of the navy's administrators such as the First Lord of the Admiralty, the Admiralty Board, the Comptroller of the Navy, and the Navy Board.[28] Naturally, naval administrators oversaw the navy's officer corps. Thus utilizing new records in tandem with the disparate studies of individual officers, administrative historians implicitly carried on the work of Lewis

[23] The rum ration was only abolished in 1970. The anniversary of the end of the ration (July 31) is remembered in the service as Black Tot Day.
[24] J. K. Laughton, "The Scientific Study of Naval History," *Royal United Services Institution* 18, no. 1 (1874): 509.
[25] Laughton, "Scientific Study of Naval History," 510.
[26] Mahan, Influence of Sea Power, 10.
[27] Mahan, Influence of Sea Power, 10; Laughton, "Scientific Study of Naval History," 510; Willis, Fighting, 3.
[28] Knight, "Changing the Agenda," 231.

by further revealing how the officer corps functioned professionally. The two most important actors in developing this approach were John Ehrman and his student, Daniel Baugh. Naval historians often cite Ehrman's *The Navy in the War of William III* (1953) as the first work on naval administration. Baugh's *British Naval Administration in the Age of Walpole* (1965), though, really began to shift naval historians' attention to administrative history.[29] Many of the scholars who have risen to prominence in naval history today found their start in this period. People such as such as N.A.M. Rodger, David Syrett, Brian Lavery, and Roger Knight all began their careers studying administrative history. By the 1980s, these same historians began to shift to a type of naval history that incorporated more aspects of the wider historical discipline. This change witnessed renewed interested in naval history.[30]

Rodger's *The Wooden World* (1986) provides a good example of the change from administrative history to one incorporating other approaches. In the wake of his earlier administrative work on the Admiralty, Rodger sought to write a comprehensive social history on one period – in this case the Seven Years War. Rodger approached the social history of the officer corps differently than Lewis. Where Lewis sought to trace a story of progress, Rodger sought to understand the officers in their historical context. In many ways, Rodger's approach was typical of the broader trends in social history that were then developing. It was a social history that aimed to capture all aspects of British society, not just that of sailors. Rodger devoted a large part of his book to the social history of officers. One of the more important aspects Rodger covered was the systems of discipline and patronage that existed within both British society and the navy.[31] Rodger has sought to build upon this earlier work in his more recent article "Commissioned Officers' Careers in the Royal Navy, 1690-1815." It provided much needed insight into the basic questions of officer's careers, which when it was published in 2001 was still hard to come by. Interestingly, the article returns to the quantitative methodology of Lewis. Unlike Lewis, Rodger's paper does not seek to trace the rise of a new 'modern' officer corps. Rather, he aims to establish exactly how

[29] Knight, "Changing the Agenda," 232-3.
[30] Knight, "Changing the Agenda," 234-5.
[31] Rodger, *Wooden World*.

systems of promotion operated, arguing that these systems broke down during the French Revolutionary and Napoleonic Wars (1793-1815). Rodger's article also demonstrates the new evidence available to social historians of the navy that previous historians had failed to utilize.[32]

Since then, there has been an increase in historians working on the social history of the officer corps. Among them is Evan Wilson, who wrote a study entitled *Social History of British Naval Officers, 1775-1815* (2017). Wilson essentially built off the work of Lewis. Indeed he took a quasi-quantitative approach, while still relying on the small individual studies done on officers; however, Wilson, like Rodger, attempts to utilize newly available sources.[33] John Morrow does much the same. He produced a thematic study of the lives of Britain's admirals, one of the first works to focus specifically on that group. His approach is mainly quantitative, but he relies on biographical studies to fill gaps.[34]

The immediate subject of this thesis – the history of signal reform – is inherently part of naval history. This project intends to bring the subject of the history of signal reform out from the confines of strict naval history and view it instead in an interdisciplinary context. In essence, this thesis seeks to contextualize signal reform during the American Revolution. To do this adequately, this these reaches outside the bounds of naval history to incorporate the social history of eighteenth century Britain, and the history of the American Revolution. By incorporating social history, one can analyze the social systems in which officers operated. Using this approach, this thesis will assess who was interested in signal reform and why, and why those who rejected it did so.

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[32] N. A. M. Rodger, "Commissioned officers' careers in the Royal Navy, 1690–1815," *Journal for Maritime Research* 3, no. 1 (June 2001): 85-129.
[33] Evan Wilson, *A Social History of British Naval Officers, 1775-1815,* (Woodbridge, Suffolk: Boydell Press, 2017).
[34] John Morrow, *British Flag Officers in the French Wars, 1793-1815, Admirals' Lives,* (London: Bloomsbury, 2018), 1-7.

Chapter One: The History of the Fighting Instructions

I.

This chapter provides a brief history of the Fighting Instructions. It aims to show how connections between the Fighting Instructions, tactics, doctrine, and technology have aided in the development of the system. This chapter also examines how the Fighting Instructions work in practice and identifies some of their main criticisms.

The Fighting Instructions, at first glance, seem to be little more than a system of signals. A deeper dive into the history of the Fighting Instructions shows that a strong connection existed between communication and tactics. This relationship - explained in detail below – frames much of the discussion of the Fighting Instruction both today and in the eighteenth century. To begin, the Fighting Instructions comprised a part of the eighteen century Royal Navy's formal doctrine, because the Fighting Instructions contained not only signals, but also instructions on how officers should fight.

According to Geoffrey Sloan, who studies the history of military doctrine, doctrine is "a set of corporate beliefs, or the principles which guide an organization on how it interacts with a wider environment."[35] In essence, the Royal Navy's fighting doctrine aided them in understanding how they should fight. There are two types of doctrine: formal and informal. The former consists of regulations and orders: written, verbal, or via signal. The latter consists of custom and convention.[36] For example, if an admiral ordered an attack only on ships of inferior size, such a command would be formal doctrine. British officers knew to fight this way or to conduct themselves in such a way because it has been communicated to them by the admiral, whether via signal or formal orders. If an officer saw that their admiral was under attack from several enemies and took action to relieve the admiral, then that would be

[35] Geoffrey Sloan, "Military Doctrine, Command Philosophy and the Generation of Fighting Power: Genesis and Theory," *International Affairs* 88, no. 2 (2012): 244.
[36] Willis, *Fighting*, 83.

a form of informal doctrine because it was traditionally held in the Royal Navy that captains must come to the aid of their admiral if he was in distress. Navies fought the way they fought because that was what their doctrines called for them to do. While eighteenth-century admirals did not speak in terms of doctrine and tactics, this terminology remains a useful tool for modern observers to understand the development of these ideas within the Royal Navy.[37]

The means for communicating the desired tactics an admiral wished to use lay in signaling – hence the close connection between the two. Willis explains the importance of this connection when he writes, "The signaling system cannot be considered in isolation from the body of ideas and instructions which it sought to convey, for it is by an appreciation of both that the characteristics of communication in the eighteenth century become clear."[38] This idea is borne out by the history of British naval tactics leading up to the creation of the Fighting Instructions. Changes in tactics and doctrine led to a change in the signals and signaling systems commanders used.

Before the advent of gunpowder, conflict at sea was a much simpler affair. From the Middle Ages until the implementation of the shipboard cannon in the sixteenth century, the English navy's main purpose was to transport soldiers. It was rare for fleets to actually meet at sea, and when they did the only technologies available to strike at the enemy were bows and hand-held weapons. Even early-on, however, as Willis argues, communication at sea was inextricably tied to fighting doctrine. One can find evidence of this early connection in the *Black Book of the Admiralty*, a collection of admiralty laws during the medieval era. The *Black Book* allowed for two signals: one to call all commanders to come speak with the admiral and the other to warn of an enemy.[39] These signals reflected the tactical needs of the period. Far from being "backward and unprogressive," these signals complimented the doctrine of the period.[40] The

[37] Willis, *Fighting*, 83.
[38] Willis, *Fighting*, 70.
[39] L. E. Holland, "The Development of Signaling in the Royal Navy," *The Mariner's Mirror* 39, no. 1 (February 1953): 5.
[40] Holland, Development of Signaling, 5.

more complicated maneuvers of the eighteenth century would not have been very useful to medieval mariners who only needed to follow the example of their commander.[41]

In order for methods of communication to change, tactics needed to be transformed first. Tactics, in turn, changed when new technologies available for sea combat developed. As the English navy installed cannons in their naval vessels in the sixteenth and seventeenth centuries, tactics began to adjust.[42] Since cannons were increasingly arrayed on the sides of ships, maneuvering a ship to achieve a good firing position became increasingly important. In 1588, King Phillip of Spain cautioned his commanders against the English navy's changing mode of warfare: "You should take special note, however, that the enemy's [the English] aim will be to fight from a distance, since he has the advantage of superior artillery … while ours must be to attack … the enemy at close quarters."[43] In reality, though, the English navy wavered back and forth between older tactics like the Spanish employed and new tactics based around efficient cannon fire.[44] The seminal moment for the change in English tactics and thus new systems of signaling, came in the form of a running series of conflicts between the English and Dutch navies in the seventeenth century.

In 1652, the English fleet sailed from England with the intention to sweep the Dutch from the seas. The English myth of sea power reassured Englishmenthat a naval war was lucrative and simple. Once England let loose their fleet upon the hapless Dutch convoys, the Dutch Republic would sue for peace. Expectations did not match reality, though. For much of the next two decades England and the Netherlands engaged in a pitched battle for commercial dominance. There were three Anglo-Dutch wars in this time period. The first lasted from 1652-1654, the second from 1665-1667, and the last from 1672-

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[41] John B. Hattendorf, R. J. B. Knight, A. W. H. Pearsall, N. A. M. Rodger, and Geoffrey Till, eds. *British Naval Documents, 1204-1960.* Navy Records Society, vol. 131, (London: Routledge, 2018), 18-19.
42 Peter Padfield, *Guns at Sea.* (London: Hugh Evelyn, 1973), 29-69.
43 Phillip II to the Duke of Medina Sidonia, April 1588, in Hattendorf, Naval Documents, 87.
44 Brian Tunstall, *Naval Warfare in the Age of Sail: The Evolution of Fighting Tactics, 1650-1815,* edited by Nicholas Tracy, (Edison, New Jersey: Wellfleet Press, 2001), 11-21.

1674. The experiences of the Dutch wars provided the basis for the Fighting Instructions when they were written at the end of the seventeenth century, and solidified the line ahead.[45]

As a whole the experiences in the Anglo-Dutch wars went a long way to develop the Royal Navy as an institution.[46] The development of more sophisticated tactics and signaling was part of that growth. The tumultuous First Anglo-Dutch War proved to be the impetus for substantial reflection by the English Navy. The battles of Dungeness (1652) and Portland (1653) proved that the English navy lacked the fleet cohesion and tactical finesse to wage a successful war against another modern sea power.[47] As a result of these defeats the Admiralty issued a set of instructions entitled *For the Better Ordering of the Fleet in Fighting*. These instructions laid out what captains were expected to do in certain situations, and explained how admirals expected battles to be fought. This was also the first time that naval authorities brought instructions for battle and for routine sailing together in one book. Even more importantly, the Admiralty designed the new instructions to be used as circumstances required. Whereas previous instructions laid out very specific scenarios, the new set could be used in a more diverse set of circumstances, or what historian Brian Tunstall calls "realistic conditions."[48] The test came in June, 1653, at the Battle of the Gabbard. Over the course of two days, the English and Dutch fleets, each over 90 ships in size, hammered away at one another. The Dutch suffered heavy damage and were forced to flee back to the Netherlands. Upon his return the Dutch admiral admitted to the States-General "that the English are now our masters and command the sea."[49]

The Battle of the Gabbard saw another important innovation: the line ahead. The line ahead refers to a sailing formation where ships simply sailed one behind the other in a line. Such a formation allowed the ships sides to remain unobstructed gave them full range to fire on their enemy. The use of the line

45 Tunstall, Naval Tactics, 64.
46 Hattendorf, British Naval Documents, 190.
47 N.A.M. Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815,* (London: Penguin Press, 2004), 15-16.
48 Tunstall, *Naval Tactics*, 17-18.
49 Quoted in Rodger, *Command*, 17.

ahead on those two days in June, 1653, was not the first time the line ahead had been used by a European naval force. R.E.J. Weber argues that the Dutch had utilized the line ahead early as the 1630s against the Spanish. Weber further suggests that the line was a defensive maneuver, the purpose of which was to keep the heavily manned Spanish ships from boarding the Dutch.[50] Following on a similar line of thought, Rodger argues that at the Gabbard, the English intended to use the line to keep the *Dutch* at bay rather than risk hand to hand combat with their heavily manned vessels.[51]

The Second and Third Dutch wars also saw several innovations. In 1660, King Charles II reclaimed the English throne. He brought with him his brother, James, Duke of York. York, like his brother, took special interest in the navy, and was appointed Lord High Admiral upon his return from exile in France. In his role as Lord High Admiral, James controlled the Admiralty, and he took many actions that resulted in the professionalization of the navy, including the promulgation of a new set of fighting instructions.[52] Elements of James' fighting instructions were in effect up until the end of the century, after the adoption of the *General Printed Sailing and Fighting Instructions*, which demonstrates their usefulness. The most important innovation, though, came in the form of signals for forming the line ahead, thus showing that the maneuver was now firmly entrenched in English naval doctrine.[53] The development of the Duke of York's new instructions reflects the relationship between doctrine and signals. Now that a new tactic - the line ahead - had been developed and put into the Royal Navy's fighting doctrine, new signals were necessary to ensure that the tactic could be used in practice. The development of this and other new tactics and signals led to the implementation of the *General Printed Sailing and Fighting Instructions* in the 1690s.

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[50] R.E.J. Weber, "The Introduction of the Single Line Ahead as a Battle Formation by the Dutch 1665-1666," *Mariner's Mirror* 73, no. 1 (February 1987): 5-19.
[51] Rodger, *Command, 17*
[52] Rodger, *Command,* 68-9; Rodger, *Command,* 96; The brothers strove to become experts in naval affairs. Charles, unlike most other sovereigns, was comfortably acquainted with shipbuilding and navigation, primarily because of his extensive yachting experience. Astonishingly, both Charles and James could pilot a ship on the Thames, something even most sea officers could not do.
[53] Tunstall, *Naval Tactics,* 53 ;Tunstall, *Naval Tactics,* 22; Duke of York's Instructions, 1673, in Corbett, *Fighting Instructions,* 152-163.

Unfortunately for James, his naval accomplishments are often overshadowed by the events of his reign, which began in 1685 and ended with the Glorious Revolution of 1688. The new monarchs, William III and Mary II, launched England into a war with the French to defend William's native Holland.[54] The ensuing war, the Nine Years' War (1688-1697), finally saw the navy adopt the all-important *General Printed Sailing and Fighting Instructions*. The exact date of their publication remains a mystery, but the range of their publication lies from 1688 to 1690. In 1690, the *Sailing and Fighting Instructions* were reissued by Admiral Edward Russell. Several years later, in 1702, Admiral George Rooke promulgated a new issue of the Fighting Instructions, in which he rearranged some of the articles and simplified parts of the text. Rooke's version, entitled "The Sailing and Fighting Instructions for Her Majesty's Fleet," served as the basis for the *General Printed Sailing and Fighting Instructions* until the 1790s.[55]

II.

Modern readers may find it confusing to understand exactly what the Fighting Instructions were. Willis describes them simply: "[They] are lists of instructions from an admiral to his fleet captains that explain what is meant by a particular signal made in battle."[56] They were arrayed in a series of thirty two articles, usually bound in a book. Each article (with few exceptions) started with a lengthy description of what the admiral wanted his captains to do followed by the signal. The first article, for example, reads:

> When the admiral would have the fleet draw into a line of battle, one ship ahead of another (according to the method given to each captain), he will hoist a union flag at the mizen peak, and fire a gun; and every flagship in the fleet is to make the same signal.[57]

This meant that the signal for the fleet to form into a line was the British flag on the third mast from the front of the admiral's ship, followed by the firing of a single gun. Included in the article is the instruction for the signal: that the fleet should form a line. The article also instructs the captains to form in the order

[54] Unusually for this period, William and Mary ruled as co-monarchs. In normal circumstances, the spouse of the reigning monarch did not reign in their own right.
[55] Tunstall, *Naval Tactics,* 64
[56] Willis, *Fighting,* 2.
[57] Admiral Edward Russell Instructions, 1691, in Corbet, *Fighting Instructions,* 188.

and at the distances given by the admiral.[58] Each article, then, could be an explanation of how to perform some maneuver and, at the same time, contain the signal the admiral would use to order his captains to make the required maneuver.

One of the great criticisms of the Fighting Instructions, both then and now, is that there were only thirty-two articles. Naturally, an admiral would need more than thirty-two articles in the course of a naval battle in the eighteenth century. To compensate, the Fighting Instructions included so-called Additional Instructions. At the beginning of the eighteenth century, the Additional Instructions only included articles created by the navy's leading admirals. They were added by the Admiralty to the official list under the name of the admiral who created them. By mid-century, additional instructions could be, and were, written by any commander-in-chief of any station around the globe. For example, the commander-in-chief of the West Indies Squadron could create an instruction himself and distribute it to his subordinates. Crucially, this type of Additional Instruction only applied to the fleet of the Admiral who wrote it. Thus, if a ship left one fleet and joined another, many of the Additional Instructions that the captain had learned would be irrelevant. The Additional Instructions allowed flexibility into a system that was otherwise rigid. By the 1750's an admiral could simply write his own instructions, even ones that negated parts of the Fighting Instructions.[59] Contrary to what early twentieth century historians wrote, the Fighting Instructions could be flexible, if used properly.[60] Nevertheless, observers both then and now have highlighted limitations of this system of flag signaling.

A communication system based on flags is one based on sight. Conditions at sea were not always conducive to viewing flags correctly. In the English Channel, the navy often encountered hazy weather conditions that made it difficult to discern which flags were being flown.[61] Rain and smoke from the

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[58] This part was likely conveyed by written or verbal order before, or soon after, the fleet left port.
[59] Boscawen's Instructions, 1759, in Corbett, *Fighting Instructions,* 221.
[60] See David Syrett, *Admiral Lord Howe*, with a Foreword by James Bradford, (Annapolis, Maryland: Naval Institute Press, 2006), 116; Mahan, *Influence of Seapower*; Corbett, *Fighting Instructions*; Russell F. Weigley, *The Age of Battles: The Quest for Decisive Warfare from Breitenfeld to Waterloo,* (Bloomington, IL: Indiana University Press, 1991), 145-147; Holland, "Development of Signaling."
[61] Anonymous, "Letter to the Editor," *Naval Chronicle,* vol. 4, July 11, 1800, https://archive.org/details/navalchronicleco04londiala/page/n5/mode/2up.

discharge of guns could have a similar effect, and the sun was known to disrupt the viewer's perception of the colors of the respective flags.[62] This is not to say that flag signals were universally useless. During the Battle of Quiberon Bay in 1759, participants reported they were able to clearly distinguish all signals from the admiral, despite some of the worst weather conditions the Royal Navy ever fought in. Later, at the time of the French Revolutionary Wars, then Lieutenant Edward Codrington reported that he could read the admiral's signals before they were let loose, meaning that he could read the signal flags even when they were rolled up.[63] Of course, these were exceptional circumstances. The limitations identified by historians were enough to cause real problems that meant that communication was not guaranteed at any given moment. This, though, was a problem that all navies encountered when they used flags as the main form of signaling. The Fighting Instructions had several issues that were a part of the system itself, rather than the method of communication. Each of these problems, whether it be the lack of centralization, lack of improvisation, or flag size and color became the focus of reformers in the coming decades, especially during the American Revolution.

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[62] Willis, *Fighting,* 68; W. G. Perrin, *British Flags: Their Early History, and Their Development at Sea; With an Account of the Origin of the Flag as a National Device,* (London: Cambridge University Press, 1922), https://www.gutenberg.org/files/46370/46370-h/46370-h.htm, 162-166; Charles Young to Charles Middleton, July 24, 1780, in J. K. Laughton, ed., *Letters and Papers of Charles, Lord Barham, 1758-1813.* Navy Records Society, vol. 32, (London: Navy Records Society, 1906), 1: 69.

[63] Willis, *Fighting,* 69; Jane B. Bourchier, ed., *Memoir of the Life of Admiral Sir Edward Codrington: with Selections from his Public and Private Correspondence,* vol. 1. (London: 1873), 1:14-5; When signals were hoisted, they lashed to the halyard and rolled up. Only when the entire signal was run up the halyard were they unraveled.

Chapter Two: "Our Sailing and Fighting Instructions Might Be Amended:" Reexamining Fighting Instructions

Throughout 1745 and 1746, Great Britain was consumed with controversy following the ill-fated Battle of Toulon. On February 22, 1744, the British fleet under Admiral Thomas Mathews met with a combined Franco-Spanish fleet. In the ensuing battle, Mathews subordinate, Vice Admiral Richard Lestock, held his division back while Mathews, now outnumbered and outgunned, plunged into the jaws of the combined Franco-Spanish fleet – a scenario not too different from the Battle of Chesapeake, thirty-seven years later. Upon returning to England, Lestock published a number of treatises and pamphlets in defense of his honor.[64] In one anonymously published pamphlet, Lestock declared "Men in the highest stations at sea will not deny but what our sailing and fighting instructions might be amended, and many added to them, which by every day's experience are found to be absolutely necessary."[65] Historians have long cited this quote as evidence that naval leaders were "striving to release themselves from the bonds in which the old instructions tied them."[66] Rather, a closer reading shows that Lestock wished only to amend them. Indeed, Lestock does not denounce the entire system, but rather he denounces the lack of additions made to it. He was not releasing himself from his bonds, simply readjusting them.

This chapter examines contemporary attitudes towards the Fighting Instructions, and seeks to explore why so few officers pushed for reform of them. To understand contemporary attitudes towards the Fighting Instructions it considers officers' stances on reforms other than signaling reforms which indicates that officers did not simply oppose the concept of reform. Next, sea officers' experiences with more complex operations like joint army-navy assaults shows that officers, in fact, often crafted their own signals. These points aim to show that officers were more than capable of pursuing signal reform if they

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[64] Richard Lestock, "Vice-A—l L-st-k's Account of the Late Engagement Near Toulon…," (London: 1745), Eighteenth Century Collections Online, 8; Pamphlet, 1744, in Hattendorf, *Naval Documents*, 373-4.
[65] Vernon and Additional Fighting Instructions, 1744, in H. W. Hodges and E. A. Hughes, eds., *Select Naval Documents*, (Cambridge: Cambridge University Press, 1922), 127-128.
[66] Corbett, *Fighting Instructions*, 208.

wanted to; rather they seem to have declined to take up reform. The chapter then explores the results of two controversial fleet actions – the Battle of Toulon and the Battle of Minorca (1756) - which show how eighteenth century sea officers did not identify the Fighting Instructions as the reason for the two defeats. To explain their tepid attitude towards signal reform, this chapter surveys the intricate context around the Fighting Instructions and shows that things like signals books and additional instructions papered over the cracks in the system, forestalling reform.

I.

The Austrian War of Succession went poorly for Britain, as a petition from the merchants of London to the King in 1741 reveals. The petition reported that some three hundred merchant ships had fallen prey to enemy vessels operating in the English Channel. Not three years later, Britain suffered one of its most traumatic defeats at the Battle of Toulon.[67] Contrary to accusations of intransigence leveled by nineteenth and early twentieth century historians, the navy as a whole stirred to change and fix those problems that had brought them so low. Over the course of the next decade, the navy embarked on a series of reforms that help prove that the navy did not reject reform.

These reforms sought to centralize control of the navy and reverse the losses of the first half of the Austrian War of Succession. For historians, they act as a helpful barometer for officers' attitudes towards reform. They included such things as standardized uniforms and ranks.[68] Two other important innovations came in the form of the revision of the General Printed Instructions and the Articles of War. The former was a document that laid out captains' administrative duties concerning the management of ships, and the latter were the laws to which all sea officers and seamen of His Majesty's navy were bound.[69] As historian Sarah Kinkel argues, "[The reforms] transformed naval culture" by helping officers

[67] Merchants' Petition, 1741, in Hattendorf, *British Naval Documents,* 366-367; Tunstall, *Naval Warfare,* 83.
[68] Admiralty Memo to the King in Council, November 13, 1747, in Daniel Baugh, *Naval Administration, 1715-1750,* Navy Records Society vol. 120, (London: Navy Records Society, 1977), 82; Admiralty Minute, July 15, 1747, in Baugh, *Naval Administration,* 80-1; Baugh, *Naval Administration,* 39-40.
[69] General Instructions, 1663, in Hattendorf, *British Naval Documents,* 283-9; Articles of War, in Byrn, *Naval Courts Martial,* 4-20.

to have pride in their service and their country.[70] Whereas before officers might have eschewed a command they perceived as dishonorable, by the end of the century they understood that they must serve wherever His Majesty pointed for no other reason than it was their duty.[71]

These reforms, however, were far from popular, despite the writings of later historians who could clearly appreciate their contributions in hindsight.[72] Plenty of officers expressed concerned about reforms such as one which gave naval courts' jurisdiction over officers who were not on active service. Officers believed that, as gentlemen, they had the right to refuse orders when they were not on active service. This reform would make such a refusal subject to punishment.[73] Most sea officers who opposed the bill were actually concerned for their own reputations and liberties. They complained that this measure would subject them "to a Degree of Slavery" and "vest an unprecedented and tyrannical Power in the Lords of the Admiralty."[74] Several officers banded together and signed petitions to parliament calling for the government to strike the offending article of the bill. In the end, the government acquiesced.[75]

At first glance, opposition to the bill seems to confirm that sea officers opposed reform. Here, one finds conservative officers bent on maintaining their antiquated privileges and opposing meaningful professional reforms. Again, the reality was much more complicated. The officers who signed petitions and wrote treatises against the half-pay section of the above bill worried that the government was overextending its authority. In her article, "Disorder, Discipline, and Naval Reform in Mid-Eighteenth-Century Britain," Kinkel shows that the reforms of the 1740s were crafted in the image of "authoritarian whiggery," which held that society was being destroyed by anarchic elements, including an unruly lower class. To remedy the supposed social decay, policies that highlighted order and hierarchy had to be put in

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[70] Sarah Kinkel, "Disorder, Discipline, and Naval Reform in Mid-Eighteenth-Century Britain," *English Review* 128, no. 535 (December, 2013): 1481.
[71] N. A. M. Rodger, "Honour and Duty at Sea, 1660-1815," *Historical Research* 75, no. 190 (November 2002): 425-447.447; more on this topic will be discussed in chapter three.
[72] Rodger, *Command,* 326
[73] Rodger, "Honour and Duty;" Kinkel, "Naval Reform," 1476.
[74] [William Wildman Barrington?], *Considerations on the Bill for the Better Government of the Navy,* (London: 1749), Eighteenth Century Collections Online, 6.
[75] "On the Navy Bill, Grants, &c," *Scots Magazine,* [undated], 146.

place by the government.[76] Rather than seeking to maintain a tyrannical hold over their own floating fiefdoms, many naval leaders were eager to ensure that the power of the state did not take hold over the navy.

It is clear from their attitudes towards the reform measures of the 1740s that officers were not ironclad conservatives and traditionalists. They supported reforms that protected their station as officers and gentlemen, and opposed those that threatened their liberty and rights as Englishmen. The arguments of men like Laughton and Mahan, then, fall short in explaining why the navy refused to revise the Fighting Instructions. Sea officers took no issue with revision or reform, so the idea that they opposed reform out of a sense of traditionalism is suspect.

More importantly, throughout this period of change there was little meaningful attempt to reform the Fighting Instructions. If the Fighting Instructions were so detrimental to the navy's capability, and Admiralty officials were so bent on turning around the navy's performance in the war, it is striking that they made no move to reform the Fighting Instructions. There may be one explanation, though. It is possible that the Admiralty wanted to leave signal reform to individual admirals. Indeed, while naval officials did not pursue signal reform, some flag officers took the opportunity to craft new additional signals, thereby indicating that some officers thought critically on signals and tactics.

If most officers were amenable to certain reforms, there were certainly those who pursued naval reforms with remarkable vigor. Men like admirals George Anson and Edward Vernon devoted much of their time to transforming numerous facets of the Royal Navy, from uniforms to tactics. Notably, they chose not to reform the Fighting Instructions. Both men did write their own additional instructions which contributed to the "advance" of tactics, but they never struck at the core of the system itself.[77] Their additional instructions exemplified how admirals influenced the Fighting Instructions through additional instructions, but not through signal reform.

[76] Kinkel, "Naval Reform," 1457-8.
[77] Corbett, Fighting Instructions, 203.

In 1739, Britain formally declared war on Spain, though hostilities had been ongoing for some time. The conflict came about in large part because of British and Spanish disagreements over trade. The war that followed became known as the War of Jenkins' Ear, though it eventually merged into the War of Austrian Succession that began in earnest in 1740.[78] These two conflicts provided the setting for Vernon and Anson's experiments with additional instructions. Even before hostilities were officially declared, the Admiralty dispatched Edward Vernon with a squadron of nine ships to the Caribbean with orders to take or destroy Spanish possessions there.[79]

Vernon was descended from minor Cheshire gentry and his father, James, was a Secretary of State for King William III. No doubt because of this connection, Edward entered the Royal Navy as a Volunteer per Order in 1700.[80] Under the patronage of several distinguished admirals, like Sir George Rooke and Sir Cloudsley Shovell, Vernon rose through the ranks of the Royal Navy. Like many well connected officers of the period, Vernon's naval career was not his only preoccupation. He was also a member of parliament for various constituencies at different periods. Whether through the publishing of pamphlets and treatises, speeches on the floor of the House of Commons, or half-hour lectures to King George II, Vernon was an energetic proponent of a strong and efficient navy.[81]

Vernon's thoughts regarding the Fighting Instructions were complicated. On one hand he was deeply worried by what he saw in the navy's officer corps. He found that after a quarter century of peace, many fledging officers had little practical experience to rely upon. The answer, nominally, would be for the officers to be exposed to the leading naval theories of the time, which would prevent them from acting

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[78] The War of Jenkins' Ear was coined in the nineteenth century. It refers to a British merchant, Robert Jenkins, who supposedly had his ear cut off by Spanish authorities as retribution for his smuggling. In an apocryphal tale, Jenkins' presented his severed ear to Parliament, who quickly declared war on Spain in a fit of patriotic zeal. There is, however, no evidence to suggest this story is true. For more see Rodger, *Command,* 235-40.

[79] Vernon's Orders to Captains, July 26, 1739, in Bryan McL. Ranft, ed., *The Vernon Papers,* Navy Records Society vol. 99, (London: Navy Records Society, 1958), 289; Richard Harding, "Edward Vernon, 1684-1757," in *Precursors of Nelson: British Admirals of the Eighteenth Century*, edited by Peter Le Fevre and Richard Harding, (Mechanicsburg, PA: Stackpole Books, 2000), 165-6.

[80] A Volunteer Per Order were midshipmen who served in the patronage of the sovereign. Other midshipmen would have been selected by the individual captains.

[81] Harding, "Vernon," 151; Harding, "Vernon," 170.

on a whim according to their own understandings of how the British navy had fought in the past. Vernon believed that theory could be an adequate, though not absolute, substitute for practical battle experiences.[82]

The Fighting Instructions, however, represented both sides of this equation. They were a physical manifestation of the experiences of the commanders of the Spanish War of Succession (1701-1714) who had been among the first to use and mold them. In that context, then, they represented the very thing that, in Vernon's view, hindered many naval officers - the old, and perhaps outmoded tactical assumptions of their predecessors, offered without comment, presented as the alpha and omega of naval tactics. They also made up part of the navy's formal doctrine. In short, as Bryan Ranft, editor of Vernon's papers, argues, Vernon was critical of the "hand-to-mouth development of English naval tactics."[83] Instead, Vernon desired a comprehensive collection of British naval tactics that could be studied by rising naval officers, one which delved more deeply into theoretical questions around tactics – a viewpoint echoed passionately by Richard Kempenfelt.[84] Though inchoate and piecemeal, Vernon recognized that the navy had little else to turn to besides the Fighting Instructions. He also understood that the navy could utilize tactics like the line ahead effectively if the commander could manipulate the Fighting Instructions efficiently. Thus, rather than revise the Fighting Instructions in their totality, Vernon decided to improve upon them.

On his way across the Atlantic to the Caribbean in 1739, Vernon wrote at least two additional instructions and disseminated them to his captains. The first signal - a yellow and white flag flown at the main mast - ordered the smaller ships of the squadron to fall out of line to form a reserve. The second provided a means of communicating that Vernon desired the whole squadron or particular ships to draw closer to the enemy. These show that Vernon realized that he could make the Fighting Instructions more effective with innovative instructions and signals. Going one step further, Vernon included in the first

[82] [Edward Vernon], *An Enquiry into the Conduct of Capt. M---n…,* (London: 1745), Gale Primary Sources, 20-1.
[83] Ranft, *Vernon,* 288.
[84] Kempenfelt served under Vernon for several months during Vernon's attack on Porto Bello.

instruction a note to captains that he understood that some of the signals could be hard to see and that he would endeavor to put them in spots where they could be viewed them easily.[85]

Additional instructions, as used by Vernon, show that the signaling system could be used in a flexible and innovative way, assuming that the right person authored and implemented the proper instructions. According to Tunstall, Vernon's additional instructions met the general approbation of the service. His were the first additional instructions to be widely adapted by other officers throughout the navy since those of John Norris several years earlier.[86] Vernon's career ended in a bitter clash with the Admiralty over different strategic and institutional views. The Admiralty removed Vernon from command of the main British fleet in the English Channel. He later published private correspondence between himself and the Admiralty in an attempt to win public favor.[87] This only earned him his dismissal from the service.

One of Vernon's successors in charge of forces in the Channel was George Anson. Naval scholars remember Anson as one of the most reform minded officers in the service. Like Vernon he sought to reform the Fighting Instructions in some small way. Anson was a remarkable and frustrating figure in the history of the Royal Navy: remarkable because of his meteoric rise and incessant drive to reshape the service, and frustrating in that he left very little correspondence for historians to study. Nevertheless, he played a crucial role in the navy of the mid-eighteenth century. Many of the reformers of the American War of Independence were trained under the influence of his administrative and institutional innovations. Unlike Vernon, Anson worked within the administration of the Royal Navy for almost two decades. Rodger expands upon this, writing: "The changes he wrought were for the most part gradual, many concerned with crucial but unexciting administrative processes, and the presence of his own guiding hand

[85] Vernon's Orders to Captains, July 26, 1739, in Ranft, *Vernon,* 290-1; Vernon's Orders to Captains, August 8, 1739, in Ranft, *Vernon,* 291.
[86] Tunstall, Naval *Warfare,* 79.
[87] Harding, "Vernon,"173.

is easier to sense than to prove."[88] Indeed, Anson holds a good portion of responsibility for the reforms that the Admiralty brought to the navy in the 1740s.[89]

The exact date that Anson joined the navy is unknown to historians, but he received a lieutenant's commission at the age of nineteen or twenty in 1716. One of his first duties was in the fleet of Sir John Norris, whose additional instructions were central to the tactics of the period. After this, the Admiralty transferred him to a fleet operating under George Byng that fought in the Battle of Cape Passaro in 1718. After serving in Charleston, South Carolina and West Africa, Anson returned home to England. Shortly after war was declared between Britain and Spain he was summoned to the Admiralty where he was informed that he was to lead an expedition to attack Spanish colonies on the Pacific coast of South America.[90] He began the expedition leading eight ships and set a course around Cape Horn for the Philippines. Over the course of the expedition, Anson lost over one thousand sailors and all but one of his ships, but he did circumnavigate the globe and capture a Spanish treasure galleon. Anson returned to England a very wealthy national hero.[91]

Due in large part to his early successes, Anson entered politics - a fact that emphasizes the correlation between politics and social life on the one hand and naval successes on the other. He was returned as Member of Parliament for Hedon in 1744 and aligned himself with the Duke of Bedford, who shortly became First Lord of the Admiralty. Due to his newfound fame as well as his naval expertise, Bedford brought Anson onto the Board of Admiralty. Rather uniquely, Anson served on the Board while also commanding the main fleet at sea. He utilized this position to affect a number of different reforms

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[88] Rodger, *Wooden Walls*, 30.
[89] Daniel A. Baugh, *British Naval Administration in the Age of Walpole*, (Princeton, NJ: Princeton University Press, 1965), 78.
[90] John Barrow, *The Life of George Lord Anson…,* (London: 1839), https://books.google.com/books?id=G59WAAAAcAAJ&pg=PA360&dq=john+Barrow+the+Life+of+George+Lord+Anson,+London+1839,&hl=en&newbks=1&newbks_redir=0&sa=X&ved=2ahUKEwigp8TX2ZjqAhUZl3IEHUYkBHYQ6AEwAHoECAAQAg#v=onepage&q&f=false, 5-21.
[91] N.A.M. Rodger, "George, Lord Anson, 1697-1762," in *Precursors of Nelson: British Admirals of the Eighteenth Century*, edited by Peter Le Fevre and Richard Harding, (Mechanicsburg, PA: Stackpole Books, 2000), 179-80.

over the course of the War of Austrian Succession that influenced the later signal reformers of the American War of Independence.[92]

Like his contemporary, Vernon, Anson understood that officers could not simply rely upon the Fighting Instructions. Officers needed practice to gain an intimate understanding of how they worked. Officers like Anson spoke of the neeed for naval discipline; however, they used this term differently than its modern connotation would suggest. In the eighteenth century, discipline implied something more akin to the modern concept of training.[93] When Anson became Commander-in-Chief of the nascent Western Squadron, he ensured that his captains were well-acquainted with his intentions should they meet an enemy fleet. He went a step further and saw to it that the fleet regularly trained in maneuvers, which, with some notable exceptions like Vernon, most commanders neglected. When Anson flew a signal, there could be little doubt about what the admiral intended his captains to do.[94] Admiral Peter Warren declared that "no service had ever been so agreeable to him as this cruise under Anson, & that with respect to action he had learned more from him than in all the time he had been at sea before."[95] Such a system of training set up a role model for later admirals seeking to better understand how to direct their fleets with the tools they had.[96]

Anson's contribution to signal reform came in the shape of the line of bearing – a new type of sailing formation that required a whole set of new additional instructions. Probably instituted around 1747, this formation was similar to the line ahead. "To form a line of bearing," writes Willis, "each ship formed up on a prearranged compass bearing from each other - as opposed to forming up abreast or ahead

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[92] Rodger, "Anson," 182.
[93] Rodger, *Wooden Walls*, 205; Tunstall, *Naval Warfare*, 48; Christopher O'Bryan, *Naval Evolutions: or, a System of Sea-Discipline…,* (London: 1762), Eighteenth Century Collections Online; Barrow, *Anson*, 405; Hawke to Captains, March 30, 1755, in Ruddock F. Mackay, ed., *The Hawke Papers, a Selection: 1743-1771*, Navy Records Society vol. 129, (Aldershot, UK: Scolar Press, 1990), 119; Rodney Report on French Forces, July 22, 1774, in David Syrett, *The Rodney Papers*, Navy Records Society vol. 151, (Aldershot, UK: Ashgate Publishing, 2007), 2:174; Rodney to Jackson, January 28, 1780, in Syrett, *Rodney*, 2:329; Warren to Corbett, August 8, 1745, in J. Gwyn, ed., *The Royal Navy and North America: The Warren Papers, 1736-1752*, Navy Records Society vol. 118, (London: Navy Records Society, 1973), 146; Knowles to Newcastle, July 9, 1746, in Gwyn, *Warren*, 290.
[94] Rodger, "Anson," 183.
[95] Quoted in Rodger, "Anson," 183.
[96] George Rodney to Carkett, July 30, 1780, in Godfrey Basil Mundy, *The Life and Correspondence of the Late Admiral Lord Rodney*, vol. 2, (London: 1830), 354.

of each other."[97] In other words, the fleet formed a diagonal line, but sailed on one another's quarter in an echelon formation. Tunstall argues that this formation had a huge impact on the American Revolution and was much used by the commanders of the day. The line of bearing made it easier for ships to sail in formation, and also allowed them to quickly form a line of battle if they spotted an enemy.[98] Anson's reform, like Vernon's represented a new set of additional instructions.

Vernon and Anson embodied two of the most forward thinking officers of their time. They, like the signal reformers who came after them, tried to improve the service, not simply leave it the way they found it. Their tactical and administrative reforms were far reaching, yet they took no action to revise the Fighting Instructions in depth. Surely, if Anson believed the Fighting Instructions to be detrimental to the service, he would have taken more decisive action to revise them. That both he and Vernon used additional instructions rather than set about a wholesale reform of the Fighting Instruction indicates that they did not necessarily object to the system itself. The trends which later inspired the signal reformers of the American War of Independence, namely centralization and Enlightenment influences, did not yet have the influence throughout the navy to bring about meaningful signal reform.

Anson and Vernon represented one end of a spectrum of the officer corps; however, one finds that officers throughout the service interacted with signals often enough. Plenty of evidence exists to prove that the officers of the Royal Navy were capable of critical thinking regarding signals. The signals used by the navy and army during joint operations were an excellent index of their creative thinking. Joint army-navy operations, or amphibious operations, became an increasingly salient part of sea officers' jobs. The navy had a long history of transporting soldiers across the sea. Until the seventeenth century, ferrying soldiers about had, in fact, been the main task of the Royal Navy.[99] Amphibious operations required a staggering amount of planning and organization. Men and equipment had to be loaded and unloaded in

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[97] Willis, *Fighting*, 66.
[98] Tunstall, *Naval Warfare*, 99-100; Willis, *Fighting*, 66.
[99] Hattendorf, *Naval Documents*, 16; N.A.M. Rodger, *The Safeguard of the Sea: A Naval history of Britain, 660-1649*, (New York: W. W. Norton, 1997)

such a way as to minimize confusion and the maximize speed of the operation. Oftentimes, this had to be done under enemy guns.[100] Such intricate plans required coherent communication.

Unlike the Fighting Instructions, the Admiralty cared little for the form that amphibious operations communications took. From the evidence available, it seems that the commander of their convoy or the admiral of the fleet gave masters of transports and other merchant ships a copy of their sailing instructions. These signals dictated the movements of the fleet outside of battle.[101] When it came to the actual embarkment and disembarkment of troops, admirals had much more latitude.

Admirals and commanders showed their abilities when it came to crafting their communications for amphibious landings. The signals arranged by commanders in these situations varied. They were often much simpler than the Fighting Instructions. For example, one such set required only that the admiral fly a blue flag to alert the general that he intended to attack that morning.[102] During the ambitious attack on the Spanish fortress of El Morro near Havana, in 1762, British admirals created a more intricate set. They split it into public and private signals, and further separated the public signals into day and night signals. They made signals for transport ships to send men, ammunition, and longboats for assistance, as well as signals that indicated the status of El Morro under the naval bombardment so that the ships further out to sea could remain informed.[103] This set of signals reminds historians that admirals could devise new signals when it suited them. At the same time, British sea officers understood that they could encounter situations for which they had no signals. On the back of the set recorded in David Syrett's *The Siege and Capture of Havana, 1762,* one finds a note written in pencil by Captain Augustus Hervey addressed to Commodore George Keppel. It reads "Sir, I have the misfortune to be aground. Pray send a frigate to drop

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[100] David Syrett, "The Methodology of British Amphibious Operations During the Seven Years' and American Wars," *Mariners Mirror* 58, no. 3 (August 1972): 269-280. Martin Robson, *A History of the Royal Navy: The Seven Years War,* (London: I. B. Tauris, 2016), 84.
[101] Notes by Hawke, September, 1757, in Mackay, *Hawke,* 168; Lords of the Admiralty to Rodney, May 11, 1750, in Syrett, *Rodney,* 1:149; Testimony of Edward Hawke, December 20, 1757, in Hattendorf, *Naval Documents,* 385.
[102] British Signals for the Attack on Sullivan's Island, [June, 1776], in William James Morgan, ed., *Naval Documents of the American Revolution,* vol. 5. (Washington, DC: Naval History Division Department of the Navy, 1970), 5:516.
[103] Signals During the Bombardment of El Morro, July 1, 1762, in David Syrett, *The Siege and Capture of Havana, 1762,* Navy Records Society vol. 114, (London: Navy Records Society, 1970), 211-2.

a bower [a type of anchor] off and send one end of the cable on board here."[104] While Hervey and his ship escaped to fight another day, his message on the back of this set of signals serves as a reminder that no one could anticipate every outcome, but they could and did certainly try. Just as important, the fact that officers, like Keppel, crafted these systems demonstrates that they had the ability to invent new systems and signals. A careful examination of the officer corps' attitude towards the Fighting Instructions helps to show why officers rarely made use of this power.

II.

The people of Great Britain identified very deeply with the King's navy. For most British subjects, the navy represented their principle defense from the outside world – namely France and Spain. Thus, when the navy suffered defeats, it was a subject of deep concern at all levels of society.[105] Events like the Battles of Toulon (1744) and Minorca (1756) were well-documented both by those who experienced them and by the popular press in Britain. Each of these battles resulted in courts martial for many of those involved, most notably Thomas Mathews and Richard Lestock after Toulon, and John Byng after Minorca. All of the records surrounding these defeats supply historians with evidence of how contemporary officers viewed their peers' actions relating to the Fighting Instructions, and the defeats explain why reform of the Fighting Instructions lagged.

Brian Tunstall describes the Battle of Toulon as "The greatest example of tactical disorder in British naval history."[106] The battle, which took place near the Mediterranean naval port of Toulon, pit the British fleet under Thomas Mathews against a combined Franco-Spanish fleet under the direction of Juan José Navarro y Búfalo and Claude-Élisée de Court de La Bruyère.[107] The combined fleet sailed from Toulon on February 11, 1744, when Mathews' blockading fleet sailed to intercept them. The British

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[104] Hervey to Keppel, July 1, 1762, in Syrett, Capture of Havana, 212.
[105] Timothy Jenks, *Naval Engagements: Patriotism, Cultural Politics, and the Royal Navy,* (Oxford: Oxford University Press, 2006), 1-7.
[106] Tunstall, *Naval Warfare,* 83.
[107] As a reward for his victory the King of Spain granted Navarro the modest title *marqués de la Victoria,* or Marquess of Victory.

attack was characterized by confusion. Historians have criticized Mathews for neglecting to keep his subordinates informed on his plans prior to the battle and flying conflicting signals during the action.[108] The aftermath of the battle was equally disastrous. Mathews ordered his battered fleet to retreat to the safety of Port Mahon on the island of Minorca. In so doing, he ceded control of the Mediterranean Sea to the Franco-Spanish fleet which swiftly reinforced the wavering Spanish army in Italy.

In the immediate wake of the battle, Mathews sought to shift blame to his subordinate, Richard Lestock, whom he detested. Lestock stood before a court martial in 1746, but the court, filled with many of Lestock's political allies, acquitted him. Mathews, too, received a court martial. Unfortunately for him, he did not have the allies that Lestock did, and the court ordered him cashiered from the service.[109] The battle and its aftermath, in the words of Rodger, "aroused violent emotions," much of which is reflected in the articles and court records of the time.[110]

Signals played a central role in the debate over whom was to blame for the failure off Toulon. Mathews' critics argued that as the fleet headed into the battle, Mathews had flown a signal for it to remain in line, as he pushed closer to the enemy with his portion of the fleet, leaving the rest of the ships behind. Many civilian observers pointed out that contrary to the ideas exposed in the Fighting Instructions, Mathews did not operate his fleet as a cohesive unit.[111] Since Mathews had not conferred with any of his captains about how he intended to attack the French before the battle, they were left to believe he would at least adhere to the general tenants of the Fighting Instruction. When Mathews did not, they were left in a state of uncertainty. Lestock later noted sardonically, "We were altogether unacquainted with [Mathews' maneuvers], unless it could be supposed, that we could remember them, notwithstanding the omission of two years, since the honourable Admiral [Mathews] commanded in the Mediterranean."[112]

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[108] Tunstall, *Naval Warfare,* 89; Willis, *Fighting,* 76.
[109] Rodger, *Command,* 245.
[110] Rodger, *Command,* 243.
[111] *The History of the Mediterranean Fleet from 1741 To 1744 …,* 2nd ed. (London: 1745), Eighteenth Century Collections Online, 88; "Proceedings of the Political Club," *The Scotts Magazine,* February 7, 1746.
[112] Lestock Pamphlet, Richard Lestock, in Hattendorf, *Naval Documents,* 371.

During this battle of blame, both sides sought to use the Fighting Instructions as a cudgel to batter their foes, while never blaming the system itself. Articles of the Fighting Instructions appeared in print for the public to read and judge for themselves how closely each officer had adhered to them.[113] Of course, no one mentioned that the Fighting Instructions had no legally binding power and that most officers understood that they could deviate from them as they liked, so long as they adhered to their superior's orders.[114] At a meeting of the "Political Club," a group that debated issues of the day, one member cast doubt on Mathews' "neglect of his instructions and the usual military discipline," by which he meant the line ahead and the Fighting Instructions.[115] Another pamphlet argues that Mathews' failure to bring his fleet into combat in an orderly manner was not "conformable to Discipline, and the fighting [sic] Instructions."[116] Rather than cast doubt on the system that contributed to the debacle, the public – and officers themselves – seemed content to offer up the Fighting Instructions as a tool to condemn their enemies.

The sole exception to the general lack of blame placed on the Fighting Instructions seems to have been the famous "Lestock Pamphlet," quoted at the beginning of this chapter. Taken alone, it seems to make a convincing case; however, as this chapter argues, Lestock called for simple amendments to the system. Lestock's remarks on the Fighting Instructions fit into the wider context of the pamphlet which was a scattershot denunciation of all the things Lestock found fault with in the battle. It also was a lengthy attempt to show that the French had every conceivable advantage even before the first shots were fired.[117] What is more, Lestock actually supported the use of the Fighting Instructions to a degree that had become unusual in the service by writing, "It is the Duty of every Admiral commanding in Chief … to give every Captain, under his Direction … the sailing and fighting Instructions, both which are signed by himself,

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[113] *A Narrative of the Proceedings of His Majesty's Fleet in the Mediterranean, and the Combined Fleets of France and Spain, from the year 1741 to March 1744.... (London: 1745), Eighteenth Century Collections Online,* 77
[114] Creswell, *British Admirals,* 7-8; Willis, *Fighting,* 90-93.
[115] "Proceedings of the Political Club," *The Scotts Magazine,* February 7, 1746.
[116] *History of the Mediterranean Fleet,* 88.
[117] Lestock Pamphlet, in Hattendorf, *Naval Documents,* 374

and are, to all Intents and Purpose, express orders, not on any Pretence [sic] or Motive to be violated."[118] By the time Lestock published his pamphlet, most officers understood that they did not need to adhere strictly to the Fighting Instructions, as he called for.[119] When taken out of context, Lestock's comments seem to support signal reform, but they are, in fact, part of a larger treatise written with the express purpose of defending Lestock from criticism.

The chief purpose of Lestock's pamphlet was to shift blame for the battle onto Mathews.[120] Lestock's argument hits at the broader suggestions of most of the criticisms leveled at Mathews: that he mishandled or otherwise ignored the Fighting Instructions. The director of the East India Company, William Baker, wrote to Admiral Sir Peter Warren, "It now begins to be the opinion of everybody that the whole miscarriage was owing to Mathews' ignorance, cowardice and pride," thereby placing blame on the officers using the Fighting Instructions, not the system itself.[121] The officers overseeing Mathews' court martial agreed. The court noted that "there is a Body of general printed Signals provided for Guidance and Direction" of the fleet, and no commander necessarily *had* to draw up his own additional instructions.[122] The court implied that they believed the Fighting Instructions were sufficient, unless the commanding Admiral desired more tactical options. It went on to say that if an admiral did supply additional instructions, "It is incumbent on him to make his Signals in so plain and distinct a Manner, that no Mistake or Misapprehension of them may arise in the Fleet," something Mathews neglected to do.[123] It appears, then, that both the public and professionals placed the blame squarely on either Lestock or Mathews and not on the Fighting Instructions.

Sitting on Mathews' court martial when he received his sentence was a forty year-old Rear Admiral of the Blue, John Byng. At the official outbreak of the Seven Years War, the Admiralty

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[118] *Proceedings of His Majesty's Fleet in the Mediterranean,* 49-50.
[119] Willis, *Fighting,* 90-3.
[120] *Proceedings of His Majesty's Fleet in the Mediterranean,* 87-8.
[121] Bakers to Peter Warren, March 23 1745, in Gwyn, *Warren,* 67.
[122] *Resolutions of the Court-Martial, upon the Several Articles of the Charge Against Thomas Mathews, Esq; Previous to the Pronouncing Sentence,* (1746), *Eighteenth Century Collections Online,* 2.
[123] *Charge Against Thomas Mathews,* 2.

dispatched Byng, son of the famous Admiral George Byng, first Viscount Torrington, to relieve the siege of Fort St. Phillip on the island of Minorca. On May 20, 1756, Byng arrived off the coast of the island. Soon after, he spotted a French fleet. As the two fleets approached, the French army commander ashore, the Duc de Richelieu allegedly commented "Gentlemen, there is a very interesting game being played out there. If Monsieur de La Galissonière defeats the enemy, we may continue our siege in carpet slippers - but if he is beaten, we shall have to storm the place at once, at any cost."[124] Byng cautiously closed with the French around 2:00 PM. He tried to bring his fleet up to the enemy without charging at them head on. A direct approach, he knew, could be dangerous because each ship risked enemy fire to its bow. In the ensuing battle, the van and rear of Byng's fleet engaged the French; however, Byng's center division did not approach the enemy. In fact, Byng hung back some two miles from the battle's center in an attempt to observe the battle more carefully and issue instructions to his fleet via "frantic" signals made from his flagship, HMS *Ramillies*.[125] Over the course of the next three and a half hours both fleets battered away at one another. The French admiral, the Marquis de La Galissonière, sensed that the battle would not be a decisive one and he allowed his ships to be born downwind from the British, thus bringing that battle to an anticlimactic end.[126]

After the battle, Byng surveyed his situation and decided that the fleet had received too much damage. He believed that no prospect existed for a second successful battle against the French and set sail for Gibraltar to refit. In so doing, Byng left the Mediterranean in the control of the French and allowed the siege of Fort St. Phillip to continue – forcing its capitulation one month later.[127] Like the Battle of Toulon, the Battle of Minorca did not result in devastating damage to the British fleet. Nevertheless, the defeat outraged the British public, and the government happily offered Byng up as a scapegoat.[128] Upon his

[124] Quoted in Rodger, *Command,* 266.
[125] Robson, *Seven Years War,* 32-34.
[126] Robson, *Seven Years War,* 34.
[127] Rodger, *Command,* 266; Robinson, *Seven Years' War,* 36; Byng Council of War, May 24, 1756, in Hattendorf, *Naval Documents,* 380-1.
[128] Robson, *Seven Years War,* 38.

arrival in Portsmouth, the Admiralty ordered Byng to be confined to an apartment in Greenwich Hospital to await trial.[129]

Like Mathews' and Lestock's trials, Byng's played out as a matter of national concern. Newspapers reported that all elements of society debated Byng's conduct. Emotions ran high. In Southampton, near the principle naval port of Portsmouth, a mob coalesced around an effigy of Byng which they hung, shot, and then burned in turn.[130] In the shadow of national outrage, the court martial of Byng began on December 28, 1756 onboard HMS *St. George.*

In a repeat of the events from twelve years earlier, the court, naval professionals, and the public laid blame for the defeat of British arms at the feet of Byng. The court unanimously agreed that Byng's signaling had been frantic. They highlighted one moment of the battle in which Byng attempted to halt the rear part of his line while he wanted the ships ahead of him to continue on. After hoisting the signal to slow down, "he ordered it to be hauled down in a very few Minutes, and caused the Signal to be hoisted for the Fleet to fill and stand on, the Van to fill first."[131] Notably, the court faulted Byng for poor signaling, while ignoring what was admittedly a confusing signaling situation. At another point, the court even suggested that Byng should have sent more signals, explaining "that instead of shortening Sail, the Admiral ought to have m[ade] the Trident's and Princess Louisa's Signals to make more Sail; a[nd] that he ought also to have set so much Sail himself, as would have enabled the Culloden (the worst sailing Ship in his Division) to have kept her Station with all her Plain Sail set, in order to have got down with as much Expedition as possible, to the Enemy; and thereby, have properly supported the Van Division."[132] Clearly, observers blamed Byng's use of signals, not the system of signals.

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[129] "The Monthly Chronologer," *London Magazine, Or, Gentleman's Monthly Intelligencer*, 25, (August, 1756): 401. http://login.ezproxy.lib.vt.edu/login?url=https://search-proquest-com.ezproxy.lib.vt.edu/docview/5203691?accountid=14826.

[130] "Christopher De Beaumont, &c." *The Scots Magazine*, 18, (July, 1756): 359. http://login.ezproxy.lib.vt.edu/login?url=https://search-proquest-com.ezproxy.lib.vt.edu/docview/5930338?accountid=14826.

[131] Charles Ferne, *The Proceedings of the Court-Martial on the Trial of Admiral Byng…*, (London: 1757); Ann Arbor: Text Creation Partnership, 2011, https://quod.lib.umich.edu/e/evans/N06198.0001.001/1:2?rgn=div1;view=fulltext, 38.

[132] Ferne, *Trial of Admiral Byng*, 37.

The public's verdict struck an even darker tone. One anonymous author rather melodramatically declared "The Truth of the Matter seems to be, that the Love of our Country is an old-fashioned, obsolete Virtue," and Byng quite simply neglected his duty as a British admiral.[133] The *Scots Magazine* proclaimed "The resentment of a people was perhaps never higher against a man, than that of the English is at present against Adm. Byng."[134] The people of Guildford made their resentment well known. During Byng's trip from London to Portsmouth for his trial he passed through the town "where a great Fire was made, and just as he was passing by it, an Effigy, representing his Honour, was thrown into it, with loud Huzza's."[135] These reactions indicate, at least, that the public condemned Byng, not the Fighting Instructions.

Even those who sought to exculpate Byng chose not to shift blame to the Fighting Instructions. Many chose to blame the government for sending Byng with too small a squadron, even when they knew the French fleet to be larger than Byng's own.[136] Byng's allies, such as George Rodney also blamed political forces for sullying Byng's name. In a letter to his wife, Jane, well before the public received certain news of the outcome of the battle in England he asks "Why did they not send him with a superior force, then there would have been no doubt, but he would have obliged the enemy to retire and would have relieved Port Mahon[?]"[137] One week later, Rodney wrote Jane again. Still there was "no certain account from our friend Mr. Byng," yet he had "great reason to hope that the vile reports that have been propagated concerning him are without the least foundation."[138] Finally, as the facts became clear, Rodney became fully convinced that the attacks on Byng were political only, writing "The songs upon Mr. Byng occasion some mirth to those who are glad to trip up his heels."[139] Yet in full light of the facts Rodney later admitted "I must own I cannot perceive the least glimpse in his favour. His not landing the troops after the battle is inexcusable, as likewise his not sending a boat on shore to Saint Philips to

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[133] *A Letter to the Officers of the British Navy*, (London: 1757), Eighteenth Century Collections Online, 37 and 20.
[134] "Christopher De Beaumont, &c." *The Scots Magazine*, 1739-1803 18, (07, 1756): 358, http://login.ezproxy.lib.vt.edu/login?url=https://search-proquest-com.ezproxy.lib.vt.edu/docview/5930338?accountid=14826.
[135] "London," *Oxford Journal*, January 1, 1757, British Newspaper Archive.
[136] "A Review of the Conduct of the British Ministry…" *Scots Magazine*, August, 1756, British Newspaper Archive.
[137] George Rodney to Jane Rodney, June 15, 1756, in Syrett, *Rodney*, 1:209.
[138] George Rodney to Jane Rodney, June 22, 1756, in Syrett, *Rodney*, 1:214.
[139] George Rodney to Jane Rodney, July 30, 1756, in Syrett, *Rodney*, 1:219.

acquaint them with the occasion of his retreat."[140] It is interesting that Rodney, someone who did eventually seek to restructure the Fighting Instructions did not offer the Fighting Instructions as a reason for Byng's poor conduct when he seemed so keen on shifting blame from his friend. Rather he seemed contented to blame the ministers in London and Byng's political enemies.

The court martial found Byng guilty as he did "not do his utmost to take or destroy every Ship which it shall be his Duty to engage; and to assist and relieve all and every of His Majesty's Ships which it shall be his Duty to assist and relieve," for which the court "adjudged [him] to be shot to Death, at such Time, and on board such Ship, as the Lords Commissioners of the Admiralty should direct."[141] The sentence was carried out on the quarterdeck of HMS *Monarque* (sometimes spelled *Monarch*). Before his demise, Byng penned a letter expressing his thoughts on the events of the preceding year. He, too, held his "Enemies" responsible, as well as the government since "the Armament under my Command proved too weak to succeed in an Expedition of such Moment."[142] From first to last, the concern of those involved in the Battle of Minorca and its aftermath revolved around the personalities of the principle officers and not the Fighting Instructions.

The Fighting Instructions were not the subject of blame during two of the most controversial events in British naval history. In hindsight, each of these battles - Toulon and Minorca - showcase the flaws of the Fighting Instructions. During both battles, the respective admirals mishandled their fleets terribly.[143] Yet, as the evidence shows, most observers blamed the commanding admiral for the defeat. They did not condemn the Fighting Instructions nor the tactics used. Their failure to point out the Fighting Instructions as a possible problem, indicates, on the whole, that officers did not think they were to blame. Indeed, these courts martial show that the officer corps accepted the Fighting Instructions as a part of their doctrine, even if they did not use that exact language. As later chapters show, the trends that

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[140] George Rodney to Jane Rodney, July 30, 1756, in Syrett, *Rodney*, 1:219.
[141] Ferne, *Trial of Admiral Byng*, 40.
[142] John Byng to William Brough, March 22, 1757, in Ferne, *Trial of Admrial Byng*, 47.
[143] Willis, *Fighting*, 76; Rodger, *Command*, 244; Weighley, *Age of Battles*, 198-9; Robson, *Seven Years War*, 32-34; Hattendorf, *Naval Documents*, 358.

later inspired signal reformers had yet to fully penetrate the navy and begin the alteration of the officer corps' ethos that helped motivate signal reform. Even as these trends began to take hold, though, several factors rendered the Fighting Instructions more manageable, and likely forestalled reform.

III.

Critics of the Fighting Instructions often claim that officers had difficulty using the system, but ignore the context around them. The Fighting Instructions did not exist in a vacuum. Rather, they stood at the center of a web of tools and concepts that helped to ease the inherent problems associate with the Fighting Instructions.[144] These tools and concepts forestalled reform by rendering the Fighting Instructions more user-friendly and clouding the possible need for a more effective mode of communication. Some of the tools and concepts, such as the unwritten rules, worked against the reformers by creating an inconsistent understanding of doctrine, which signal reformers later sought to correct.

The Fighting Instructions are part of the formal doctrine of the Royal Navy. That is, doctrine that has been recorded and distributed to the fleet. Formal doctrine is complemented by informal doctrine – concepts and actions that are traditional within the service. For example, in 1744, the British admiral Thomas Mathews ordered his fleet to reduce speed and lie to during the night. Mathews' subordinate flag officer, Richard Lestock brought his ships to a stop, but did so ten miles from Mathews.[145] Admiral Rodney later argued that this was against "known practice," and Lestock should have endeavored to close the gap between himself and Mathews.[146] According to Rodney, Mathews did not need to signal Lestock to lie to closer because he should have known to draw closer, signal or no.

The British navy produced many examples of these "unwritten rules," as Willis calls them.[147] Perhaps the most important to British tactics was the idea of mutual support. This idea stipulated that

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[144] Willis, *Fighting*, 3.
[145] To lie to was to bring one's ships to a virtual stop by arranging some of the sails to catch the wind behind them and others to catch the wind in front, bringing the ship to near equilibrium.
[146] Quoted in Howard Douglas, *Naval Evolutions: A Memoir*, (London: 1832), Thttps://babel.hathitrust.org/cgi/pt?id=miua.0777958.0001.001&view=1up&seq=17, Appendix I, v.
[147] Willis, *Fighting*, 83.

captains were supposed to come to the assistance of a nearby ship that was in danger.[148] This meant that theoretically, no ship could be isolated from the others and overtaken. The same principle existed for flagships, too, though, since the admiral was aboard the flag ship it was more imperative for other vessels to come to his defense. That being said, while unwritten rules limited the number of signals necessary, the navy did not establish a way to ensure that every officer knew the same unwritten rules and would apply them correctly.[149]

The strength of the unwritten rules working in conjunction with the Fighting Instructions was that admirals could predict how their captains would respond to a given situation. If the flagship made more sail, the rest of the fleet should, too.[150] Unwritten rules like this made it unnecessary to have a signal for every action. The unwritten rules, then, hinged on the intimate understanding between a captain and the admiral. Both men needed to know what the other was going to do. As Admiral Howe later explained in 1794, an admiral had to know "how [his] captains [would] conduct themselves" in battle.[151] Admiral and captain needed a mutual understanding. Not all admirals could affect mutual understanding efficiently, though. Many were psychologically uncomfortable putting themselves in a position where their subordinates could understand their thinking. Others were outright hostile to their subordinates, especially when they did not do precisely what the admiral wanted them to do. This, no doubt, ostracized numerous officers who might have been able to work in harmony with their commander otherwise.[152]

Summing up the relationship between unwritten rules and formal doctrine, Willis writes "The formal orders, signals and instructions, cushioned by a network of informal notions of duty provided that common doctrine."[153] In other words, in the Royal Navy, there existed a minimum expectation of what each ship should be doing. In the very likely event that more direction was needed, an admiral could use

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[148] Willis, *Fighting*, 85-7; "…the Tryal of Captain John Ambrose," in *Copies of All the Minutes and Proceedings Taken at and Upon the Several Tryals…*, (London: 1746), 11.
[149] Vernon's Order to Captains, July 26, 1739, in Ranft, *Vernon*, 290-1.
[150] *"Minutes of the Proceedings at a Court-Martial, Assembled for the Trial of Vice-Admiral Sir Hugh Palliser, Bart,"* (London: 1779), Eighteenth Century Collections Online, 74.
[151] Quoted in Bouchier, *Codrington*, 1:18.
[152] Willis, *Fighting*, 105; Rodney to Sandwich, May 31, 1780, in G.R. Barnes and J. H. Owen, eds., *The Private Papers of John, Earl Sandwich*, Navy Records Society vols. 75, (London: Navy Records Society, 1936), 3:217.
[153] Willis, *Fighting*, 98.

signals to make his intentions known. Indeed, some historians have suggested that while the unwritten rules were crucial to ensuring the British tactics remained somewhat flexible, they also stymied the creation of a new system of tactics. While the unwritten rules remained such an important part of tactics, the Royal Navy could not become a more professional institution. To do this, the navy had to increase the proportion of formal doctrine they used, as Vernon had suggested in the 1740s. Until the navy affected this, either by formalizing more of the doctrine or creating a more expressive system of signals, the Royal Navy remained an institution with an unreliable patchwork safety net. Centralizing signal reformers came to realize this over the course of the mid-eighteenth century.

The unwritten rules were helpful in the moment, even if they may have slowed reform. They complimented the system of Fighting Instructions and helped officers and fleets to function in a more cohesive fashion. Another helpful aid to using the Fighting Instructions were signal books. Some might be tempted to refer to the Fighting Instructions themselves as a signal book. A true signal book, however, contains only the signals and their meaning. The Fighting Instructions included signals, their meaning, and instructions.[154]

The original set of Fighting Instructions, as issued by Admiral Russell in 1691, contained a helpful index at the back of the text to allow the reader to quickly find the article that they needed to reference. Inexplicably, when Rooke reissued the Fighting Instructions in 1703, he excluded the index. Why he did so remains a mystery, but officers adapted quickly. It was not unknown for officers to make their own signal books.[155] At the same time, perceptive printers throughout England began to publish their own signal books. Among the earliest signal books appears one from 1711.

The book helpfully indexes all of the signals by flag but also by subject. The first index, found at the front of the manuscript, has a series of headings, such as signals in fog or sailing by day or to call officers onboard. Once the reader found the subject he needed he looked underneath for the signal he

[154] Rooke's Instructions, in Corbett, *Fighting Instructions,* 197-202; General Fighting Instructions, in Julian S. Corbett, ed., *Signals and Instructions, 1776-1794,* Navy Records Society, vol. 35. London: Navy Records Society, 1908, 268-80.
[155] Tunstall, *Naval Warfare,* 9.

desired. Next to the title he found the number of the signal in the signal book and the number of the Fighting Instruction to which the signal belonged. For instance, to find the signal to unmoor, the reader looked under the "Signalls [sic] at an Anchor by Day section, then found "To Unmoor." He could then easily see that the signal was number two in this particular book and that it referred to the second article in the Sailing Instructions.[156] The reader could also search for signals based on the color of the flags involved in the signal. Each signal was represented by a picture of a ship with the associated flags flying in their respective positions, the meaning of the signal itself, and an icon of a cannon to indicate the number of guns fired during the signal. For example, the signal for a squadron to cut their anchor cables was a white flag flown from the main topmast, accompanied by one gun, and a half raised ensign.[157] Doubtless, officers found it much easier to flip through this signal book than to scour the Fighting Instructions for the correct article.

Several years later, printer Johnathan Greenwood published another signal book with the title: *The Sailing and Fighting Instructions or Signals, as They are Observed in the Royal Navy of Great Britain.*[158] Greenwood's goal, as he explains in the dedication is "For the more immediate finding any signall [sic] that shall be made."[159] To accommodate this goal, he also made sure his signal book was pocket sized "that it may be at hand on all occasions."[160] Another signal book was published along similar lines to Greenwoods between 1719 and 1720. Then, in 1748, a commercial printer in Scotland Yard by the name of Milan published a signal book as well. His followed much the same pattern as those that came before, but it is notable that the trend of publishing signal books continued well into the century after the Fighting Instructions had been firmly established in the navy.[161] The existence of these signal books suggests that there was some demand for a more sensible organization of the Fighting Instructions.

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[156] Signal Book, 1711, SIG/B/1, Signals Collection, National Maritime Museum, London.
[157] Signal Book, 1711, SIG/B/1, Signals Collection, National Maritime Museum, London.
[158] Tunstall, *Naval Warfare,* 73.
[159] Quoted in Tunstall, *Naval Warfare,* 74.
[160] Quoted in Tunstall, *Naval Warfare,* 74.

[161] Tunstall, *Naval Warfare,* 74; Tunstall, *Naval Warfare,* 83.

Whether they were making their own or buying a printed copy, it is clear that officers understood the Fighting Instructions alone were hard to work with and helpful tools like signal books made them easier to interact with than they might have been otherwise.

When the Admiralty promulgated the Fighting Instructions in the 1690s, they probably had little expectation that the system they endorsed at that moment would last nearly one hundred years. They built a system based on the time in which they created it, not in anticipation of systems a century or more in the future. Nevertheless, the Fighting Instructions had clear flaws, as Lestock appreciated in his pamphlet. What many historians failed to account for, is why the system remained in place for so long if it was so detrimental to the service. The accusation of a conservative officer corps standing unwaveringly against any reform is easily refuted by the officers who actively pursued reform, such as Vernon and Anson, and the officer corps' acceptance of the reforms of the 1740s – barring cases of personal honor. A closer look at the universe of materials and concepts available to officers of the eighteenth century shows that the Fighting Instructions did not operate independently. Naval authorities put things such as the Additional Instructions in place, to give the system increased flexibility. Officers, too, adapted by creating or purchasing signals books and utilizing their knowledge of informal doctrine during action. As time wore on, though, the officer corps itself as well as the social and political environment they operated in began to change. These changes spurred some officers to begin considering whether the system as it existed needed reform.

Chapter Three: The Factors Influencing Signal Reform

In 1799, well after the conclusion of the American War of Independence, the great Admiral Horatio Nelson penned a letter to his mistress, Lady Hamilton. Having just parted company with her and his circle of friends in Palermo, Nelson was quite upset. He wrote, "How dreary and uncomfortable [my ship] appears is only telling You what it is to go from the pleasantest Society, to a Solitary Cell, or from the dearest friends to no friends, and now I am now perfectly the great man[,]not a creature near me, from my heart I wish myself the little man again."[162] It is in this state, isolated at sea, that one most often imagines the officers of the Royal Navy. Yet, as Nelson's letter shows, officers felt the influence of the outside world quite deeply. Changes in British culture and society affected the navy, no different than any other institution. Even the Fighting Instructions, a seemingly isolated system of signals and tactics was impacted by these profound changes.

This chapter focuses on the reformers, themselves, and the factors that influenced their signal reforms. Briefly examining the lives of the reformers helps provide context for their lives, which offers an important position from which to begin to grapple with the forces that moved them to reform. The first among these forces is the reformers' lengthy naval experience. This experience on the whole helped reformers to shape their understanding of signals and naval communications in a way which the generation of officers before them simply lacked. Trends of centralization, born of social changes and anxieties, showed the reformers that a decentralized navy could not give them the decisive victories they desired. Lastly, ideas of Enlightenment rationalization began to pervade the officer corps. The reformers, influenced by these ideas and the writings of French philosophers crafted systems that reflected these trends. This chapter aims to show that signal reform came not simply from the individual genius of the reformers, nor solely from the previous tactical developments of Anson or Vernon.[163] Rather, they were the products of wider social, intellectual, institutional, and cultural shifts.

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[162] Horatio Nelson to Lady Hamilton, May 19, 1799, in Marianne Czisnik, ed., *Nelson's Letters to Lady Hamilton and Related Documents*, (London: Routledge, 2020), 76; Underlined text original.
[163] Holland, "Development of Signaling," 7; Corbett, *Signals and Instructions*, 2; Tunstall, *Naval Warfare.*

Richard Howe was born in 1726 to Emanuel Howe, second Viscount Howe, and Countess Charlotte von Keilmansegg. He studied at Westminster and Eaton, before going to sea in a merchantman, to gain the qualifying experience for a commission in the King's navy.[164] Howe's star rose quickly. He began his service as a lieutenant under Admiral George Anson and served with distinction during the Austrian War of Succession.[165] Using his family's connections to the Royal Family, Howe secured a number of rewarding commands. During the Seven Year's War, he commanded a line-of-battle ship and several independent squadrons.[166] After the war, Howe served on the Admiralty Board for some time, before accepting the position of Treasurer of the Navy. In 1776, Howe accepted command of the North American Station and arrived in New York as the American colonists declared independence. After returning to England from America in 1778, Howe spent three years defending his conduct during the American War of Independence. Finally, in 1782, the First Lord named Howe Commander-in-Chief of the Channel Fleet. One year later, Howe became First Lord of the Admiralty, resigning in 1788. Howe returned to command of the Channel Fleet at the beginning of the French Revolutionary Wars, to command British forces in the Battle of the Glorious First of June (1794). Shortly thereafter, he retired from the navy and died in 1799.[167]

Richard Kempenfelt, also known as Kempy to his friends, was born on November 23, 1715.[168] His father, Magnus, hailed from West Gothland in Sweden and entered the service of the English King James II in 1685. Richard's mother, Anne, was the daughter of a London merchant. Kempenfelt acquired a reputation as a "sailor-scholar."[169] The tall and lanky Kempenfelt hid this intellect behind a thick veil of shyness. Only his closest companions could see his great intellectual mind at work.[170] Kempenfelt

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[164] Ira D. Gruber, *The Howe Brothers and the American Revolution*. (New York: Atheneum, 1972), 46; Syrett, *Howe*, 1-2.
[165] Gruber, *Howe*, 49
[166] Rodger Knight, "Richard, Earl Howe, 1726-1799," in *Precursors of Nelson: British Admirals of the Eighteenth Century*, edited by Peter Le Fevre and Richard Harding, (London: Stackpole Books, 2000), 279-293.
[167] Knight, "Howe," 283-99.
[168] Rubinstein, *Spithead*, 26.
[169] Hilary S. Rubinstein, *Catastrophe at Spithead: The Sinking of the Royal George*, (Barnsley: Seaforth Publishing, 2020), 6.
[170] Rubinstein, *Catastrophe at Spithead*, 28.

endured an agonizingly slow career, spending no less than fifteen years as a lieutenant. Nevertheless, he had a relatively active career, even if promotion proved slow. He participated in Vernon's attack on Porto Bello, where he would have reviewed Vernon's additional instructions mentioned in the previous chapter. During the Seven Years' War, Captain Kempenfelt commanded HMS *Elizabeth* on the East Indies station. While there, Kempenfelt participated in three fleet battles between the British admiral George Pocock and the French admiral Anne Antoine, Comte d'Aché. After the war's conclusion, Kempenfelt spent much of his time traveling, often through France. After a long period ashore, the King proposed Kempenfelt serve as an aid to the Commander-in-Chief of the Channel Fleet in 1779. After commanding an independent squadron in 1781, the Admiralty placed Kempenfelt under Howe's command in the Channel Fleet, where Kempenfelt served as second-in-command.[171] He died in 1782, when his ship suffered an accident at Spithead, off Portsmouth.

George Brydges Rodney was born in the winter of 1717-1718 in London. His father, Henry, served in the British army and marines during the Spanish War of Succession, while his mother, Mary, was the daughter of a diplomat and Admiralty judge.[172] According to David Hannay, the Rodney family was "of more antiquity indeed than fame," and as he seems to imply of little wealth.[173] Rodney probably began his career in the Royal Navy on May 7, 1732. Rodney's early career was characterized by quick promotion. During the Austrian War of Succession and the Seven Years' War, Rodney distinguished himself, fighting in several actions and notably leading an attack on the French port of Le Havre. In a remarkable vote of confidence, Anson made Rodney the commander-in-chief of the Leeward Islands station, encompassing half of the Caribbean Sea in 1761; however, he was superseded a year later, and took up the post of Governor of Greenwich Hospital.[174] Despite this lucrative position, Rodney found

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[171] Rubinstein, *Catastrophe at Spithead,* 31-44; King George III to Lord North, March 9, [1779], in J.W. Fortescue, ed., *The Correspondence of King George the Third from 1760 to December 1783,* vol. 4, (London: Macmillan, 1928), https://catalog.hathitrust.org/Record/000108737, 4:49.
[172] Syrett, *Rodney,* 1:1-3; The marines were not yet a formal body. Until mid-century, authorities simply selected units from the army to serve aboard navy ships.
[173] David Hannay, *Rodney*, with Introduction and Preface by George A. Billias, (Boston: Gregg Press, 1972), 1.
[174] Syrett, *Rodney, 1:*266-9; Hanney, perhaps hyperbolically, describes Greenwich Hospital as "a hotbed of the dirtiest conceivable jobbery and thieving of the lowest type in the eighteenth century;" see Hanney, *Rodney,* 71-2.

himself dangerously in debt, fleeing to France to escape his debtors in 1774. Indeed, in these years between the Seven Years' War and the American War of Independence, Rodney gained a reputation as an "over-bearing, avaricious and disfunctional [sic]" man.[175] Contemporaries considered him a "copious talker, vehement in the expression of his likes and dislikes, not at all averse to talk about himself, nor even to boast."[176] Rodney conducted himself in a notably gentlemanly manner physically, but was slight and short, a fact belied by Thomas Gainsborough's portrait of Rodney from 1783.[177] In 1779, the ministry turned to Rodney to command naval forces in the West Indies. In 1782, he fought the Battle of the Saintes, a widely celebrated victory. Rodney spent his remaining days solving his continued perplexing financial problems, before dying in 1792.[178]

I

Howe, Rodney, and Kempenfelt all saw their first military action during the War of Austrian Succession (1740-1748). Of the three, only Rodney engaged in a pitched fleet battle at the Second Battle of Cape Finisterre (October 14, 1747).[179] Howe, for his part, saw no fleet battles, but was wounded off the coast of Scotland fighting French privateers.[180] The Seven Years' War represented for Kempenfelt and Howe at least, their first true experiences with fleet battles or otherwise the administration of a squadron or fleet - both of which required a knowledge of the Fighting Instructions and signaling. This chapter does not serve as a comprehensive record of these men's service, but rather shows how their previous military experience helped to prepare them for the later signal reforms they undertook.

During the Seven Years' War, both Howe and Rodney occupied leadership positions that exposed them to the Fighting Instructions and signaling in a way that went beyond the normal officer's experience.

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[175] Syrett, *Rodney,* 2:3.
[176] Quoted in Hanney, *Rodney,* 89.
[177] Hanney, *Rodney,* 92; Thomas Gainsborough, *Admiral Rodney at the Battle of the Saintes,* 1783, oil on canvas, 27.9 × 15.7" (71 × 40 cm).
[178] Kenneth Breen, "George Bridges, Lord Rodney, 1718?-1792," in *Precursors of Nelson: British Admirals of the Eighteenth Century,* edited by Peter Le Fevre and Richard Harding, (London: Stackpole Books, 2000), 235-246.
[179] George Rodney's Statement at Captain Fox's Court Martial, November 26, 1747, in Mackay, *Hawke,* 71-2.
[180] Syrett, *Howe,* 4.

Interestingly, much of their military experiences revolved around the Seven Years' Wars' many amphibious operations. In May, 1758, William Pitt, Secretary of State, wrote the Admiralty to "signify to Your Lordships his Majesty's Pleasure" that Howe be assigned a squadron for a "secret expedition."[181] Pitt's goal was to divert French troops away from the war in Germany by using the mobility of the navy to strike at France's valuable coastal targets.[182] Over the ensuing year, Howe launched several raids along the French coast. He understood the weight of the responsibility on his shoulders. Now Commodore Howe wrote in his opaque manner to his friend Captain Robert Duff to say "It is upon an occasion, my dear Duff, that no two officers so young in Rank as ourselves had ever before left to their management."[183] One can catch a glimpse of the work laid out before Howe by examining the signals he prepared for his expedition.

Like all commanders, Howe had to set up how his squadron would function. He did so on May 25, 1758, distributing at least three documents to his squadron, which eventually numbered one hundred and nine ships.[184] One document established a series of signals that allowed Howe to communicate his intentions relevant to the landing of troops. Another delineated how Howe would call officers of the transport ships and army officers aboard his flagship, HMS *Essex.* Five days later Howe distributed another document in which he outlined how he wanted his ships to arrange in a line ahead. Using this document, the squadron's officers would know where they should be positioned in the line when Howe gave the signal.[185] These documents indicate the fact that Howe was not necessarily a natural reformer. His organization and signals mirror what most other officers would have written.[186] Crucially, these formative months in command provided Howe with experience he would not have had otherwise. Howe

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[181] William Pitt to the Admiralty, May 8, 1758, in A. W. H. Pearsall, ed., "Naval Aspects of the Landings on the French Coast, 1758," in *Naval Miscellany*, vol. 5, edited by N. A. M. Rodger, Navy Records Society vol.125, (London: Navy Records Society, 1983), 216.
[182] Richard Middleton, "British Naval Strategy, 1755-1762," *Mariner's Mirror* 75, no. 4 (November 1989): 355-60.
[183] Richard Howe to Robert Duff, May 27, 1758, in Pearsall, "Naval Aspects," 224.
[184] Log of HMS *Essex*, June 5, 1758, in Pearsall, "Naval Aspects," 225.
[185] Regulations Respecting the Order of Sailing, May 25, 1758, in Pearsall, "Naval Aspects," 219-20; General Order to Squadron, May 25, 1758, in Pearsall, "Naval Aspects," 220-1; Distinguishing Signals, May 25, 1758, in Pearsall, "Naval Aspects," 222-3; Line of Battle, May 30, 1758, in Pearsall, "Naval Aspects," 224-5.
[186] For more examples see Barrington and Havana.

continued to think critically about the orders and signals he created, and five days after disseminating his first set, he gave out some additional signals for different units and situations he thought the squadron might need.[187] Again in early June, he distributed another set, this time acknowledging mistakes made in previous versions.[188] These early experiences during the Seven Years' War with command and seaborne communications were a great boon to Howe. Plenty of officers found themselves thrust into far more important positions of command without such experience. At the same time, these documents give the historian a small window into how Howe approached signals at different stages in his career.

Further documentary evidence shows that Howe started to think about signaling in a more active way. After his raid on Saint Malo (June, 1758), Howe cast his eye on the French port of Cherbourg. In preparation, Howe took a new stance on signals. Under the pithy title "Additional Signals & Instructions to Be Observed by Ships of War," this new book revised the manner that his additional signals were viewed by the reader. Rather than the usual paragraph form that the Fighting Instructions used, this new book arranged the signals into table form with three columns for type of flag, place the flag should be flown, and the meaning of the signal. Corbett refers to this book as "remarkable," and Syrett speaks of the book with a certain reverence, however, one must remember that officers like Howe would have been exposed to plenty of signal books printed in this manner, such as those referenced in the previous chapter.[189] Perhaps more important here, this book shows that Howe was beginning to think critically about the Fighting Instructions and seems to have used his previous experiences with signal books and the raid on Saint Malo to merge innovative ways of communicating.

One year after Howe conducted his raids on the French coast, the Admiralty ordered Rodney to attack the coastal town of Le Havre, where the French had formed an invasion flotilla. Rodney now had to face the questions that came with command of a squadron. On June 25, 1759, he provided his captains with his outline for a line of battle. It is also likely that he drew up his own additional signals, or at least

[187] Signals Given in Addition, May 30, 1758, in Pearsall, "Naval Aspects," 225.
[188] Additional Signals, June 17, 1758, in Pearsall, "Naval Aspects," 230.
[189] Corbett, *Signals,* 351; Syrett, *Howe,* 115.

adopted others. He also would have had to put together signals for his bomb ships, which were not readily available in the Fighting Instructions.[190] One order to his flag captain shows that Rodney did indeed concern himself with signals, even if no instructions are available to historians. On June 30, while the squadron remained immobile due to bad weather, Rodney wrote his flag captain, Samuel Barrington, to ask that he repurpose some of his old pennants, though he does not say exactly what for.[191] This indicates, at least, that Rodney had to contend with issues of signaling like devising and managing a squadron's signals and instructions - something that not every captain or admiral had to do in their career. Even better for Rodney, his raid on Le Havre went off well and "the King and all his servants" were "extremely pleased."[192] These expeditions by both Howe and Rodney represent valuable experiences in matters related to the Fighting Instructions and signals that a minority of the officer corps actually had to deal with.

The experience of a true fleet battle aided officers in learning how the Fighting Instructions operated in practice. Fleet battles were relatively rare in the eighteenth century. Each one proved a constructive experience in many ways, but especially in the use and understanding of the Fighting Instructions. Rodney's only fleet battle before the American War occurred during the War of Austrian Succession at the Second Battle of Cape Finisterre. During the course of the action, when Rodney found himself between two French ships, his men were forced to fight on both sides of the ship. At one point his wheel was shot away and the ship could not be controlled. While his ship, HMS *Eagle*, survived it received heavy damage. As Rodney and his first lieutenant later noted, much of this destruction could have been avoided if Captain Fox of HMS *Kent* had come to Rodney's aid. Fox's failure to come to Rodney's aid represented a certain breach of the unwritten rules.[193] Even worse, Fox had entirely ignored

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[190] Lords of the Admiralty to George Rodney, June 26, 1759, in Syrett, *Rodney*, 1:287; Rodney Memo to Captains, June 25, 1759, in D. Bonner-Smith, ed., *The Barrington Papers, vol. 1*, Navy Records Society vols. 77, (London: Navy Records Society, 1937), 1:249.
[191] George Rodney to John Clevland, July 1, 1759, in Syrett, *Rodney*, 1:290-1; George Rodney to Samuel Barrington, June 30, 1759, in Bonner-Smith, *Barrington*, 1:251.
[192] George Anson to George Rodney, July 6, 1759, in Syrett, *Rodney*, 1:292.
[193] Statement of George Rodney at Court Martial of Captain Fox, November 26, 1747, in Mackay, *Hawke*, 71-2; Statement of John Harrison at Court Martial of Captain Fox, November 27, 1747, in Mackay, *Hawke*, 73.

the commanding admiral's repeated signals to go to the aid of Rodney.[194] One cannot say for sure whether this experience impacted Rodney's thinking in terms of signals, but he did later adopt a system based on the strict obedience of his subordinates. If nothing else, Cape Finisterre stands as Rodney's lone fleet battle experience until the American War, and one might imagine it did color his thinking when he came to command the Leeward Island station in 1779.

Until 1759, Howe had yet to serve in a major fleet action. In November of that year, the Admiralty reassigned Howe to serve under Edward Hawke, then blockading the French naval port of Brest. In mid-November, Hawke received word that the French escaped Brest and astutely guessed they would rendezvous nearby at Quiberon Bay. On the 20th of November, Hawke's frigates signaled they had found the French fleet and Hawke sent Howe to investigate further. A little over an hour later, Howe signaled Hawke that the French fleet was indeed making for the bay.[195] Normally, the admiral would order his fleet to form a line ahead, and then approach the enemy to begin battle. Hawke knew forming a line ahead would take too long and the French might slip away in the process. Instead, he signaled several of his ships - including Howe - to pull ahead and immediately engage the French, while the rest of the fleet caught up and formed a line ahead.[196] Amidst heavy winds and squalls and under the steadily darkening sky, the British fleet pursued the French into Quiberon Bay. By nightfall, they captured or sank four French ships. Daylight revealed a further three French ships had ran aground navigating the coastline in the darkness.[197] Quiberon Bay was a decisive British victory, in which one side actually stopped the other's capability to bring sea power to bear - something rather rare in the eighteenth century.

Word of the victory reached Britain in late November. The *Derby Mercury* gleefully reported the "Destruction of the best Part" of the French fleet.[198] In celebration of Quiberon Bay - as well as a series of other victories - the British public held a national day of thanksgiving. Salutes were fired from the Tower

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[194] Edward Hawke to John Clevland, October, 17, 1747, in Mackay, *Hawke*, 54.
[195] Edward Hawke to John Clevland, November 24, 1759, in Mackay, *Hawke*, 345.
[196] NMM CLE/2/19; Edward Hawke to John Clevland, November 24, 1759, in Mackay, *Hawke*, 345.
[197] Edward Hawke to John Clevland, November 24, 1759, in Mackay, *Hawke*, 345-6; much of the rest of the French fleet took refuge at the mouths of the Vilaine and Loire Rivers where they were blockaded for the rest of the war.
[198] "Wednesday's Post," *Derby Mercury*, December 7, 1759. British Newspaper Archive

of London and St. James Park, while many people illuminated their houses in celebration.[199] Rodger puts it plainly when he writes "No British admiral ever ran such navigational risks or gained so dramatic a victory."[200] Unfortunately, Howe's own feelings on the victory do not survive – nor does any indication of how the experience of Quiberon Bay changed his outlook on naval communications, or if it did at all.

Howe neglected to put much of his thoughts on paper and kept his motives to himself; however, one conversation thirty-five years later is suggestive. In 1794, then Lieutenant Edward Codrington, had the honor of dining with his lordship. One of the attendees asked the table whether they would rather fight an action at night or during the day. According to Codrington, Howe began by reminding the company that nighttime fighting posed great challenges. He went on to say that these challenges could be overcome more quickly by a well-trained fleet and that "he considered that a good English fleet in high order and discipline would, under those circumstances of difficulty, have great advantage over a French fleet of equal strength."[201] Of course, Howe had already seen the effects of a well-trained British fleet loosed on the enemy in the darkness at Quiberon Bay. Before concluding, though, Howe stressed another important factor: before any hypothetical nighttime engagement he had to know "how my own captains conduct themselves."[202] By this, he meant that he needed to know that his captains knew how to work together as a fleet in situations like Quiberon Bay, where Hawke had placed his faith in his captain's discretion and his fleet's training in nighttime combat.[203] Howe's later systems allowed a certain amount of freedom for captains, but only when the admiral allowed it. This cautious freedom seems in line with Hawke's fleet management at Quiberon Bay as well.[204]

Judged solely on their exposure to conflict, Howe and Kempenfelt had similar starts in the service. Barring his service under Vernon, Kempenfelt's experience during the Austrian War of

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[199] "Saturday Post," *Oxford Journal*, December 1, 1759. British Newspaper Archive.
[200] Rodger, *Command,* 283.
[201] Quoted in Bourchier, *Codrington,* 1:38
[202] Quoted in Bourchier, Codrington, 1:38
[203] Robson, *Seven Years' War,* 134-5.
[204] Additional Instructions Respecting the Conduct of the Fleet, July 1, 1777, in Corbett, *Signals and Instructions,* 113-4.

Succession remained rather quiet. It looked as though the next war would bring much of the same for Kempenfelt; however, he had the fortune to be posted to the East Indies station. Under Vice Admiral George Pocock, Kempenfelt took part in three separate fleet actions: Cuddalore (1758), Negapatam, (1758), and Pondicherry (1759). According to Kempenfelt's biographer, Hilary Rubinstein, "Three (indecisive) battles in the Bay of Bengal between Pocock's squadron and its French counterpart encouraged Kempenfelt's interest in fleet maneuvering and in tactics and signals, culminating eventually in his acknowledged expertise."[205] Certainly, the battles would have been instructive for Kempenfelt. In one year he saw more fleet actions than Howe and Rodney saw in twenty years, even though the fleets involved were quite small. Rubinstein suggests that Kempenfelt blamed Pocock for not acting more decisively.[206] Kempenfelt's later writings reflect a call for effective and decisive fleet maneuvers as well.[207] Kempenfelt's military experience stands out as brief but impactful and impacted his later tactical thoughts.

Needless to say, many officers before and after these reformers held stations of greater prominence and participated in battles far larger and bloodier than Quiberon Bay or Finisterre. The generation of Rodney, Howe, and Kempenfelt, though, was the first to see prolonged warfare on a large scale. Anson and Vernon, surely, had participated in multiple wars, but they were punctuated by long periods of peace when the skills sea officers learned faded.[208] Certainly, this was not the sole factor that caused reformers to begin innovating, but it did greater exposure to the Fighting Instructions and signals than the previous generations.

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[205] Rubinstein, *Spithead*, 35.
[206] Rubinstein, *Spithead*, 38.
[207] Richard Kempenfelt to Charles Middleton, April 28, 1779, in Laughton, *Barham*, 1:290; Richard Kempenfelt to Charles Middleton, August 14, 1779, in Laughton, *Barham*, 1:195.
[208] Willis, *Fighting*, 62.

II.

One of the uniting themes of the signal reformers was their call for a more centralized command structure. The unwritten rules left officers with only a vague and inconsistent understanding of what their superiors expected of them. The reformers believed that by expanding the signaling system, and by essentially codifying the unwritten rules in their new systems, they might bring about a more unified command structure. With their new systems, they expected that officers would not have to resort to their own understanding of the unwritten rules so much, and react to a given situation in a predictable fashion.[209] This trend of centralization, however, had its roots in two factors related to the wider social and political context of Great Britain. Citing what they believed to be the decay of society, some Whig politicians, such as the Duke of Bedford, began to impose their desire for a more structured and orderly society on the government of Britain. Much of this drive towards a strengthened hierarchy made its way into the service, and was absorbed by some of the reformers. At the same time, shifting notions of honor and duty slowly gave way to the idea that a sea officer's job was to obey their superiors. Inspired by rising trends of centralization, high-ranking officers sought to use it as a way to bring the navy into higher efficiency.

Once a month, the captain ordered his sailors aft. At the order, everyone removed their hats and the captain opened the Articles of War and read each of the thirty-nine articles aloud to the crew.[210] In that moment, the authority of the King and his Admiralty must have felt very close; even closer when the crew stood by to witness the punishment of one of their own. The captain of a ship had wide, but not total, discretion over punishment.[211] Indeed, often the reality of authority in the Royal Navy and the extent to which that authority truly emanated from London, proved much more tenuous than most assume. Rodger explains, "By modern standards the authority of a sea officer was weak, and ships function at sea

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[209] Willis, *Fighting,* 106-12.
[210] *Regulations and Instructions Relating to His Majesty's Service at Sea,* 47; Articles of War, in John D. Byrn, ed., *Naval Courts Martial,* 1793-1815. Navy Records Society vol. 155, (Farnham, UK: Ashgate Publishing, 2009), 4-12.
[211] Byrn, *Crime and Punishment,* 26; Brian Lavery, *Nelson's Navy: The Ships, Men and Organisations, 1793-1815,* (London: Naval Institute Press, 1989), 216-7.

on an implicit basis of co-operation and consent which sprang from the experience of seamen bred from boyhood to the necessity of teamwork for survival."[212] In the case of flag officers specifically, relationships between themselves, the admiralty, and their subordinates dictated the extent of their authority. Officers relied on their flag officers to receive promotions and rewards, who in turn could only ensure promotions and rewards for their subordinates if they maintained a good relationship with the Admiralty in London.[213]

This system reflected the times in which it began. Early eighteenth century politically-minded Englishmen believed that society was static and the hierarchy that governed everyday life would remain undisturbed, despite the seemingly anarchic nature of society.[214] In the 1730s and 1740s, though, some became concerned with the structure of society. Depending on one's perspective they saw the government and societal elites engaged in rampant corruption or lower classes guzzling gin and gambling away their livelihoods nightly.[215] Around mid-century, two opposing viewpoints arose that offered a solution to this supposed decay. Patriot Whigs believed the decay in society came from above and the best way to fix the issue of decay was to open up government and allow more popular participation. As touched upon in chapter two, Authoritarian Whigs believed that decay came from the lower class' lack of morality, and that the best way to bring society back into balance was to enact policies which enforced the natural hierarchy of society. If society was disordered, the best way to bring it back into order was to mandate order through the means of the state.[216] Beginning in the 1740s, Authoritarian Whigs found their way into the Admiralty and began to transform the navy in a way that eventually had profound implications for signal reformers.

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[212] Rodger, *Wooden Walls,* 320.
[213] Rodger, *Wooden Walls,* 303-4.
[214] Rodger, *Wooden Walls,* 206.
[215] Sarah Kinkel, *Disciplining the Empire: Politics, Governance, and the Rise of the British Navy,* (Cambridge: Harvard University Press, 2018), 93; Paul Langford, "The Eighteenth Century," in *The Oxford History of Britain,* edited by Kenneth O. Morgan, (Oxford: Oxford University Press, 2010), 415-6; Donna T. Andrew, *Aristocratic Vice: The Attack on Dueling, Suicide, Adultery, and Gambling in Eighteenth-Century England,* (New Haven: Yale University Press, 2013), 26.
[216] Kinkel, *Empire,* 93-5.

The first Authoritarian Whigs to find their way into the Admiralty were John Russell, fourth Duke of Bedford, John Montagu, fourth Earl Sandwich, and George Anson. After Robert Walpole's fall from power, Henry Pelham and his older brother, the Duke of Newcastle formed a government. Eventually, Pelham brought Bedford and his followers into his government and appointed Bedford First Lord of the Admiralty. Bedford, Sandwich, and Anson entered the Admiralty in 1744, the same year the infamous Battle of Toulon took place. Britains manifold naval defeats at the beginning of the war made rebuilding the British people's faith in their navy an imposing task.[217]

Some of the reforms that Bedford, Sandwich, and Anson implemented are covered in chapter two; however, it is worth repeating that these reforms took place over a period of several years, and centered on creating a more uniformed and disciplined navy. During Walpole's tenure, his supporters' desired to maintain a navy for deterrence rather than actual fighting.[218] During a Parliamentary debate before he became First Lord, Bedford asked the House of Lords why the nation had to pay for "a fleet which only floats upon the ocean."[219] Given the rash of courts martial for cowardice, the Battle of Toulon, and apparent social disorder and decay, it seemed that the navy required stronger ties to bind it together and to reinforce the hierarchy of naval authority.[220] Kinkel aptly sums up the Authoritarian Whig's reforms writing, "They formalized, codified, and rationalized naval organization; monopolized authority over naval affairs; and instilled a sense of duty, of belonging to an actual corps separated from civilians, which they strongly reinforced through a system of regimented discipline."[221] Of course, the reforms did not revise the Fighting Instructions. Yet, they did set the stage for a change within the ethos of the officer corps that the reformers partook in, and later harnessed to make meaningful reforms of the Fighting Instructions.

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[217] N.A.M. Rodger, *The Insatiable Earl: A Life of John Montagu, Fourth Earl of Sandwich, 1718-1792,* (New York: W. W. Norton, 1993), 18-20.
[218] Kinkel, *Empire,* 13 and 98.
[219] Debate on War with Spain, in William Cobbett, *Parliamentary History of England, from the earliest Period to the Year 1803,* vol. 12, (London, 1812), 12:1088.
[220] Rodger, *Command,* 323-4; Kinkel, *Empire,* 93-98.
[221] Kinkel, *Empire,* 102.

Men like Howe and Rodney participated in the debate around reforms and even took up the mantle of reform in their own way. In February, 1749, during service-wide debate surrounding the Admiralty's reforms, Rodney and several dozen other captains sent a note of thanks to the Admiralty in gratitude for the Admiralty having shared the details of the new Articles of War. The petition declared that the signers were now "convinced that what is intended as a reasonable expedient and a necessary part of discipline is not made to serve the purposes of cruelty and oppression."[222] Rodney and his fellow signatories followed the news of the reforms put forward by Bedford, Sandwich, and Anson, and engaged in debates over their purpose and usefulness.[223]

Rodney had good reason to favor these reforms. As mentioned earlier, during the Second Battle of Cape Finisterre, Rodney and his fellow captain, Thomas Fox, had the duty of engaging the very rear of the French fleet. After the battle devolved into a pell-mell chase, Rodney came up against the French *Neptune*. After some time, another French ship approached Rodney's other side; now stuck between two enemy fires, Rodney cast around for some ship to come to his aid. Out of his stern windows, Rodney espied Fox in HMS *Kent* and continued to watch as he sailed away.[224] Rodney's second-in-command later reported "I then imagined the *Kent* would have taken our place, as she lay in a position capable of so doing."[225] Not only did Fox fail to come to Rodney's aid; he ignored repeated signals from his commanding admiral to help Rodney.[226] In the end, the court found Fox guilty, and he ordered he be removed from command, however, to Rodney, who thought Fox's actions disgraceful, even this might have seemed too little. With sixteen dead seamen and a further fifty-two wounded, Rodney surely understood the repercussions of a navy for which captains did not fight.[227]

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[222] Petition to the Lords of the Admiralty, February 23, 1749, in Hattendorf, *Naval Documents*, 86-7.
[223] Amongst the other signatories were Augustus Keppel, George Duff, Lord Colville, Charles Middleton (later Lord Barham), Edward Vernon, and Molyneux Shuldham.
[224] Testimony of George Rodney in the Court Martial of Thomas Fox, November 26, 1747, in Mackay, *Hawke*, 71-3; Edward Hawke to John Corbett, October 17, 1747, in Mackay, *Hawke*, 51-5.
[225] Testimony of John Harrison in the Court Martial of Thomas Fox, November 27, 1747, in Mackay, *Hawke*, 51.
[226] Edward Hawke to John Corbett, October 17, 1747, in Mackay, *Hawke*, 51-5.
[227] Testimony of George Rodney in the Court Martial of Thomas Fox, November 26, 1747, in Mackay, *Hawke*, 72; Edward Hawke to John Corbett, November 4, 1747, in Mackay, *Hawke*, 61; Council of War Held on board HMS *Devonshire*, October 15, 1747, in Mackay, *Hawke*, 56.

Howe's thoughts on the naval reforms of the 1740s prove hard to divine. When Rodney and others signed their name to the above-mentioned petition, Howe was serving as flag captain to Sir Charles Knowles in the Leeward Islands.[228] Howe's later actions, however, indicate he believed in bringing greater uniformity to the fleet. While in command of HMS *Magnanime* during the Seven Years' War, Howe issued instructions on the regulation of the ship. They aimed to standardize the day-to-day workings of the *Magnanime*. They covered everything from the numbering of the seamen's hammocks to where the keys to the warrant officers' storeroom are kept. Most importantly, Howe ordered each of the midshipmen to take a portion, or division, of the crew under their care. He required that the midshipmen ensure the clothes and health of their divisions remained in order, and if they found anything amiss they should take the proper action to remedy the situation.[229] Howe's instructions strongly followed in the spirit of the authoritarian Whig's reforms and shows his inclination to bring the navy into a more orderly state.

During the signal reforms of the American War of Independence, the signal reformers used the language and ideas behind centralization to inspire and sustain their reforms. Rodney, for instance, issued a specific order directing his captains to follow his ship and maintain their stations at all times "according to the Ancient practice of the Navy."[230] In issuing this order, Rodney put on paper this "Ancient practice," and guaranteed that his officers understood his interpretation of the unwritten rule that required captains to follow their commanders. Rodney took an unwritten rule and wrote it down – a simple move, but one that centralized the fleet's understanding of the concept of following the admiral, and precluded Rodney having to make signals for that purpose. In 1782, the same year Rodney signed the above memo, Howe promulgated his own set of instructions. Article nine of the instructions lays out what a ship should do when Howe ordered them to leave the line ahead. The article is another prime example of the centralizing

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[228] Syrett, *Howe,* 6.
[229] Instructions on Board HMS *Magnanime*, 1759, in Brian Lavery, ed., *Shipboard Life and Orgaisation, 1731-1815,* Navy Records Society vol. 138, (Aldershot, UK: Ashgate, 1998), 82-87.
[230] Memorandum, January 27, 1872, in Alexander J. Wall, R. Horace Gallatin, and Frank Wiener, eds., *Letter-Books and Order-Book of George, Lord Rodney, Admiral of the White Squadron, 1780-1782,* vol. 2, (New York: New York Historical Society, 1932), 2:552.

trend in the signal reformer's work. Howe carefully laid out what a ship should do when they received the signal to leave the line ahead. Without this order, the exact actions a captain would take when he received Howe's signal to leave the line ahead would be relatively unpredictable to Howe. The captain might sail away from the battle or he might stay close by to wait for further orders. By laying the exact sequence of events out in print, Howe created a predictable outcome for his signal and centralized the system to conform to his orders. The impact of the reforms of the Authoritarian Whigs will be further examined in chapter three.

The changes that came to the Royal Navy in the 1740s were the result of external social pressure. Concern about the navy's poor performance and moral decay within society and the service, helped to bring about these changes which concentrated more authority in the hands of naval leaders. The signal reformers of 1775 argued for stronger centralization as a result of these concerns and acted upon it when they could. Yet, concerns about decay and performance were not the only centralizing influences within the service. The slow but steady shift from the concept of honor to one of duty played a crucial role as well.

Throughout the eighteenth century, upper and middle class Britons adhered to the code of honor. This code created a framework that encouraged its adherents to place the maintenance of their own honor before laws, the orders of their superiors, and the Royal Navy itself. Such a code contributed to the decentralized atmosphere of the Royal Navy in the early part of the eighteenth century and thus precluded meaningful signal reform. Gradually around beginning of the late Georgian period (c. 1750), some sections of British society, particularly the middle class, came to question the code of honor. Middle class Englishmen began to promote the concept of duty, which supported officer's subordination to the orders of superiors and the state. The concept of duty, therefore, contributed to the trend of centralization and fueled signal reform.

Before considering upon the concept of honor, one must understand how it applies to the officers of His Majesty's Navy. Officers of both the army and navy considered themselves gentlemen - harkening

back to the days when all military commanders were knights (gentlemen) or noblemen.[231] While in previous centuries, a gentleman would have been defined by his birth, by the eighteenth century a gentleman came to be defined by his "manners, urbanity, and presentation rather than birthright and inheritance," and often his wealth.[232] The primary mode for assessing one's "manners, urbanity, and presentation," was bound up in the eighteenth century concept of honor.

Historians who study the concept of honor generally acknowledge the challenge that comes along with its study because honor is a vague concept. People could have honor, institutions could have honor, and it could be gained or lost through a myriad of actions. No one bothered to write down exactly what constituted the code of honor in the eighteenth century, yet it was a "powerful organizing structure."[233] Courtney Thomas defines honor as "a broadly constituted mode of conduct that bound social groups together; it likewise served as a frame of reference in reaching decisions about self presentation and in reacting and responding to the behaviour of others."[234] According to Donna Andrew, a historian of eighteenth century English society, the code of honor brought with it two traits or qualities which its adherents sought to emulate: courage and pride. Thus, nominally, an honor bound gentleman would be completely indifferent to the loss of his own life if it was lost in the maintenance of his honor.[235] At the same time, men of honor took pride in their position in society and held themselves above those who they deemed to have less honor.[236] So, for example, shortly after the Second Battle of Cape Finisterre and before his court martial, eight officers objected to Thomas Fox's presence at a council of war. The officers believed Fox might have acted dishonorably and to serve under him during the meeting (Fox was

[231] Rodger, "Honour and Duty," 426-7.
[232] Kinkel, *Empire,* 36; Mingay, *English Landed Society,* 6.
[233] Andrew, *Aristocratic Vice,* 17.
[234] Courtney Thomas, *If I Lose Mine Honour, I Lose Myself: Honour Among the Early Modern English Elite,* (Toronto: University of Toronto Press, 2017), 4.
[235] At his trial, John Byng proclaimed that he was more concerned about being cleared of charges relating to his honor than charges which – if he was found guilty – would result in his execution. As it happens, this is precisely what happened. See Byng's Defense, January 13, 1757. In Ferne, *Trial of Admiral Byng,* 4.
[236] Andrew, *Aristocratic Vice,* 17-25.

the most senior captain present) would have resulted in their own loss of honor.[237] Pride and courage, then, comprised the two core pillars of this system of honor which officers adhered to.

Honor's impact on the navy manifested in various ways, some positive, others negative, and some ambiguous. On one hand, honor often drove officers to fight with remarkable zeal. Naval historians frequently refer to the case of Captain Arthur Gardiner. Gardiner, who served as Byng's Flag Captain at Minorca, understood that in the eyes of many, he had been dishonored by Byng's poor conduct in the battle. Two years later at the Battle of Cartagena (February 28, 1758), Gardiner pursued the much larger French flagship into the night in an attempt to regain his honor. The French flagship surrendered, but by that time Gardiner had died in action.[238] In this respect, honor could compel officers to take aggressive action to subdue the enemy – an aggression that was deeply needed after the poor performance of the navy during the War of Austrian Succession and the early years of the Seven Years' War.[239]

At the same time, honor could have a debilitating effect on the order and effectiveness of the navy and, more importantly, the navy's system of communication and tactics. The problem was exacerbated by sea officers' unique position within the social hierarchy of Great Britain. As officers, society expected sea officers to be gentlemen. Yet, one of the factors that comprised a gentleman was the fact that a gentleman did not have a trade nor a profession.[240] At the same time, sea officers were professionals; they received training in navigation, gunnery, and seamanship, for instance.[241] Sea officers also had a poor reputation

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[237] Council of War Held on board HMS *Devonshire*, October 15, 1747, in Mackay, *Hawke,* 56; Fox was duly removed from the meeting.
[238] Robson, *Seven Years' War,* 42-3; Rodger, *Command,* 274.
[239] Hannay, *Rodney,* 20; Hattendorf, *Naval Documents,* 315-6
[240] John Chamberlayne, *Magna Britanniae Notitia: or, the Present State of Great-Britain…,* (London: 1716), Google Books, 188; G. E. Mingay, *English Landed Society in the Eighteenth Century,* (London: Routledge and Kegan Paul, 1963), 6.
[241] For more on the challenges of seamanship, gunnery, and navigation see, John Harland, *Seamanship in the Age of Sail: An Account of the Shiphandling of the Sailing Man-o-War, 1600-1860,* (Annapolis: Naval Institute Press, 2015); Peter Padfield, *Guns at Sea.* (London: Hugh Evelyn, 1973); Mordechai Levy-Eichel, "'Suitable to the Meanest Capacity': Mathematics, Navigation and Self -Education in the Early Modern British Atlantic," *Mariner's Mirror* 103, no. 3 (November, 2017): 450-465; Margaret E. Schotte, *Sailing School: Navigating Science and Skill, 1550-1800,* (Baltimore: Johns Hopkins University Press, 2019).
The training of sea officers was incredibly decentralized. Individual captains trained would-be officers in whichever way they saw fit.

for behavior, whereas British society expected gentlemen to behave properly.[242] Conscious of their tenuous claims to gentility, sea officers were especially sensitive to assertions that they were not gentlemen - in other words, they were especially receptive to losing honor: the ultimate mark of a gentleman.

Since the code of honor required its adherents to refuse orders, reject assignments, and ignore laws which adherents believed contravened their code, the Admiralty found a perennial problem where officers simply disobeyed them to maintain their honor.[243] In the years leading up to the American War, the Admiralty faced crowds of officers refusing commands offered to them. In 1740, the Admiralty reported to Vernon, "some captains and other officers of his Majesty's ships appointed to proceed under your command to Jamaica have discovered a great backwardness to go on that service and have applied to us under several pretences [sic] to be excused from it, which conduct of theirs we do very much disapprove."[244] During the American war, the Admiralty offered Barrington the position of second-in-command under Howe in North America. Barrington flatly refused, suggesting the role was beneath him.[245] An exasperated First Lord admitted that "Sea officers are apt to be discontented if everything is not done according to their wish; they are exceedingly jealous of one another, and ready to find fault with everybody's conduct but their own."[246] A system in which an officer could simply decide that his superior had impugned his honor and he need not listen was necessarily an inefficient system. Nevertheless, this system that placed honor above duty pervaded British society and thus the navy for decades, however that began to change around the middle of the century.

For some sections of the middling class of British society, the code of honor represented everything wrong with Early Georgian England. Noblemen and gentlemen held themselves above others,

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[242] Edward Russell to Lord Nottingham, July 4, 1692, in Francis Bickley, *Report on the Manuscripts of the Late Allan George Finch Esq., of Burley-on-the-Hill Rutland,* vol. 4, (London: Her Majesty's Stationery Office, 1965), 288-91; Rodger, *Command,* 202; S.A. Cavell, "Social Politics and the Midshipmen's Mutiny, Portsmouth 1791," *Mariner's Mirror* 98, no. 1 (February 2012): 37.
[243] Andrew, *Aristocratic Vice,* 21-25; Rodger, *Wooden Walls,* 205-11.
[244] Admiralty to Chaloner Ogle and Edward Vernon, October 10, 1740, in Baugh, *Naval Administration,* 71-2.
[245] Lord Sandwich to Samuel Barrington, November 19, 1777, in Bonner-Smith, *Barrington,* 1:450; Samuel Barrington to Lord Sandwich, November 23, 1777, in Bonner-Smith, *Barrington,* 1:451.
[246] Memo by Lord Sandwich, December 31, 1781, in Barnes and Owen, *Sandwich,* 4:298.

but behaved in a way that seemed violently amoral - dueling, gambling, and committing adultery with reckless abandon.[247] Over the course of the century, more people began to turn away from the code of honor and the nobility, whom they came to associate with "immorality, irreligion, effeminacy and France."[248] The middle class, especially, sought to separate themselves from the noblemen and create their own identity. In the navy this manifested in the form of the concept of duty. The concept of duty existed within the navy already, but had a distinct middle-class or professional slant to it. Since sea officers lived in between the world of gentlemen and professionals, they could easily replace the mantle of honor with the "middle-class virtue," of duty.[249] Duty, formerly something associated with tedious inglorious assignments, became linked to patriotic virtue and eventually became much more desireable among sea officers.[250] Crucially, this change remained unfinished and inconsistent by the time of the American War of Independence. That is to say, officers had yet to fully adopt the concept of duty, and not all officers agreed on the point. Nevertheless, some officers, including many of the reformers, began to use this language of duty as a justification for their centralizing objective.

The reformers used the language and implication of duty in various ways but all to the same end: to establish a more unified and centralized institution which helped the signal reformers to remodel the Fighting Instructions. Officers began expecting more from their subordinates. Rodney represents one of the most notable officers who adopted the concept of duty and used it to bring his subordinate officers into line. When his captains ignored his signals, he ordered that they be court martialed or superseded without loss of time.[251] Rodney explained his motives to his wife, Henrietta: "I had given public notice to all my captains &c. that I should hoist my flag on board one of the frigates, and that I expected implicit obedience to every signal made, under the certain penalty of instantly being superseded."[252] With more

[247] Andrew, Aristocratic Vice, 11-14.
[248] Rodger, "Honour and Duty," 442.
[249] Andrew, Aristocratic Vice, 14; Rodger, "Honour and Duty," 442.
[250] Rodger, "Honour and Duty," 442-5.
[251] George Rodney to Nathaniel Bateman, April 21, 1780, in Syrett, Rodney, 2:460.
[252] George Rodney to Henrietta Rodney, May 27, 1780, in Syrett, *Rodney*, 2:413-4.

than a little satisfaction, he reported that the effect of his threat was "admirable," since his officers "were all convinced ... that they had nothing to expect at my hands but instant punishment to those who neglected their duty."[253] Rodney's disdain for captains who did not do their duty in his eyes was withering. After his captains misunderstood his signals at the 1780 Battle of Martinique, he again wrote Henrietta "But if they live to eternity, they will never have it in their power to make their country amends for their behaviour on the 17th of April last."[254] Most admirals were not quite as rabid as Rodney; however, the idea that officers did their duty by obeying their superiors regardless of their own thoughts had an important centralizing effect that the reformers were inspired by and used for their own signaling systems. Under the growing influence of duty, captains could no longer reject an order for reasons of honor. A captain's duty was to obey a signal. Signal reformers, like Rodney, could now use the influence of duty to reinforce their new systems.

Howe, for his part, behaved more subtly when he called his captains to their duty. In his 1782 reforms, he included this passage: "And if any captain shall be wanting in the due performance of his duty in time of battle, the commander of the division, or other flag-officer nearest to him, is immediately to remove such deficient captain from his post, and appoint another commander to take the charge and conduct of the ship on that occasion."[255] This article shows how Howe used duty to prop up his system of signals.

Centralization, then, inspired and sustained signal reform. The reforms of the Authoritarian Whigs reshaped the navy into a more professional instruction. The signal reformers participated in the changes restructuring the navy in the 1740s and 1750s, and carried the centralizing notions over to their own signal reforms during the American War of Independence. Simultaneously, the gradual shift from honor to duty gave further power to the trend of centralization that the navy embraced. The code of honor lent itself to a navy powered and directed by the whims of honorable gentlemen, rather than the direction

[253] George Rodney to Henrietta Rodney, May 27, 1780, in Syrett, *Rodney*, 2:413-4.
[254] George Rodney to Henrietta Rodney, July 30, 1780, in Syrett, *Rodney*, 2:645.
[255] Howe's Instructions, 1782, in Corbett, *Signals and Instructions*, 132-3.

of superior officers and the needs of the service. As the concept of duty became more popular, signal reformers began to embrace it as a means of binding their captains to adhere to their signaling systems. Now, power could be maintained in the hands of the commanding admiral. These two phenomenon, then, helped to inspire and sustain the signal reforms of the American Revolution.

III.

In the background of sea officers' considerations and debates around centralization stood the cultural, intellectual, and social movement known as the Enlightenment. Signal reformers used the ideals of the Enlightenment to help craft their new signaling system during the American War of Independence. N.A.M. Rodger suggests that the impact of the Enlightenment on European navies in particular "seems in truth to have been rather limited."[256] He argues that the Enlightenment primarily influenced the respective societies of Europe, and thus the impact on navies was indirect at best. Focusing on signaling and tactics, the Enlightenment seems to loom larger than Rodger acknowledges: French tactical writers, such as Hoste and Morogues, endorsed Enlightenment ideas to help refine and enhance naval tactics and signals. Numerous British observers envied the French writings, because Britain had no such writings. Nevertheless, British officers, including the signal reformers, read the French works or obtained translations of them and adopted Enlightenment ideas to help guide their reforms.

Defining the Enlightenment is not an easy task. The well-known German thinker Immanuel Kant believed enlightenment was the practice of allowing oneself to use their knowledge to investigate the world around them.[257] For much of the twentieth century, historians held that the Enlightenment existed as a sort of monolithic phenomenon defused from intellectual centers such as Paris or Hamburg, where small bands of thinkers gathered to challenge preconceived notions of the human experience. More recent

[256] N.A.M. Rodger, "Navies and Enlightenment," in *Science and the French and British Navies*, edited by P. van der Merwe, (London: National Maritime Museum, 2003), 18.
[257] Immanuel Kant, *An Answer to the Question: "What is Enlightenment?"* translated by H. B. Nisbet, (London: Penguin Books, 1991), 1.

scholarship has painted a different picture altogether.[258] Historians now acknowledge that the Enlightenment was a multifaceted phenomenon that took on separate meanings to different people. The Enlightenment in France was different from that in Spain, or Germany, or Italy. Nor was it simply an intellectual movement, but a cultural and social movement.[259] Enlightenment historian Roy Porter explains "We must resist being seduced by [the Enlightenment's] slogans, and neither hypostatize the Enlightenment as the manifest destiny of humanity nor, conversely, diabolize it as a plot of dead white males: rather it should be seen as a cluster of overlapping and interacting elites who shared a mission to modernize."[260] This is to say, there is no single Enlightenment, but rather an intricate web of enlightenments occurring simultaneously.

Despite being on opposite sides of several conflicts, British and French sea officers were part of the "overlapping and interacting elites" of their respective countries. Each sought to improve their navies, but in subtly different ways. For the French navy, their method of improvement most often took the form of theoretical treatises and books, whereas British sea officers preferred to take a more hands-on, practical approach. The reason for these two approaches seems to lie in the social origins and training of the respective groups.

British sea officers came from a more varied background than their French counterparts. British officer candidates served a set number of years in a naval or merchant vessel gaining practical experience.[261] Many sea officers had middle-class backgrounds and had more solid training in the practical skills required to sail a ship, such as navigation. They were also more likely to work closer with the ship's skilled warrant officers, who came almost uniformly from the lower to middle class.[262]

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[258] See Roy Porter, *The Creation of the Modern World: The Untold Story of the British Enlightenment,* (New York: W. W. Norton, 2000); Anthony Page, *Britain and the Seventy Years War, 1744-1815: Enlightenment, Revolution and Empire,* (London: Palgrave, 2015); Anthony J. La Vopa, *The Labor of the Mind, Intellect and Gender in Enlightenment Cultures*, (Philadelphia: University of Pennsylvania Press, 2017).
[259] Thomas Munck, *The Enlightenment: A Comparative Social History, 1721-1794,* (London: Arnold, 2000), 20; Porter, *Creation of the Modern World,* xxi; Page, *Britain and the Seventy Years War,* 138.
[260] Porter, *Creation of the Modern World,* xxii.
[261] Lavery, *Nelson's Navy,* 88-93.
[262] Rodger, "Navies and the Enlightenment," 14-5.

The French navy's system of promotion funneled applicants from the middling classes to positions commanding smaller vessels, from which they could expect no further promotion. Many, if not most, of the French navy's captains and admirals were noblemen.[263] British and French officer training reflected the desperate origins of their officer corps. French officer candidates, or *guardes de marine,* received highly theoretical educations using mathematical textbooks such as Etienne Bézout's *Course de mathématique*.[264] While they had fair training in theoretical mathematics, usually geometry and algebra, French officers stayed away from the practical mathematics, such as navigation.[265]

The leaders of the French navy espoused the pure Enlightenment mathematics that their British counterparts avoided for much of the eighteenth century. Given that French officers received theoretical mathematical training, it makes sense that they would be the ones who authored theoretical books. Several of the authors who wrote on the subject of naval tactics were French naval officers, such as Bigot de Morogues, Bourde de Villehuet, le vicomte de Grenier, and le comte de Tourville. British sea officers, however, did not write theoretical works on naval tactics or signaling until the very end of the eighteenth century and well after the conclusion of the American War of Independence.[266] Rodger argues British sea officers concerned themselves more with practical naval issues like discovering a method to find one's longitude at sea or maintaining the health of the crew.[267]

Not all British officers supported the Royal Navy's lack of theoretical texts. Plenty of British sea officers enjoyed the French works and found them to be thought provoking.[268] Officers understood that a careful balance between practice and theory could be beneficial to them. In the 1750s, Vernon complained,

> There is one Thing extremely obvious, which is, That our Sea - Officers despise Theory too much, and by trusting only to their Genious [sic] at the Instant they are to act, have

[263] Rodger, "Commissioned Officers Careers," 88; Rodger, *Command,* 204.
[264] Rodger, "Navies and the Enlightenment," 7.
[265] Rodger, "Navies and the Enlightenment," 7.
[266] Rodger, "Navies and the Enlightenment," 6-7; Willis, *Fighting,* 4.
[267] Rodger, "Navies and the Enlightenment," 12-3.
[268] See for examples Richard Kempenfelt to Charles Middleton, January 18, 1780, in Laughton, *Barham,* 1:313; Charles Henry Knowles, *Observations on Naval Tactics; and on the Claims of Mr. Clerk, of Eldin, &c.,* (London: 1830), Google Books, 14.

> neither Time nor Foundation whereby to proceed on … and by the want of either Theory or Experience, which should furnish them with a competent Number of Ideas distinct and clear their Thoughts are puzzled, perplexed, and confounded.[269]

Similarly, Admiral William Carnegie, seventh Earl of Northesk, commented to Rodney in 1783, that "Practice is fully as necessary, as Theory, think I, that is my old fashioned Creed," supporting a tenuous balance between book-learning and hands on experience.[270]

French tactical writers believed that by using pure mathematics, they could distill naval combat to an exact science, as philosophers and scientists throughout Europe were then doing in every aspect of life. Numerous French scholars published books and treatises on naval subjects, the most famous being the writer Paul Hoste. In 1697, Hoste, a Jesuit priest, mathematician, and one-time secretary to the famous French admiral Comte de Tourville, published his widely influential book *L'Art des Armées Navales ou Traité des Évolutions Navales*, or *The Art of Naval Armies or Treaty of Naval Evolutions.* Hoste's book colored French tactics for much of the century. He suggested that by uncovering the simple theories of naval warfare, any admiral had the tools of victory at his fingertips. For Hoste, the essential tool to uncover these theories was mathematics - more specifically, geometry. A 1760 English translation of Hoste's work explained how a ship could successfully chase and capture another ship while sailing on parallel courses. It read "If the ship that chaces [sic] is a great way to leeward of the chase, she should continue on the same board till she can tack upon her; that is to say, arriving at the point E, she will find the chace [sic] at the point F; so that the angle FED will make four points, of 45°."[271] Naturally, this assumed no change in wind, current, or the ship's rate of sailing. While often highly theoretical, writers like Hoste, the natural philosopher Pierre Bouger, and the French sea officers Vicomte de Morogues and Bourdé de Villehuet represented a community of tactical writing that Britain lacked.[272]

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[269] [Vernon], *Enquiry,* 20.
[270] Quoted in Rodger, "Honour and Duty," 429.
[271] O'Bryan, *Naval Evolutions,* 4-5.
[272] Willis also points out that Hoste's work, while influential, was also quite dated. When Hoste sailed with Tourville ships still used whipstaffs to steer instead of wheels. Nevertheless, later authors continued to appropriate his work to their own times. For more see Willis, *Fighting,* 3-5.

Kempenfelt, regularly cited by historians as one of the navy's most intellectual and innovative officers, wrote regularly about his thoughts on a stunning variety of subjects, though never published his writings.[273] In 1779, he remarked to Charles Middleton, "That we have no regular system of naval tactics you know," and that to best direct a force one must have a system of tactics laid out. "Our enemies have theory, we were superior in practice," he continued, referring to the recent First Battle of Ushant (July 27, 1778). He then lamented that "They are in a way to remove the difference in the last, and how will the comparison then stand between us?"[274] In other words, according to Kempenfelt, the French perfected theory to such a degree as to render the British fleet's practical experience moot.[275] He also noted "Pere [Paul] Hoste, a Jesuit, secretary to the Count of Tourville, admiral of the French fleet, was the person who undertook the task, which he executed so well that it remains still, with little alteration, the system they follow."[276] Kempenfelt believed that the best way to overcome the Navy's theory deficiency was to consult the French writers.

At various points throughout the century, British printers produced English translations of famous French works by writers like Hoste and Morogues. The problem with these translations was that they were generally quite poor, according to Tunstall.[277] The translators seemed to have a hard time translating the spirit of what the original author meant to say. Translators sometimes eschewed the mantle of translator and donned the mantle of editor, adding whole sections of text that never existed in the original book.[278] A quick glance at a copy of the English translation of Morogues' piece bears this out. Tunstall notes that large portions of the book were clearly not from the original book, such as sections entitled "A general idea of the French officers, of their rank, pay, &c." or "A short sketch of the Danish marine."[279] As interesting as these sections may be, they failed to convey the original author's ideas. Nevertheless,

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[273] Rodger, *Command,* 350; Rubinstein, *Catastrophe at Spithead,* 6; Willis, *Fighting,* 56.
[274] Richard Kempenfelt to Charles Middleton, August, 14, 1779, in Laughton, *Barham,* 1:295
[275] The implications of this battle are covered more fully in chapter four.
[276] Richard Kempenfelt to Charles Middleton, January 18, 1780, in Laughton, *Barham,* 1:313.
[277] Tunstall, *Naval Warfare,* 123-4.
[278] Tunstall, *Naval Warfare,* 123-4; see Hoste, *Naval Evolutions;* Sebastien François Bigot de Morogues, *Naval Tactics; or, a Treatise of Evolutions and Signals…,* translated by Anonymous, (London: 1767).
[279] Morogues, *Naval Tactics,* 59 and 113.

monolingual British sea officers now had the opportunity to explore some of the influential French tactical works they heard so much about.

In 1782, John Clerk of Eldin privately published the first English language work on naval tactics, titled *An Enquiry into Naval Tactics.* While Clerk's work came at the very end of the American War of Independence, the reformers reactions to his work hint at their stance towards Enlightenment works generally. Clerk was the son of a Scottish judge and politician who forbade him from going to sea despite Clerk's deep love for all things maritime. Instead, Clerk followed naval events closely and kept in contact with naval and merchant captains. He even fashioned a number of small model ships with which to play out battles with obliging sea officers.[280] Despite his idiosyncrasies, Clerk was a man who moved in the intellectual circles of Enlightenment Scotland. Clerk could count amongst his friends famed geologist James Hutton and Robert Adams, an architect of some renown.[281] In 1778, Clerk received word of the dire outcome of the First Battle of Ushant and decided to put his thoughts on paper. Clerk, like many of his contemporaries, believed that the navy stood as Britain's greatest defense, and that the ideas he had about naval tactics could help prevent further naval disasters. Over the following four years, Clerk systematically compiled information on the navy's most critical engagements and came to the conclusion that the way that the British navy approached their enemy and the navy's devotion to attacking from windward led to continually indecisive results.[282]

When Clerk finished his initial draft, he had fifty copies printed in Edinburgh to distribute amongst his friends and those naval minds he thought might have an interest in his work. Howe, Rodney, and Kempenfelt all either received a copy or spoke with Clerk directly. Jim Tildesley relates a charming anecdote that sees Charles Douglas, Rodney's Flag Captain at the Battle of the Saintes, and Kempenfelt visiting Clerk, and his brothers-in-law to discuss Clerk's ideas and play out his theories with his signature

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[280] Jim Tildesley, "The Influence of the Theories of John Clerk of Eldin of British Fleet Tactics, 1782-1805," *Mariner's Mirror* 106, no 2 (May 2020): 162-5; Tunstall, *Naval Warfare,* 187.
[281] Tildesley, "Influence of the Theories of John Clerk," 162; Porter, *Creation of the Modern World,* 243
[282] Clerk, *An Inquiry into Naval Tactics,* 1-2; Tunstall, *Naval Warfare,* 187-91.

model ships.[283] Rodney made his thoughts clear on Clerk's writings by annotating an early copy of his book. A later publisher incorporated Rodney's writings into the 1824 edition of Clerk's work. Rodney seems to have viewed Clerk's work favorably and agreed that the British fleet should always concentrate on one part of the enemy's line, rather than spread themselves along the length of the enemy's line, as most admirals did.[284]

Clerk's work represents the archetypal Enlightenment work. Porter contends that the Enlightenment called for the clearing away of "the lumber house of the mind," and to strip down complicated matters to their most fundamental level. Once accomplished, one could then understand the problem more clearly.[285] This is what Clerk proposed to do. In a systematic fashion, he gathered evidence to help him understand the fundamentals of naval tactics and proposed the self-evident answer. Reformers came to believe that Enlightenment works like those of Clerk, Hoste, and Morogues offered a roadmap to success. The key to following this roadmap - to getting a fleet to work in perfect unison - was a new system of signals. The admiral had to be able to direct or correct officers at will, and moreover, the amount of tactical knowledge left up to unwritten rules had to be minimized and codified.[286] The "lumber house" of signals had to be cleared away.

The influence of the Enlightenment motivated the signal reformers in various ways, more of which will be discussed in chapter four. A brief examination of the work of the signal reformers shows the influences of the Enlightenment, though. In 1782, for example, Howe decided to have his ships sail in multiple columns, to make forming a line ahead easier in an emergency. This order of sailing was first championed by Morogues, suggesting that Howe had some familiarity with his work.[287]

Part of the Enlightenment was the increased use of scientific methods to understand the world.[288] Signal reformers made use of experimentation to guide their reforms. The influence of the Enlightenment,

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[283] Tildesley, "Influence of the Theories of John Clerk," 165.
[284] Clerk, *An Essay on Naval Tactics,* 18.
[285] Porter, *Creation of the Modern World,* 53.
[286] Richard Kempenfelt to Charles Middleton, January 18, 1780, in Laughton, *Barham,* 309-13.
[287] Howe's Instructions, 1782, in Corbett, *Signals and Instructions,* 146; Morogues, *Naval Tactics,* 5.
[288] Page, *Britain and the Seventy Years' War,* 139-40.

then can be found in Kempenfelt's search for the optimal size and coloration for signal flags. In 1780, he declared that the best dimensions for signal flags were five and a half yards by nine yards.[289] One year later, Kempenfelt reassessed: "What appears the most convenient size of signal flags for large ships is five yards in breadth."[290] The use of the phrase "What appears," indicates that Kempenfelt experimented with multiple different dimensions. He also judged that one size did not fit all sizes of ships and insisted that frigates should have flags only four years across.[291] Kempenfelt further noted that the viewer could observe certain color combinations better than others. For example, white and yellow could not be used together, but white worked well with red, and yellow with blue.[292] The experimentation encouraged by the Enlightenment formed a vital part of signal reform.

The rise of Enlightenment ideals helped to refine and enhance naval tactics and signals. French writers, inspired by Enlightenment ideals, sought to uncover the fundamental science of naval warfare. They produced treatises and books on naval tactics which had no equivalent in Great Britain until 1782. British sea officers obtained copies and translations of the French works, and used the Enlightenment ideas the books espoused to influence their own tactical thoughts. The signal reformers, especially, looked to these works to help them craft new signaling systems during the American War of Independence.

The signal reformers of the American War of Independence were molded by their experiences in the navy and the wider social, cultural, and intellectual trends of British society. At the same time, they sought to harness the power and repercussions of these movements to improve the Royal Navy and bring upon themselves the laurels of victory. The generation of Howe experienced almost incessant war from 1739 forward, and the wars they fought were wider ranging than ever before. This lengthy and thorough experience with the Fighting Instructions and the creation of signals gave them unprecedented understanding of the system. The reformers also experienced growing trends of centralization in the form of Authoritarian Whig reforms and the growing acceptance of the notion of duty. Seeing these factors at

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[289] Richard Kempenfelt to Charles Middleton, March 20, 1780, in Laughton, *Barham,* 1:313.
[290] Richard Kempenfelt to Charles Middleton, February 19, 1781. In Laughton, *Barham,* 1:337.
[291] Richard Kempenfelt to Charles Middleton, February 19, 1781. In Laughton, *Barham,* 1:337.
[292] Richard Kempenfelt to Charles Middleton, March 20, 1780, in Laughton, *Barham,* 1:314.

play first hand, reformers saw tools they could use to bring their fleets to a higher degree of effectiveness. The Enlightenment, too, was a force which reformers experienced, but also sought to utilize to bring their systems into a greater state of uniformity and clarity. Armed with these experiences and tools, the reformers embarked on their reforms. The testing ground for which was the American War of Independence.

Chapter Four: "The Unnatural Rebellion:" Signal Reform during the American War of Independence

The morning of the twelfth of July, 1776, dawned clear with a moderate breeze blowing from the northwest as the soldiers of the British army began to wake from their sleep on Staten Island. Looking out over the water of the Lower Bay of New York Harbor they would have observed a squadron of ships belonging to His Majesty's Royal Navy. Among the largest ships in the squadron was HMS *Chatham*, wearing the flag of Vice Admiral Molyneux Shuldham, the Commander-in-Chief of His Majesty's ships in North America.[293] As the day wore on, the soldiers on shore may have noticed HMS *Phoenix* and HMS *Rose* preparing to get underway. At the request of General William Howe, Shuldham ordered the ships to sail up the Hudson River to cut off rebel communications with Albany.[294] The pair made quite a show, running past the rebels' river defenses with ease, and returning fire all the way. As the "very heavy cannonade" of the two ships' escapade echoed around the harbor, a squadron of ships appeared in the direction of Sandy Hook and made their way past State Island.[295] Among them was HMS *Eagle*, transporting the new Commander-in-Chief of the North American station and William Howe's older brother, Vice Admiral Richard Howe, fourth Viscount Howe. Amidst the cheers of the soldiers on Staten Island and the thunder of a salute from Shuldham and his fleet, the *Eagle* dropped her anchor.[296] A new chapter in the history of naval signaling was about to begin.

This chapter will examine the new systems of signaling crafted by the reformers while showing that the factors described in chapter two influenced and sustained signal reform. The events of the American War of Independence also influenced how and when the reformers engaged in their reforms,

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[293] Journal of HMS Phoenix, July 12, 1776, Morgan, *NDAR*, 5:1037; Journal of HMS Rose, July 12, 1776, Morgan, *NDAR*, 5:1037-8; Journal of Henry Duncan, July 11 and 12, 1776, in J. K. Laughton, ed., "Journals of Captain Henry Duncan.," in *Naval Miscellany*, vol 1, Navy Records Society vol. 20, (London: Navy Records Society, 1901), 117.
[294] Molyneux Shuldham to Philip Stephens, July 8, 1776, in Morgan, NDAR, 5:975.
[295] Journal of HMS Phoenix, July 12, 1776, Morgan, *NDAR*, 5:1037; Journal of HMS Rose, July 12, 1776, Morgan, *NDAR*, 5:1037-8; Journal of Henry Duncan, July 11 and 12, 1776, in Laughton, "Duncan," 1:117.
[296] Journal of Henry Duncan, July 11 and 12, 1776, in Laughton, "Duncan," 1:117; Journal of Lieutenant Colonel Stephen Kemble, July 12, 1776, in Morgan, *NDAR*, 5:1042.

but also placed the signal reformers in influential positions that allowed them to implement their new plans. The American War of Independence initially seemed the perfect time and place to test new signaling systems. A weak Continental Navy posed little threat to the Royal Navy. The entrance of the French and Spanish navies into the war completely altered the situation; however, and early defeats at the hands of a tactically resurgent French Navy produced a direr state of affairs. Through this period of uncertainty, the reformers continued their work, testing their systems, some of which succeeded, and others which did not.

I.

The months before Howe's arrival in New York Harbor went rather poorly for the Royal Navy because in light of a rebellion spreading from Massachusetts to the rest of Britain's North American Colonies, it seemed that the navy could do nothing to stop it. Part of the problem seems to have been leadership. Britain's first two naval commanders, Vice Admirals Samuel Graves and Molyneux Shuldham had little impact on the course of the "unnatural rebellion," as the First Lord of the Admiralty called it.[297] Graves conduct, an item of controversy amongst historians, attracted the ire of more than a few observers both in North America and Britain. King George echoed the sentiments of many when he wrote "I am of the opinion that when once those rebels have felt a smart blow, they will submit; and no situation can ever change my fixed resolution, either to bring the colonies to a due obedience to the legislature of the mother country or to cast them off!"[298] Unfortunately, Graves could not deliver the "smart blow" the King desired. The First Lord of the Admiralty, Lord Sandwich, reminded Graves "I cannot now conceal from you that I find the world in general full of complaints that the fleet does nothing…."[299] Shuldham, Graves' replacement, fared little better. His repeated overtures to London for more ships and supplies were rebuffed by officials there, eager to keep the price of ending the rebellion

[297] Lord Sandwich to Samuel Graves, August, 1775, in Barnes and Owen, *Sandwich,* 1:69.
[298] George III to Lord Sandwich, July 1, 1775, in Barnes and Owen, *Sandwich*, 1:63.
[299] Lord Sandwich to Samuel Graves, August, 1775, in Barnes and Owen, *Sandwich,* 1:69.

low. Then, in March, 1776, the rebel army forced the withdrawal of British troops from Boston by fortifying Dorchester Heights with artillery taken from the British fort of Ticonderoga in New York.

Despite commanding the fleet in North America for just over a month, Shuldham received a notice in February that Howe would be superseding him. After mistakenly appointing someone else to a sinecure promised to Howe, the ministry felt they had to assuage the wounded honor of their up-and-coming admiral. Cognizant of the fact that they had only just sent Shuldham to North America, and that he would be much aggrieved to be replaced so quickly, the ministry proposed splitting the North American fleet. Howe stubbornly refused, insinuating he would resign his commission if that occurred.[300] The insinuation caused some alarm within the ministry and Lord North, the Prime Minister, wrote the King to express his alarm and ask that the King ensure Howe remained in the service.[301] The ministry bowed to pressure from Howe's demands, and appointed him to command the Royal Navy in America at the beginning of February, 1776.[302] These machinations provide more than context, though. They remind historians that even though men like Howe utilized the concept of duty, duty's submission of honor was far from complete or universal, creating a complex environment for signal reform.

Howe spent two and a half months preparing to take up his new command. He held meetings with the King and his ministers, and reviewed his instructions as a commissioner of peace on behalf of the government. Howe was eager to start his voyage, but preparations delayed his leaving London until the end of April.[303] Finally, on May 6, Howe made his way down from London to Portsmouth, where HMS

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[300] Augustus Keppel to Lord Sandwich, December 17, 1775, in Barnes and Owen, *Sandwich*, 2:202; Lord Sandwich to Augustus Keppel, December 20, 1775, in Barnes and Owen, *Sandwich*, 2:203-4; Syrett, *Royal Navy in American Waters*, 44-6; Lord North to the King, February 2, 1776, in Fortescue, *Correspondence of George III*, 3:335.
[301] Lord North to the King, February 2, 1776, in Fortescue, *Correspondence of King George III*, 335-6.
[302] Lord Sandwich to the King, February, 3, 1776, in Fortescue, *Correspondence of King George II*, 3:337-8; Lord Sandwich to Molyneux Shuldham, February 13, 1776, in Barnes and Owen, *Sandwich*, 1:119; The King gave Shuldham an Irish peerage as recompense for his replacement.
[303] *London Chronicle* , March 5 to March 7, 1776, in Clark, *NDAR*, 4:948; "Country News," *Derby Mercury*, March 22, 1776, British Newspaper Archive; Richard Howe to George Germain, March 26, 1776, in Clark, *NDAR*, 4:996-8; Richard Howe to George Germain, April 1, 1776, in Clark, *NDAR*, 4:1011; Richard Howe to William Hotham, April 29, 1776, in Clark, *NDAR*, 4:1075.

Eagle and reinforcements bound for America lay waiting. Four days later, Howe and the fleet set sail for New York.[304]

After coming to anchor in New York Harbor on July 12, Howe distributed three separate books to the fleet: a signal book, a book explaining the signals and the relative instructions, and another establishing standing orders for the fleet. Tunstall describes the signal book as "one of the most important documents in the whole history of naval tactics."[305] As discussed in chapter one, the concept of a signal book - that is a book which helps the reader understand and prepare signals according to the system to which it belonged - was not new. Indeed, historians know that signal books seemed to be a common way to help interpret the Fighting Instructions. Howe's signal book, entitled "Signal Book for the Ships of War," referenced not the Fighting Instructions, but Howe's second book.[306] Unlike the Fighting Instructions' thick paragraphs interspersed with signals and instructions, Howe's signal book contained carefully printed tables, showing the signal, its meaning, and where the flag should be flown by the sender. Just as important, Howe grouped his signals, not by flag design - as was often the case previously - but by the meaning of the signal.[307] The book also reduced the number of flags required, while adding a number of new flags of Howe's own design "show[ing] a strong partiality for two or three horizontal stripes."[308]

Howe's second book had the pithy title "Instructions for the Conduct of the Ships of War, Explanatory of, and Relative to the Signals Contained in the Signal-Book Herewith Delivered." All of the signals in Howe's "Signal Book" referred to the "Instructions for the Conduct of the Ships of War," and not to the Fighting Instructions. The "Instructions for the Conduct of the Ships of War," fulfilled a similar purpose as the Fighting Instructions, in that it explained how Howe expected his captains to react to his

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[304] Journal of Henry Duncan, May 6 and 10, 1776, in Laughton, "Duncan," 112.
[305] Tunstall, *Naval Warfare*, 129.
[306] Howe's signal book was also the first to be printed by an admiral, whereas other signal books had been printed by private printers, for more, see Tunstall, *Naval Warfare*, 129-30.
[307] Tunstall, *Naval Warfare*, 129.
[308] Holland, "Development of Signaling," 7.

signals, so while Howe split the signal and tactical portions of his system in two, they still depended on one another to operate.[309]

Lastly, Howe's standing orders serve as a sort of catch-all for his ideas around fleet governance. Like previous iterations of Howe's standing orders, such as the copy he promulgated on HMS *Magnanime*, point to Howe's desire to bring his fleet under a more unified system. His 1776 copy includes articles ordering officers to bring their order books with them when called aboard the flag ship, or another which dictates that any ship in the fleet can investigate a strange ship when they see it without a signal from Howe; while other sections regulated the duty of certain officers.[310]

Traditional histories paint Howe's 1776 reforms as a harbinger of Howe's eventual 1790 era code, which the Royal Navy used until the end of the Napoleonic Wars in 1815.[311] They are, on the whole, laudatory of the beginning of reform generally more so than the actual contents of the reforms. Holland refers to Howe's signals as "revolution," while Corbett suggests "Howe … struck the first blow at the old system," but admits "the actual material in Lord Howe's Signal Book and its companion volume may not show any startling advance over contemporary thought."[312] Naturally, Howe would not have imagined his 1776 reforms as only a step on the path to his 1790 signal system. Far from a deliberate path of progress, Howe's 1776 reforms show a sort of hesitant experimentation, which Howe and his fellow reformers continued to do for some time.

Howe's motives in crafting the signaling system of 1776 remains unclear because Howe maintained a shroud of secrecy over his thinking process.[313] One motive becomes clear based on what records do exist, however. Howe's reforms in 1776 were a continuation of the centralizing trend highlighted in the previous chapter. Howe made this clear in a memo accompanying his new books,

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[309] Tunstall, *Naval Warfare,* 129.
[310] General Instructions and Directions for the Conduct of the Ships of War, When Sailing or in Chace by Day, July 13, 1776, in Morgan, *NDAR,* 5:1060-61; Instructions and Standing Orders, July 12, 1776, in Corbett, *Signals and Instructions,* 87-92.
[311] Tunstall, *Naval Warfare,* 129; Holland, "Development of Signaling," 8; Barrie Kent, *Signal!: A History of Signaling in the Royal Navy,* (Petersfield, UK: Hyden House, 1993), 3; Corbett, *Signals and Instructions,* 18.
[312] Holland, "Development of Signaling," 7-8; Corbett, *Signals and Instructions,* 17.
[313] Syrett, "Admiral Lord Howe Manuscripts," 273.

ordering, "You are to comply with the several Signals and Instructions for the Government of the Squadron, and Establishment of a more Uniform Discipline in the Ships."[314] Here, Howe highlights the reason for the reforms: that is a "more Uniform Discipline," using the term discipline in its eighteenth century context. Howe again echoes the same sentiments within his "Instructions," writing "WHEREAS an uniform system of discipline established in this squadron would be productive of many essential benefits; the subsequent regulations, prepared in that view, are to be conformed to, and continue in force till further order."[315] Howe's instructions detailed how captains should make certain evolutions, in a more specific way than the Fighting Instructions did. For instance, Howe's chasing signals dictate that when the admiral recalls the chasing vessels, the farthest vessel should return to the main fleet first.[316] Instructions such as these, did not represent a revolution in tactics, but they did ensure that the captains of the fleet knew for a fact how to react in a certain situation. In this way the centralizing trends of Howe's earlier career continued into the American War of Independence and influenced signal reform in the long term.

Howe's decision to sideline the Fighting Instructions appears to be a revolutionary move. No evidence exists to suggest that any other officer did this since the Fighting Instructions became firmly established. Few historians can answer the curious question of why exactly Howe decided to implement this new system when he did; however, the American War of Independence represented a distinct conflict compared to the wars Howe had fought previously.

Howe's views on American war played a key role in understanding why he decided to implement his reforms. From the perspective of Britain, the "Tumult and Disorder of the Times" now referred to as the American War of Independence, looked more like a rebellion or insurrection than a war.[317] In its early years, the American Revolution looked like an act of lunacy brought on by greedy, bloody-minded

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[314] Richard Howe to Andrew Snape Hammond, July 12, 1776, in Morgan, *NDAR*, 5:1044.
[315] Instructions and Standing Orders, July 12, 1776, in Corbett, *Signals and Instructions*, 87.
[316] General Instructions and Directions for the Conduct of the Ships of War, When Sailing or in Chace by Day, July 13, 1776, in Morgan, *NDAR*, 5:1061.
[317] Proclamation by Admiral Howe and General Howe, July 14, 1776, in Morgan, *NDAR*, 1076.

colonial elites. Major John Pitcairn describes the American rebels as "those foolish bad people."[318] Charles Douglas exuberantly derided "this atrocious rebellion in America the most insolent, the most ungrateful, that ever reared an opprobrious head against an indulgent parent state."[319] The way in which British sources refer to the American rebellion hints that they regarded it as a political problem, not necessarily a conflict between two nations.

While they spoke in terms of a military response, British leaders made clear that the military operations they foresaw would be akin to a sharp slap on the wrist, not a full scale war. Lord Sandwich echoed these sentiments, "The nation (except some factious and interested opponents) are in a manner unanimous in their resolution to crush the unnatural rebellion that has broke out in America by force of arms, which to our great concern we find now to be the only expedient left…."[320] British officials on the ground in North America thought the same way, "the General [Thomas Gage, Commander-in-Chief of the Army in North America] thinks he sees it already, and all the friends to Government are of opinion that vigorous measures at present would soon put an end to this rebellion. The deluded people are made believe that they are invincible."[321] Sea officers surveying the situation reminded the Admiralty that the mission of the Royal Navy in North America required a different approach than the usual European wars they were used to. Most of the ships would be smaller vessels sent to intercept enemy trade and none of the larger ships of the line would be necessary.[322]

As the ministry knew well, the Continental Navy existed only in name. The Marine Board, the body responsible for the navy, was racked by divisions and a lack of resources.[323] The navy had a small number of frigates, the first of which, the *Randolph*, lost two masts and a large portion of her deck on the

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[318] John Pitcairn to Lord Sandwich, February 14, 1775, in Barnes and Owen, *Sandwich,* 1:58; Major Pitcairn later led British troops at Lexington and Concord in April, 1775.
[319] Charles Douglas to Lord Sandwich, January 21, 1776, in Barnes and Owen, *Sandwich,* 1:109.
[320] Lord Sandwich to Samuel Graves, August 25, 1775, in Barnes and Owen, *Sandwich,* 1:70-1.
[321] John Pitcairn to Lord Sandwich, February 14, 1775, in Barnes and Owen, *Sandwich,* 1:57.
[322] George Rodney to George Germain, [undated], in Syrett, *Rodney*, 2:211-7; Memo to the Admiralty, [July 1775], in Barnes and Owens, *Sandwich,* 1:64.
[323] John Hancock to Esek Hopkins, June 14, 1776, in Morgan, *NDAR,* 5:528; John Hancock to Dudley Saltonstall and Abraham Whiple, June 14, 1776, in Morgan, *NDAR,* 5: 530-1; Sam Willis, *The Struggle for Sea Power: A Naval History of the American Revolution,* (New York: W. W. Norton, 2015), 193-7.

maiden voyage. One of the navy's leaders, Esek Hopkins, reported to his brother that the Royal Navy's presence prevented the Continental Navy from striking anywhere but Rhode Island.[324] Howe had little to fear from this force that could scarcely sail from Philadelphia to Charleston without meeting ruin. In North America Howe would not find the great hundred-gun ships of the Spanish and French fleet. Sharing the mindset of his countrymen, Howe likely looked upon the American war as something quite different. His new posting, then, proved the perfect place to test a new signal system.

Howe's second set of reforms came in the summer of 1777, as British forces prepared to decamp from New York and New Jersey to attack the capital of the United States: Philadelphia. This second reform, entitled "Additional Instructions Respecting the Conduct of the Fleet Preparative to and in Action with Enemy," began the tactical step forward that its predecessor lacked. Tunstall comments "these were clearly designed to give an even higher degree of precision to the forms of attack included in the main instructions," referring to Howe's first set of instructions issued the year previously.[325]

Howe's 1777 additions included eight articles, with the addition of a series of smaller sections explaining best practice for preparing the fleet for action. One of the great themes which runs through signal reform is the search for a method to use the line ahead as an offensive weapon. As discussed previously, the line ahead made for an excellent defensive tactic, since ships could provide one another mutual support. A fleet attacking an enemy in line ahead had to find a way to bring their fleet parallel to the enemy's without approaching perpendicularly because their lead would be exposed to fire from the entire line.[326] Howe aired these same concerns in his new instructions, suggesting that strictly maintaining the line ahead in the traditional manner "may on many occasions be found prejudicial to the service, by restraining the captains from taking advantage of the favourable incidents which may occur in the progress of a general action."[327] Howe then states "it is the object of these instructions to facilitate the

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[324] Nicholas Biddle to James Biddle March 11, [1776], in Morgan, *NDAR*, 8:88-9; Esek Hopkins to Stephen Hopkins, June 8, 1776, in Morgan, *NDAR*, 5:424-426
[325] Tunstall, *Naval Warfare*, 130.
[326] Willis, *Fighting*, 132.
[327] Additional Instructions Respecting the Conduct of the Fleet, July 1, 1777, in Corbett, *Signals and Instructions*, 108.

means of improving such opportunity by an authorised deviation from those restrictive appointments."[328] "Authorised deviation" seems paradoxical at first, however, this included signals such as that in article eight which allowed officers to steer to their appointed enemy ship without regard to maintaining the line.[329] Breaking formation in this case was acceptable because the admiral ordered and expected it. Bringing the admiral and his captains into a common understanding with regard to expectations, was in and of itself, another important goal of signal reform. Howe, then, offered his captains a degree of tightly controlled freedom, understanding that effective tactics required a degree of autonomy, but still believing that the admiral had to retain overall control of the engagement.[330]

Howe's reforms of 1777, again reflect the type of war he fought, but also the type of war he anticipated fighting. As early as 1774. British policymakers began to consider the prospect of French involvement in the American Revolution.[331] By 1776, they began to receive word that the American rebels had started receiving supplies from France and that France began the process of arming their ships.[332] The British government slowly began to prepare for the worst. Sandwich reported to Howe in November, 1776, that "the conduct of France and Spain is so mysterious that it is impossible to say what demands we may have for line of battle ships in the course of the winter," and that Howe could expect no line of battle ships for the foreseeable future.[333] Naturally, Howe must have been distressed by this news. The idea of a French fleet escaping Europe to come to the aid of the colonists was not out of the realm of possibility. While Britain did not declare war on France until March, 1778, Howe's new instructions began to address his concern for the shift in the type of war he now had to fight, but also show how signal reform was complicated by events of national and global importance.

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[328] Additional Instructions Respecting the Conduct of the Fleet, July 1, 1777, in Corbett, *Signals and Instructions,* 108.
[329] Additional Instructions Respecting the Conduct of the Fleet, July 1, 1777, in Corbett, *Signals and Instructions,* 113-4.
[330] Willis, *Fighting,* 107
[331] Lord Rochford to Lord Sandwich, December 10, 1774, in Barnes and Owen, *Sandwich,* 1:55-7.
[332] Hugh Palliser to Lord Sandwich, January 1, 1776, in Barnes and Owen, *Sandwich,* 1:90; Intelligence Report from Boston, January 24, 1776, in Barnes and Owen, *Sandwich,* 1:111.
[333] Lord Sandwich to Richard Howe, November 6, 1776, in Barnes and Owen, *Sandwich,* 1:163.

More immediately, in the summer of 1777, Howe faced the threat of a resurgent Continental Navy and the immense challenge of helping to supply an armed force thousands of miles across the sea from home. In 1776 alone, Britain utilized 763 transports with a total tonnage of 230,490 tons.[334] When Howe instituted a blockade of the American coast in 1776, however, American naval vessels and privateers still escaped to raid British transports up and down the coast, while some began to move across the Atlantic to attack British shipping there. That Howe understood how crucial this task was is evidenced by his eagerness to dispatch his fleet's frigates to aid in convoying these supplies.[335] Howe warned Captain Cornwallis of HMS *Isis*, "I must again recommend all the Dispatch & Caution in your passage with the Convoy down the Bay, that the importance of the Subject in the Timely supply of the Army with the several necessarys [sic] the Ships contain will obviously require."[336] It makes sense, then, that Howe should highlight the importance of protecting trade and reserving supplies in the instructions he disseminated in the first year of his command.[337] Yet, with news of the British loss at the Battle of Saratoga in October, 1777, swiftly followed by a treaty of friendship between France and the United States, the scope of the war changed quickly.

News of the Franco-Spanish alliance reached Howe on May 8, 1778. Several months previous, though, both Howe brothers petitioned the ministry to be relieved of command. William insisted the ministry disregarded his council, and thus he could no longer serve in his capacity. Richard pleaded ill health. Doubtless, both men were probably just tired of an interminable rebellion with too many challenges.[338] In an attempt to consolidate British forces, a demoralized William Howe ordered the evacuation of Philadelphia, which British forces had captured in September of the year previous. As the

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[334] David Syrett, *Shipping and the American War, 1775-1783: A Study of British Transport Organization,* (London: Athlone Press, 1970), 249; a ship's tonnage refers to the volume of cargo a ship could carry.
[335] Andrew Snape Hammond to Senior Officer at the Capes of Virginia, September 2, 1777, in Morgan, *NDAR,* 9:868; Richard Howe to William Cornwallis, September 3, 1777, in in Morgan, *NDAR,* 9:871; Richard Howe to Philip Stephens, July 5, 1777, in Morgan, *NDAR,* 9:220-1.
[336] Richard Howe to William Cornwallis, September 5, 1777, in Morgan, *NDAR,* 9:883.
[337] Instructions for the Protection of Transports, June, 8, 1777, in Morgan, *NDAR,* 9:70-3; Standing Orders, June 8, 1777, in Morgan, *NDAR,* 9:63.
[338] Lord Sandwich to Richard Howe, February 24, 1778, in Barnes and Owen, *Sandwich,* 2:291.

Continental Army engaged the retreating British army near Monmouth Courthouse on June 28, 1778, Howe received the news every British leader feared; a French fleet had left France for North America.[339]

Howe knew that his temporary replacement for command, Read Admiral James Gambier, had little talent. He was also eager to test his new systems against the French and so he decided to remain in America until his permanent replacement arrived from England. As things stood, though, Howe's fleet was outmatched by the French fleet now crossing the Atlantic under Jean Baptiste Charles Henri Hector, comte d'Estaing. D'Estaing's fleet consisted of eleven ships of the line, one fifty gun ship, and five frigates. Howe, in comparison, had only eight ships of the line and four fifty gun ships and a thoroughly sick crew.[340]

Howe learned of the arrival of d'Estaing on July 8, and quickly divined that his target was Newport, Rhode Island. Howe believed that d'Estaing would first stop at New York to check if Howe was there or not.[341] Howe resolved to make the best out of his situation by arranging his ships near the inner shore of Sandy Hook at the entrance to New York Harbor. If d'Estaing desired to enter the harbor, he would have to negotiate the notoriously challenging entrance and expose his ships to continual fire from Howe's anchored fleet. On July 12, d'Estaing arrived and anchored off Sandy Hook for ten days, before giving up and setting back out to sea.[342]

Howe must have felt a mixed sense of relief and disappointment as he watched the French sail away. At the same time, he now faced the question of where they were headed. About a week after they disappeared, Howe received word that the French were headed for Newport, Rhode Island, which aligned with information that the Continental Army had recently crossed the Hudson River at King's Ferry

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[339] Syrett, *Royal Navy in North American Waters*, 74-6.
[340] Syrett, *British Navy in American Waters,* 76; Willis, *Struggle for Sea Power,* 234-5; Journal of Henry Duncan, July 11, 1778, in Laughton, "Duncan,*"* 159-60; Admirals of the period considered numerical superiority an important prerequisite to victory. A fleet with more ships than another could focus more of their ships on fewer opponents. For more on numerical superiority in fleet actions see Willis, *Fighting,* 127-35.
[341] Richard Howe to John Byron, July 8, 1778, in Crawford, *NDAR,* 13:313-4.
[342] Master's Journal of HMS Roebuck, July 13, 1778, in Crawford, *NDAR,* 13:368; Journal of Henry Duncan, July 22, 1778, in Laughton, "Duncan," 160; Syrett, *Royal Navy in American Waters,* 77-9; Willis, *Struggle for Sea Power,* 234-9.

towards New England.[343] On August 6, 1778, Howe left New York for Rhode Island, arriving three days later. D'Estaing, observing Howe's arrival, had no desire to fight a fleet action within the confines of Narragansett Bay, where he was then anchored. The next morning, d'Estaing made his way out of the bay with an eye to bring Howe to battle.[344]

Howe's fleet first spotted the French around five in the morning, shortly after which, Howe gave the signal to form a line ahead. For the rest of the day, both fleets maneuvered in an attempt to gain a preferable position, with both fleets formed into lines, the French van following the British rear.[345] Around five in the afternoon, a violent storm appeared, ending any chance that the fleets would actually meet.[346] Despite the fact that not a shot was fired in anger, Howe's encounter with d'Estaing, represents the first true trial of Howe's new system and the actions he took during the encounter evidence the strands of thinking which gave birth to the system in the first place.

Perhaps most telling, at 11:40am, Howe left HMS *Eagle*, his flagship of sixty-four guns, for HMS *Apollo,* a thirty-two gun frigate.[347] Since the frigates did not usually participate in the actual line ahead, they offered an excellent vantage point from which to view the line in its entirety.[348] From his position on the *Apollo, Howe* could observe the movements of his entire fleet and direct them accordingly, and just as important, all the ships in the line could see Howe's signals with greater ease. The fact that Howe only moved to the *Apollo* around midday suggests that he was becoming frustrated at his lack of ability to see the exact movements of the fleet around him. His vigorous correction of several of his ships during the maneuvers also hints at the admiral's desire to control all his ships as carefully as possible. HMS *Sommerset* and HMS *Nonsuch* both received directions to maintain their position in line from the all-seeing Howe.[349]

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[343] Syrett, *Howe,* 79-81.
[344] Journal of Henry Duncan, August 9, 1778, in Laughton, "Duncan," 161; Syrett, *Howe,* 83.
[345] Journal of HMS Preston, August 11, 1778, in Crawford, *NDAR,* 13:810; Journal of HMS St. Albans, August 11, 1778, in Crawford, *NDAR,* 13:810; Journal of HMS Phoenix, August 11, 1778, in Crawford, *NDAR,* 13:811.
[346] Journal of Henry Duncan, August 11, 1778, in Laughton, "Duncan," 162.
[347] A frigate refers to a one-decked ship of between twenty-eight and forty-four guns.
[348] Willis, *Fighting,* 69, and 78-9.
[349] Journal of HMS Phoenix, August 11, 1778, in Crawford, *NDAR,* 13:811-2.

Howe left no record of his thoughts around the encounter or how he gauged whether or not the system worked. While Howe signaled individual ships like the *Sommerset and Nonsuch* it seems that most of the fleet kept in good order. Captain Henry Duncan, Howe's Flag Captain (before he relocated to the *Apollo*), reported that the fleet had actually reached the perfect position to attack the French before the late hour and poor weather made it impossible.[350] At the same time it appears that there were some flaws in the system, or at least its execution. At several points throughout the action, Howe signaled his frigates to "come within [hail] of him," meaning they should come over to receive and relay orders by word of mouth.[351] This does not represent a mortal error in the system, though, since this practice was fairly common, but it does indicate that Howe needed to relay a message that his instructions did not contain.[352] The journal of HMS *Phoenix* offers and intriguing clue, though. It denotes that "at 15' [past one pm] the Admiral hoisted a Blue White and Red Flag at his Ensign Staff at 20' past 1 he repeated it."[353] The officer recording all other signals in the journal wrote down the signals meaning, not the signal or flag itself. This suggests that the officer in question could not discern the meaning of the signal. The fact that the admiral repeated the signal again five minutes later suggests that other vessels might not have understood the signal either. Doubtless, had d'Estaing and Howe actually come to blows, Howe's system would have been more rigorously tested, but as it stood as both fleets prepared to weather the storm, Howe's system acquitted itself well enough that Howe saw fit to continue his reforms.

Howe's time in America exemplified the complexity of signal reform. The unique fight against the American rebels gave him a unique opportunity to begin testing a system which significantly altered from the Fighting Instructions. Howe began to make modifications to his system as the threat of French intervention grew stronger. His reforms exemplify the fact that signal reform comprised much more than the simple influence of previous admirals like Anson or Vernon, rather the influences of centralization and the Enlightenment played a role in shaping how Howe went about reform. A month after the

[350] Journal of Henry Duncan, August 11, 1778, in Laughton, *Duncan*, 161.
[351] Journal of HMS Phoenix, August 11, 1778, in Crawford, *NDAR*, 13:812.
[352] Willis, *Fighting*, 78-9.
[353] Journal of HMS Phoenix, August 11, 1778, in Crawford, *NDAR*, 13:812.

encounter with d'Estaing, Howe's replacement reached North America and Howe departed for England to defend his conduct during the war.[354]

II.

French intervention in the American War of Independence radically altered the way British policy makers viewed the conflict. Far from a rebellion on a distant shore, the American War of Independence launched into a full scale global war. In mid-March, 1778, the British government learned of the Treaty of Amity and Commerce between the King of France and the United States.[355] Both states, however, refused to make the first move, for fear of activating their opponent's defensive alliances. The first blow came in June, when two Royal Navy frigates encountered two French frigates in the English Channel. One of the French ships, the *Belle Poule* refused to accompany the British ships to their admiral to discuss their presence there, and after a warning shot from one of the British ships, the *Belle Poule* opened fire. Both sides accused the other of starting the battle, but France finally declared war on July 10, 1778.[356]

In all likelihood, the *Belle Poule* probably meant to bring about a violent confrontation for the purpose of starting the war officially. France was primed and ready for a new war with Great Britain in 1778. French readiness for war directly impacted signal reform by altering the strategic situation in which the reforms were taking place. After the blistering defeats of the Seven Years' War, France embarked on a refurbishment of their navy headed by insightful and reform minded Minister of Marine Antoine-Raymond-Gaulbert-Gabriel de Sartine. They remodeled dockyards, increased the production of gunpowder, and addressed standards of officer education and the cleanliness of ships.[357] British naval observers watched these developments with concern, but the government refused to invest in mobilizing the fleet in anticipation of a French declaration of war.[358] Aware of their inadequacies, the British

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[354] Journal of Henry Duncan, September 25, 1778, in Laughton, "Duncan," 164.
[355] Report of the King's Message, March 17, 1778, in Cobbett, *Parliamentary History,* 19:912.
[356] Willis, *Struggle for Sea Power,* 210-12.
[357] Willis, *Struggle for Sea Power,* 207-9; Rodger, *Command,* 361.
[358] David Syrett, *The Royal Navy in European Waters During the American Revolutionary War,* (Columbia, SC: University of South Carolina Press, 1998), 16.

government responded with a degree of alarm to France's aggressive actions in support of the United States. The government dispatched a new peace commission to America, empowered to grant the United States anything short of independence. The King recalled his representative in France and the navy dispatched reinforcements to the Caribbean and the Mediterranean. The Royal Dockyards, already displeased with a series of new policies Sandwich had implemented in 1775, now received permission to allow for extensive overtime work.[359] In short, the British scrambled to catch up to the French. The evidence of this was later born out in the first fleet encounter of the war: an event which sparked considerable concern about the Royal Navy's tactical fitness and significantly impacted signal reform.

On July 23, 1778, the British fleet under Admiral the Honourable Augustus Keppel sighted the French fleet through a dense fog off Ushant, the very western extremity of France. For the next several days, both fleets maneuvered in an attempt to gain the advantage over the other. Observers later concurred that the French executed their maneuvers with a greater degree of ease and exactness than did the British, who entered the battle in a disorganized fashion. As Keppel's line ran down the French line, he and his ships endured uncharacteristically withering fire from the French.[360] Keppel later explained to Sandwich that "the object of the French was at the masts and rigging, and they have crippled the fleet in that respect beyond any degree I ever before saw."[361] After his initial pass, the damage to the British fleet's rigging prevented them from coming about to reengage the French line again. The French then successfully escaped as night fell.[362]

As neither side saw any ships sunk or captured, historians unanimously describe the First Battle of Ushant as indecisive. Yet as Willis writes about the battle "The impact of naval battles however, always has to be measured both at sea and ashore, and in this instance the impact ashore was immensely

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[359] Syrett, *Royal Navy in European Waters,* 20; Report of the King's Message, March 17, 1778, in Cobbett, *Parliamentary History,* 19:912; "The Case of the Shipwrights … Impartially Considered." in Hattendorf, *Naval Documents,* 533-55.
[360] Rodger, *Command,* 336-7; Syrett, *Royal Navy in European Waters,* 40-3.
[361] Augustus Keppel to Lord Sandwich, July 29, 1778, in Barnes and Owen, *Sandwich,* 2:128.
[362] Rodger, *Command,* 336-7; Syrett, *Royal Navy in European Waters,* 40-3.

influential, for more so than the guns fired and musket-balls exchanged that day."[363] Events spiraled out of control when an anonymous officer published a pamphlet accusing Keppel's second in command, Hugh Palliser, of cowardice. Palliser thought Keppel could refute the accusations with a public statement, and set out to "speak to him upon it in very serious terms."[364] Keppel refused, and a series of courts martial and parliamentary inquiries followed, creating the event known to history as the Keppel-Palliser Affair. In hindsight, historians believe that the long term impact of the affair was relatively slight, though in the fall and winter of 1778 into 1779, the Channel Fleet, specifically, found itself racked with division.[365]

Adding to this, many officers and policy makers became concerned about the apparent tactical finesse of the French navy. Officers throughout the fleet shared Kempenfelt's feelings when he wrote of the British navy, "If you will neither give an internal discipline for your ships, nor a system of tactics for the evolutions of your fleet, I don't know from what you are to expect success, when you leave the enemy in unrivalled possession of these advantages."[366] Not everyone had quite such an insightful take, but as Willis writes "for once, British naval officers came away [from a battle] scratching their heads, deeply impressed with the quality of French seamanship they had witnessed."[367] Amidst all this controversy, two reformers, Kempenfelt and Rodney, came to positions of influence. Their understanding of the engagement of Ushant, and their concerns around the state of the navy shaped the way they realized their signal reforms.

Kempenfelt had the good fortune to sit on Palliser's court martial in the aftermath of the First Battle of Ushant, in the fall of 1778, which helped to solidify many of his preexisting convictions regarding the French navy, British navy, and tactics.[368] Kempenfelt believed that navies won battles by

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[363] Willis, *Struggle for Sea Power,* 224.
[364] Hugh Palliser to Lord Sandwich, October 28, 1778, in Barnes and Owen, *Sandwich,* 2:206.
[365] Rodger, *Command,* 337-8; for more on the Keppel-Palliser Affair see J. H. Broomfield, "The Keppel-Palliser Affair, 1778-1779," *Mariner's Mirror* 47, no. 3 (August 1961): 195-207.
[366] Richard Kempenfelt to Charles Middleton, January 18, 1780, in Hodges and Hughes, *Select Naval Documents,* 162.
[367] Willis, *Struggle for Sea power,* 222.
[368] Richard Kempenfelt to Charles Middleton, April 28, 1779, in Laughton, *Barham,* 1:290; Barnes and Owen, *Sandwich,* 2:197.

maneuvering their fleets more successfully than the enemy. Fleets achieved successful maneuvers when their tactical system laid down how each maneuver should be performed and used. A successful signaling system, in turn, allowed "the whole fleet [to] act together in concert," and execute the maneuver well.[369] As previously discussed, the Royal Navy had a rather loose system of tactics based around the formal and informal doctrine - or unwritten rules.[370] Kempenfelt wanted more; like Howe, he wanted to reduce the significance of the unwritten rules and expand the formal doctrine. Kempenfelt longed for a system where "nothing is left, arbitrarily to the captains, who, without some determined rule known to all, by taking different methods for the execution, would embarrass each other."[371] The French, then, with their many tactical writings served as Kempenfelt's signaling muse.

In one of his copious thought provoking letters to his friend Charles Middleton, Kempenfelt explained,

> I believe you will, with me, think it something surprising that we, who have been so long a famous maritime power, should not yet have established any regular rules for the orderly and expeditious performance of the several evolutions necessary to be made in a fleet. The French have long since set us the example. They have formed a system of tactics, which are studied in their academies and practised [sic] in their squadrons.[372]

Kempenfelt, an astute observer and innovative nautical mind, believed one of the most formidable threats posed by the French navy was their renewed adherence to a set of tactics. He had long admired French contributions to naval tactics. Kempenfelt traveled to France on multiple occasions, becoming a fluent French speaker, but also absorbing the naval advances of Britain's principal foe. When shots rang out at Lexington and Concord in 1775, Kempenfelt wastravelling down the River Loire en route back to England. On his trips, Kempenfelt perused the works of the great French naval tacticians like Hoste, la

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[369] Richard Kempenfelt to Charles Middleton, January 18, 1780, in Laughton, *Barham*, 1:315.
[370] Willis, *Fighting*, 83.
[371] Richard Kempenfelt to Charles Middleton, January 18, 1780, in Laughton, *Barham*, 1:315.
[372] Richard Kempenfelt to Charles Middleton, January 18, 1780, in Laughton, *Barham*, 1:309.

Bourdonnais, and Morogues and came to believe that their systems, heavily influenced by Enlightenment notions of pure mathematics and geometry, presented the key to victory.[373]

After the fallout from the Keppel-Palliser affair, Sandwich ordered Keppel to strike his flag and come ashore. The government now had to find a new commander-in-chief for the Channel Fleet.[374] Sandwich landed on Admiral Sir Charles Hardy, former governor of colonial New York and governor of Greenwich Hospital. The government also had to decide who would hold the post of first captain under Hardy.[375] They desired a captain who would "heal some of the evil that has arisen from this unhappy business [the Keppel-Palliser Affair]," and landed on Kempenfelt.[376] King George III observed that Kempenfelt was "much respected by all parties and one well qualified to heal all little breaches."[377] Kempenfelt, at length, accepted the post at the end of March, 1779.

Kempenfelt's new position imbued him with excellent opportunities to spread his new ideas throughout the fleet. The Channel Fleet was the largest of Britain's fleets and the one which stood the best chance of encountering a large French fleet. Tracing Kempenfelt's exact reforms proves challenging. He seems to have written continuous drafts throughout his time as first captain, however, they show two overwhelming influences - Howe and the French. In a careful examination of the signals and instructions issued during Kempenfelt's time as first captain, Tunstall notes several articles that are worded exactly as some of Howe's previous articles. This was no underhanded plagiarism; the pair appeared to be working together. In September, Howe wrote Kempenfelt directly asking, "I should be glad to know what part of our signals have been adopted."[378] Clearly, the use of the word "our" signifies a working relationship between the two officers.

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[373] Richard Kempenfelt to Charles Middleton, January 18, 1780, in Laughton, *Barham,* 1:315; Rubinstein, *Catastrophe at Spithead,* 47-8.
[374] The choice presented quite a challenge. Naturally, the government wanted someone with talent, but also someone who was in good health and was politically amenable to the government. For more on the implications to admirals' health see Morrow, *British Flag Officers,* 10-13. For an example of the government's political considerations see Officers of Keppel's Fleet, November, 1778, in Fortescue, *Correspondence of George III,* 4:225-7.
[375] The First Captain served under a commander-in-chief in a role akin to chief of staff.
[376] King George III to Lord North, March 9, [1779], in Fortescue, *Correspondence of King George III,* 4:49.
[377] King George III to Lord North, March 9, [1779], in Fortescue, *Correspondence of King George III,* 4:50.
[378] Richard Howe to Richard Kempenfelt, September 10, 1779, in Barrow, *Howe,* 142

Kempenfelt's French influences have already been discussed, but they were laid out even more explicitly by Middleton, who, writing to Lord Sandwich, reported "it was agreed before he left London to introduce the French system, if practicable, into Sir Charles Hardy's fleet."[379] Kempenfelt's reforms, then, benefited from this unique moment, in which Howe had the opportunity to begin reforms, the French had the opportunity to demonstrate the effectiveness (or perceived effectiveness) of their own system, and Kempenfelt, himself, was in a position where he could experiment with different systems.

The web of systems which Kempenfelt experimented with over the course of 1779 and 1780 moved from their conservative origins to become a set of signals which was both distinctive and innovative. The most important aspect of his reforms was that Kempenfelt numbered all the signals consecutively, included compass and astrological tables to direct fleets, and placed a numerary table at the end of the work. The numerary table, especially, is noteworthy. The numerary table allowed the sender to simply signal a number, which aligned to the number of a certain signal in the signal book. The system itself was not exactly novel, but it did represent the first time such a table was used by the main British fleet.[380] Together, though, these reforms exemplified Kempenfelt's pragmatic approach to signaling.

One might expect that given Kempenfelt's passion for innovation and reform, his new role would have brought him joy, but it did not. "My situation is extremely disagreeable; I would give all the little I am worth to be out of it," he wrote in July.[381] While Kempenfelt found Hardy "good-natured" and "honest," he also noted that Hardy only begrudgingly heard his advice and very rarely practiced the fleet in any of the maneuvers, old or new.[382] For Kempenfelt, this practice was crucial, as it allowed the fleet to get to know the system of signals with which they operated, and helped them to become acquainted with their doctrine.[383] "I hear it often said the salvation of Britain depends upon this fleet." Kempenfelt bitterly

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[379] Charles Middleton to Lord Sandwich, July9, 1779, in Barnes and Owen, *Sandwich*, 3:42.
[380] Holland, "Development of Signaling, 8-9; Howe included one in his earlier reforms and la Bourdonnais included such a system in his own work.
[381] Richard Kempenfelt to Charles Middleton, July 2, 1779, in Laughton, *Barham*, 1:292.
[382] Richard Kempenfelt to Charles Middleton, September 19, 1779, in Laughton, *Barham*, 1:298; Richard Kempenfelt to Charles Middleton, August 9, 1779, in Laughton, *Barham*, 1:293-5; Benjamin Thompson to George Germain, July 20, 1779, in W.G. Perrin, ed., "The Letters of Benjamin Thompson to Lord George Germain," in *Naval Miscellany*, vol. 3, Navy Records Society vol. 63, (London: Navy Records Society, 1922), 127-32.
[383] Richard Kempenfelt to Charles Middleton, August 14, 1779, in Laughton, *Barham*, 1:295.

observed, "I never hear the expression but I turn pale and sink. My God, what have your great people done by such an appointment!"[384] In Kempenfelt's mind, the trends of centralization and ideas of enlightenment which helped propel him to reform were being blindly ignored by Hardy. This period of signal reform stands as a reminder that reform was not universally supported or pursued.

Luckily for Kempenfelt - if unluckily for Hardy - the admiral died on May 18, 1780. Hardy's replacement was the seventy-one year old Francis Geary. Geary proved only marginally more accommodating to Kempenfelt, and did, in fact, practice the fleet in maneuvers. One day, while the fleet was at sea, British look-outs spotted what appeared to be an enemy fleet. Kempenfelt sprang into action, using his latest signals, but in the excitement of the moment fumbled the message repeatedly. After some time, Geary approached Kempenfelt, put his hand on his shoulder and said "Now, my dear Kempy, do, for God's sake, do, my dear Kempy, oblige me by throwing your signals overboard, and make that which we all understand -- Bring the enemy to close action!"[385] One might imagine Kempenfelt's emotions as his superior chastised him in such a way while his peers looked on, even if Geary only issued the comment with patronizing good-humor. Thus, Kempenfelt suffered two rather unaccommodating commanders-in-chief. Nevertheless, Kempenfelt's time as first captain gave him an excellent opportunity to begin experimenting, which he might not have otherwise had. Influenced by the trends of centralization that called for better maneuvering and fleet cohesion, as well as Enlightenment ideas professed by French thinkers, Kempenfelt began real signal reforms, which, in 1781 and 1782 began to bear fruit.

The first test of Kempenfelt's instructions came in 1781. In that year, he finally received his long awaited promotion to Rear Admiral and received his own posting. On November 19, he hoisted his flag on HMS *Victory* to take command of a special independent squadron whose mission was to intercept a large French convoy bound for the West Indies. After a dozen days at sea, Kempenfelt stumbled upon the convoy. Taking stock of the situation, he discerned that most of the naval escort had pulled ahead of the merchant ships. Kempenfelt shrewdly calculated that he could maneuver his fleet in such a way as to cut

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[384] Richard Kempenfelt to Charles Middleton, August 6, 1779, in Laughton, *Barham*, 1:293
[385] Quoted in Barrow, *Howe*, 141.

off the valuable merchant ships from most of their escort, led by Luc Urbain du Bouëxic, comte de Guichen. Moving with commendable swiftness, the Kempenfelt bore down upon the convoy capturing fifteen of them, while fighting off the handful of naval ships that remained with the convoy. As the short action unfolded, Kempenfelt began to see more clearly the size of the naval escort in the distance, and wisely judged his much smaller fleet stood little chance if the French could come about. The French admiral with the main body of the escort, however, reacted too slowly to make any difference. The next morning, both fleets formed opposing lines ahead, but the pure size of the French fleet reinforced Kempenfelt's earlier judgement that he could not win against so large a force. With this in mind, he returned to England.[386]

Most policy makers back in Britain expressed a sense of disappointment in Kempenfelt's action - referred to as the Second Battle of Ushant. King George III wrote "Lord Sandwich cannot be surprised at my disappointment in finding Rear-Admiral Kempenfelt has only taken a few of the French convoy, when the account of yesterday led me to expect something more decisive."[387] Like his fellow detractors, the King thought that Kempenfelt should not have returned to port so soon. Others, such as Rodney and Samuel Hood insisted Kempenfelt should have followed de Guichen across the Atlantic to the West Indies to reinforce that station.[388] This ignores the plain fact that during the action itself, Kempenfelt acquitted himself with tactical determination. Kempenfelt's fleet performed their maneuvers with grace, allowing them to snatch up fifteen merchantmen from under the nose of a vastly superior force. The battle comprised a validation of everything that Kempenfelt strove to do. It was, wrote early naval historian J. K. Laughton, "perhaps the most dashing and brilliant feat of the whole war."[389]

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[386] Richard Kempenfelt to Charles Middleton, December 14, 1781, in Laughton, *Barham,* 1:356-7; Log of HMS Victory, December 12 and 13, 1781, in Laughton, *Barham,* 1:358; Rubinstein, *Catastrophe at Spithead,* 75-9; Tunstall, *Naval Warfare,* 153.
[387] King George III to Lord Sandwich, December 18, 1781, in Barnes and Owen, *Sandwich,* 4:77-8.
[388] King George III to Lord Sandwich, December 18, 1781, in Barnes and Owen, *Sandwich,* 4:77-8; Syrett, *Royal Navy in European Waters,* 150.
[389] Quoted in Rubinstein, *Catastrophe at Spithead,* 80.

After his return, Kempenfelt took a leave of absence from the fleet, during which time national and global events shook up the Royal Navy. The autumn of 1781 brought the distressing news of the Battle of the Chesapeake and the British army's surrender at Yorktown, Virginia. After a protracted political struggle, the government fell, and with them went Lord Sandwich.[390] The new Whig government brought in Keppel to serve as First Lord of the Admiralty, who in turn, asked Howe to command the Channel Fleet, with Kempenfelt as his second-in-command.

For the next few months, Howe and Kempenfelt worked in the same fleet. Doubtless, the two compared notes, but it appears that each reformer followed their own course. Howe, for the most part, focused on the careful crafting of instructions to help formulate more of the unwritten rules. For example, Howe's article for a set of 1782 instructions reminds officers that the line ahead should always be formed and maintained in the direction which the commander-in-chief steers. This is a practice that was as familiar to Howe's contemporaries in 1782 as it was to the officers of the navy when Howe joined in 1739, but now it was codified in Howe's instructions.[391] At the same time, Kempenfelt continued to experiment with various systems. Since Howe often dispatched Kempenfelt on tasks protecting trade and gathering intelligence, both reformers could conduct their reform at a safe distance and not interfere with one another's work too much.[392] Indeed, Howe encouraged Kempenfelt to continue his work, writing "While you remain in this service you will establish such signals and instructions for the government of the ships under your orders as you may think fit."[393] As always, Kempenfelt conducted his reforms somewhat frantically, beginning with a literal translation of French signals, then reverting finally to a system akin to what he and Howe had worked with previously.[394] That these two leaders of reform should come together only to pursue their own lines of reform is a reminder that signal reform was a complex

[390] Mackesy, *War for America,* 370-2 and 396-9.
[391] Syrett, *Royal Navy in European Waters,* 156; Instructions Respecting the Order of Battle, 1782, in Corbett, *Signals and Instructions,* 151; Willis, *Fighting,* 88.
[392] Syrett, *Royal Navy in European Waters,* 155.
[393] Holland, "Development of Signaling," 12.
[394] Tunstall, *Naval Warfare,* 154-5.

phenomenon. While each man wanted to create a better system, each believed in a different way to achieve that goal.

In August, 1782, the Royal Navy prepared for the third relief of Gibraltar, which had been under siege by Spanish forces for three years.[395] Then, suddenly, the nation received "melancholy Tidings."[396] On August 29, while undergoing a repair in Spithead, the navy's principal anchorage, Kempenfelt's flagship, HMS *Royal George* foundered and sank.[397] That day, the *Derby Mercury* reported "In Addition to the above unfortunate Event, it is with the greatest Regret we inform our Readers, that the brave Kempenfelt, [and] upwards of 400 Seamen, and 200 Women, perished in her."[398] Kempenfelt's exact location at the time of the disaster remains a matter of controversy; some say he was writing in his cabin and never escaped, others say he drowned after escaping through the cabin's windows.[399] Either way the loss of the admiral, the crew, and the ship was a tragic misfortune for Britain.

Kempenfelt's loss was a blow to signal reform as well. Contemporaries noted Kempenfelt's devotion to the naval profession. The *Manchester Mercury* ran a letter which read "a very old Acquaintance of Admiral Kempenfelt's regrets, in him, the Loss of one of the worthiest of Men, whose Merits were by no Means confined to uncommon Skill in his Profession, by whose goodness of Heart and extensive Knowledge made him dear to his Friends, and esteemed as a Man of Science by the Learned."[400] One officer, who witnessed the tragedy mourned "that brave and meritorious officer Admiral Kempenfelt, a man that has never been surpassed as an able tactician."[401] Kempenfelt, despite constant pleas of ill health, served the Royal Navy during the American war, first as a First Captain (a job which he despised), then as a flag officer - each time experimenting with new systems. While much of what

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[395] Spain declared war on Great Britain in June, 1779. Since that time, the Royal Navy periodically sent convoys to Gibraltar to sustain the British defenders. For more see Willis, *Struggle for Sea power,* 355-64, 426-7, and 468-9.
[396] "Monday Post," *Derby Mercury,* August 29, 1782. British Newspaper Archives.
[397] For more on this event see Rubinstein, *Catastrophe at Spithead,* 85-120.
[398] "Monday Post," *Derby Mercury,* August 29, 1782. British Newspaper Archives.
[399] Rubinstein suggests that he may have died from a stroke or heart attack before the ship even went under, for more on this theory, see Rubinstein, *Catastrophe at Spithead,* 120.
[400] Extract of a Letter from Gosport, August 30," *Manchester Mercury,* September 3, 1782, British Newspaper Archives.
[401] James Anthony Gardner, *Above and Under Hatches: Being Naval Recollections in Shreds and Patches with Strange Reflections,* edited by Christopher Lloyd, (London: Batchworth Press, 1955), 23-4.

Kempenfelt proposed was never adopted by the Royal Navy, this only highlights the complexity of signal reform. There was never the perfect system waiting to be discovered. Men of great intellect and skill approached the same problem, and arrived at solutions which sometimes overlapped, and other times diverged. While Howe's later reforms were adopted in 1790, one has to wonder what system might have emerged had a terrible accident not taken the *Royal George* to the bottom of the sea.

III.

Walter Young had little affinity for the Fighting Instructions and even less for his admiral. Unfortunately for Young, 1780 saw him serving as Rodney's flag captain. That summer, while the fleet lay at anchor off Basseterre on the island of St. Kitts, Charles Middleton sent Young a copy of Kempenfelt's latest signal book to show Rodney.[402] Young wrote to Middleton to let him know that he had received the book and given it to the admiral "with whom they may continue for a length of time, and never be looked at or studied," he noted sourly.[403] While Rodney did not share Kempenfelt's and Howe's approach to signal reform, he still desired to change the system in his own way, highlighting the complexity of signal reform.

Rodney took a rather nuanced view of the problem facing the navy. Howe and Kempenfelt believed the structure of the Fighting Instructions was one of the fundamental problems with the it - hence their various systems and signal books. Rodney, by contrast, believed that the principal problem was the way officers used the instructions and the tactics the old Fighting Instructions favored. He wrote, "The naval instructions want a thorough reformation; but 'tis not in the power of every commander-in-chief to make what additions he pleases."[404] Rodney did not think he had the power to completely alter the system of signals, nor did he necessarily view this as the crux of the problem. Rodney reasoned if his captains

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[402] Walter Young to Charles Middleton, July 24, 1780, in Laughton, *Barham,* 1:69-70;Walter Young to Charles Middleton, July 31, 1780, in Laughton, *Barham,* 1:72;
Ruddock Mackay, and Michael Duffy, *Hawke, Nelson and British Naval Leadership: 1747-1805,* (Woodbridge: Boydell Press, 2009), 132.
[403] Walter Young to Charles Middleton, July 31, 1780, in Laughton, *Barham,* 1:72.
[404] Quoted in Clerk, *An Essay on Naval Tactics,* 16.

obeyed his signals he would be able to direct his line with the utmost precision. Then, wielding this weapon, he could concentrate his forces upon a part of the enemy's line - not the whole line, as the Fighting Instructions often called for.[405]

Duty loomed large in the fleets Rodney commanded, producing what can only be described as a toxic environment. Willis summarizes Rodney's outlook towards duty well when he writes "He had high expectations and no tolerance. His subordinates loathed him and the Admiralty knew that his subordinates loathed him. Rodney reveled in their fear."[406] Rodney had his reasons, though. Soon after coming to his new command as Commander-in-Chief of the Leeward Islands, Rodney noted the complete deterioration of discipline within the fleet and blamed it on the Keppel Palliser Affair. "Discipline in a very great measure is lost," he complained, "and that eager willingness of executing the orders given by the Board of Admiralty, or by those acting under their authority, is turned into neglect; and officers presume to find fault and think, when their duty is implicit obedience."[407] Rodney earnestly believed that when his captains' obeyed his commands without thought he could orchestrate a victory from his quarterdeck. In other words, through their adherence to the rising concept of duty, command of the fleet could be centralized in the hands of the admiral.

The influence of Enlightenment thinkers upon Rodney's work is harder to discern. The evidence Rodney left says little about his thoughts on specific writers. Corbett suggests that Rodney's call to concentrate the fleet's heavy ships on the rear of the enemy line shows the influence of Morogues. Though, Tunstall argues that Morogues only wrote about the virtues of heavy ships versus smaller vessels, "a mere emphasis on the obvious."[408] At the same time, Rodney did spend several years in France while on the run from his English creditors. The idea that Rodney, a life-long sailor, would take no interest in naval developments there seems unlikely. Unfortunately, no evidence to suggest Rodney read the work of Hoste, Morogues, or la Bourdonnais exists one way or the other.

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[405] Tunstall, *Naval Warfare,* 157; Mackay and Duffy, *Naval Leadership,* 131-2.
[406] Willis, *Struggle,* 356.
[407] George Rodney to Lord Sandwich, February 16, 1780, in Barnes and Owen, *Sandwich,* 3:201-2.
[408] Corbett, *Signals and Instructions,* 13-5; Tunstall, *Naval Warfare,* 160.

The only work that historians can say Rodney read for sure is Clerk's *An Inquiry into Naval Tactics* as he returned a copy of the book with annotations to Clerk.[409] The degree to which Clerk's work affected Rodney's reforms, however, is minimized by the fact that Clerk published his work in 1782, by which time Rodney had been in command for almost two years. Rodney does, though, express very similar sentiments to Clerk. Both men believed in concentrating one's forces against a part of the enemy's line. Clerk, specifically, called for admirals to disrupt their opponent's line. Rodney sought to change the way that British fleets engaged the enemy, to do this, though, the Fighting Instructions had to be reformed.[410]

Where Kempenfelt's and Howe's reforms struck at the two facets of the Fighting Instructions - the tactics and the system of signals - Rodney's struck mainly, but not wholly, at the tactics. He set about publishing a vast array of new additional instructions, many of which negated parts of the Fighting Instructions proper.[411] Through these alterations, Rodney sought to reshape the way the navy fought.[412] Rodney's reforms to the signal side of the Fighting Instructions were not so profound, though he did include a signal which allowed all of the ships in his fleet to signal back to him that they did not understand or clearly see the signal he had sent.[413] Additionally, Rodney promulgated a series of new vanes, not unlike a modern wind sock, for distinguishing one ship from another at a distance.[414] Initially, when Rodney came to command in 1779, he distributed his own book of "Signals and Instructions in Addition," which included his own personal additions. "Signals and Instructions in Addition," was not a signal book, though, like that which Howe and Kempenfelt implemented at various points. Rather this book took on the same format as all previous editions of the Fighting Instructions and additional

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[409] John Clerk, *An Essay on Naval Tactics,* 3rd edition, (London: 1827); Tildesley, "Influence of the Theories of John Clerk," 167-8; Clerk's earlier work was titled *An Inquiry into Naval Tactics,* which was published in 1782 The 1824 edition - as well as editions published publicly after the 1782 edition - was entitled *An Essay on Naval Tactics*.
[410] Clerk, *An Inquiry into Naval Tactics,* 10 and 55-62; Clerk, *An Essay on Naval Tactics,* 18.
[411] This wasn't as radical as it seems. Many admirals did such. For an example see Boscawen Additional Instructions, 1759, in Corbett, *Fighting Instructions,* 221.
[412] Tunstall, *Naval Warfare*, 159
[413] Rodney's additional Instructions, 1780, in Corbett, *Signals and Instructions,* 213; One may note that of all the signals that have been discussed in this thesis, very few allow any communication from a captain to the admiral. Almost all of them are from admiral to captain.
[414] Perrin, *British Flags,* 166; Memorandum, January 21, 1782, in Wall, *Lord Rodney*, 2:548.

instructions.[415] Rodney continued to revise his additions while en route to the West Indies, issuing another set when he reached St. Lucia. From here, though, Rodney ceased to issue books at all. Tunstall observes that many officers resorted to the old tradition of making their own signal books to make Rodney's signals and instructions more accessible. Captains had to remain vigilant and keep their books up to date, though. For the next two years, Rodney resorted to issuing new instructions and signals through memos and orders.[416] For instance, on March 22, 1782, Rodney issued a memo containing a series of new signals and instructions calling for either of the fleet's divisions to sail ahead of the main body. Rodney issued these new signals through an order dispatched "To the Flag Officers."[417] Another, dated January 9, 1780, creates a signal and instruction for the navy's new coppered ships to "chase on any point, or quarter of the compass."[418] Rodney understood the challenge that came with this deluge of additional instructions, but he clearly thought his officers could be held to a higher standard.[419]

Rodney's opportunity to experiment with his unique take on the Fighting Instructions came as the result of a long and bitter war. One war was very real, the other metaphorical. The American war became a deeply divisive conflict within Britain itself. Political divisions severely limited Sandwich's ability to pick commanders. Some disapproved of the government's prosecution of the war, others sympathized with the Americans, and few desired to openly take a side by accepting command.[420] Rodney, though, was fortunate in that he hated Americans and was a violent supporter of all things conservative.[421] Rodney was still in a metaphorical financial war with his debtors, though. The generous French nobleman, the duc de Biron, offered Rodney some money while he was in France on the run from his debtors, but it did not

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[415] Rodney's Additional Articles, 1779, in Corbett, *Signals and Instructions,* 209-213; Tunstall, *Naval Warfare*, 158.
[416] Tunstall, *Naval Warfare*, 158-9;
[417] Additional Signals By Day, March 22, 1782, in Wall, *Lord Rodney*, 2:626.
[418] Additional Signals, January 9, 1780, in Syrett, *Rodney*, 2:306.
[419] In December, 1779, Rodney wrote to his second-in-command ordering him to replace the "sheet of additional signals" given out to the merchantmen with something that would not "perplex" them. See George Rodney to Hyde Parker, December 17, 1779, in Syrett, *Rodney*, 2:291.
[420] Syrett, *Rodney*, 2:233; J. H. Broomfield, "The Keppel-Pallliser Affair, 1778-1779," *Mariner's Mirror* 47, no. 3 (August 1961): 206-7; Rubinstein, *Catastrophe at Spithead*, 63; Rodger, *Command*, 339-40.
[421] George Rodney to John Clevland, September 7, 1749, in Syrett, 1:139; Syrett, *Rodney*, 2:234-5.

solve all his problems.[422] Rodney still faced accusation of falsifying accounts in his previous commands. Now, though, Sandwich desperately needed someone to take command of the West Indies station and he knew Rodney had served in that capacity during the Seven Years' War. Almost magically, the Navy Board cleared Rodney's falsified accounts. He took up command, on the condition that he take along the loyal minions of Charles Middleton that they might ensure the admiral stayed on his best behavior.[423] With his new command assured, Rodney could now begin to reshape the Fighting Instructions and bring about the victory he very much craved.

The crux of Rodney's system lay in duty. This is best exemplified by Rodney's conduct at the Battle of Martinique (1780). In April of 1780, Rodney arrived in the Caribbean with reinforcements from Britain. He soon discovered that de Guichen, too, had lately arrived. Finding the French fleet anchored near Martinique, Rodney began a blockade. Under the cover of darkness, the French escaped, but they did not make it far before the British discovered their disappearance. Intercepting the French a short way from Martinique, Rodney sought to put his new theories to work.[424]

The French fleet had twenty-two ships and Rodney twenty-one. Rodney ordered his flag lieutenant to fly the signal for article seventy-four of his additional instructions, and two flags broke out over his ship: a blue and yellow flag above a white pennant. Flipping through their various memos, orders, or signal books, the officers of the fleet would have seen that the signal denoted that Rodney meant to make an attack upon the enemy's rear.[425] The wording of the article said nothing about how Rodney wanted this to happen. As Tunstall explains "It was no more than a signal of intention, requiring further signals to give it effect."[426] The captains understood what he wanted but not how he wanted it done. To make matters worse, Rodney hoisted this signal along with the signal for each ship to engage her

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[422] George Rodney to Henrietta Rodney, April 11, 1778, in Syrett, *Rodney,* 2: 226; George Rodney to duc de Biron, May 5, 1778, in Syrett, *Rodney,* 2: 226; George Rodney to duc de Biron, [undated], in Syrett, *Rodney,* 2: 227; George Rodney to duc de Biron, July 2, 1778, in Syrett, *Rodney,* 2: 228.
[423] Walter Young was one such officer.
[424] Willis, *Struggle for Sea Power,* 370; Rodger, *Command,* 345.
[425] Rodney's Additional Articles, 1780, in Corbett, *Signals and Instructions,* 230.
[426] Tunstall, *Naval Warfare,* 165.

opposite number, which would normally mean the British line would run the length of the French and each ship would fight one opponent in the opposite line. Rodney's plan collapsed, and the battle devolved into a hesitant, confused brawl.[427]

Rodney's reaction exemplifies both his approach to signal reform and the trends which helped influence it. Immediately after the battle, he launched into a veritable inquisition of the fleet. Observing that one of his subordinate flag officers, Rear Admiral Joshua Rowley made a move that he did not sanction, Rodney demanded an explanation. "It is a duty Sir I owe to my sovereign, who has entrusted me with this great and important command, to desire such explanation."[428] Rowley shot back that he had taken the action because "I conceived it my duty," which Rodney seems to have ignored as Rowley sent a message to Rodney demanding to know whether or not Rodney deemed his explanations sufficient.[429] Others, too, suffered the wrath of Rodney's new call to duty, such as Captain Nathaniel Bateman. The moment the action concluded, Rodney issued an order for Bateman's arrest, much to Bateman's surprise.[430] Rodney believed that officers like Bateman and Rowley neglected their duty. Their "misconduct appeared too manifest and notorious to be overlooked having with my own eyes beheld their gross neglect of my orders, and inattention to my signals..."[431] In Rodney's mind, his plan could have worked had these men only done their duty to obey his signals.

The American War of Independence offered reformers ample opportunity to reform the Fighting Instructions and bring about real signal reform. Each of the reformers took a different approach to the various flaws they saw in the Fighting Instructions, whether that be the lack of signal books, new tactical maneuvers, or the way officers reacted to signals. Howe took advantage of a colonial rebellion across the sea to try a novel system of signals, which as it turned out, worked fairly well. Kempenfelt, ever the

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[427] Rodger, *Command,* 345.
[428] George Rodney to Joshua Rowley, April 18, 1780, in Syrett, *Rodney,* 2:456.
[429] Joshua Rowley to George Rodney, April 20, 1780, in Syrett, *Rodney,* 2:459; Joshua Rowley to George Rodney, May 4, 1780, in Syrett, *Rodney,* 2:488.
[430] George Rodney to Thomas Taylor, April 18, 1780, in Syrett, *Rodney,* 2:456-7; Nathaniel Bateman to George Rodney, April 29, 1780, in Syrett, *Rodney,* 2:459.
[431] George Rodney to Philip Stephens, July 13, 1780, in Syrett, *Rodney,* 2:621.

innovator, experimented fiendishly with diverse systems, flags, and maneuvers. Rodney's chance came when the government had no one else to turn to, but once safely ensconced within his position of commander-in-chief launched into a vigorous revision of the Fighting Instructions, accompanied by a truly centralized system of leadership and communication. Running through each of these very disparate characters are the common themes and influences of their wide-ranging military experience, centralization, and the enlightenment. Here, in the face of a world war, a sharply divided navy, and an often hostile government, the reformers ploughed a way forward to what they believed was the answer to the question of the Fighting Instructions, not necessarily due to their own innate genius, but as representatives of greater trends within the British navy and Europe itself.

Conclusion

Admiral Sir Charles Hardy stood upon the quarterdeck of HMS *Victory* and with him stood his trusty, if jaded, first captain, Richard Kempenfelt. Hardy ordered Kempenfelt to hoist the signal to bring the fleet into a line ahead. This he did, sending a blue and white flag all the way up the mizzenmast, and half way below that a Dutch flag with a red flag immediately below it. To everyone's confusion the nearest ship, the *Royal George*, as fate would have it, backed her sails and prepared to lower a boat. Kempenfelt quickly ordered a nearby cutter to sail over and instruct the *Royal George* to get to her station. In the meantime, both he and Hardy retreated to his cabin where they perused their Fighting Instructions, to see if there had been a mistake. At length, an officer entered and informed the two gentlemen of what the quarterdeck had recently discovered: Kempenfelt used the wrong signal. Rather than signal the fleet into the line ahead, he had instructed the center division of the Channel Fleet to send a boat with their weekly returns to the flagship.[432] "It was curious to see the stifled grin of the lieutenant as he gave these to Capt. Kempenfelt, and the spiteful manner in which the latter snatched them out of his hand," remembered one observer.[433] Signals reform was not straightforward or glorious.

This thesis shows that a gradual shift within the ethos of the British Royal Navy's officer corps before and during the American Revolution led to an unprecedented and complex period of signal reform. Older histories paint a picture of the navy's sea officers wallowing in a tactical dark age of apathy and banality.[434] As chapter two shows, sea officers did not resent change, nor did they consider the Fighting Instructions detrimental to the service. On the whole, naval officers did not oppose reforms for dogmatically conservative reasons. Rather, they opposed reforms that they believed would limit their rights as Englishmen and submit them to unjustifiable tyranny. Some officers, in fact, led the charge for reforms in the Royal Navy, like Vernon and Anson. These two, the most reform-minded officers of their

[432] Benjamin Thompson to George Germain, July 20, 1779, in Perrin, "Letters of Benjamin Thompson," 127-132
[433] Benjamin Thompson to George Germain, July 20, 1779, in Perrin, "Letters of Benjamin Thompson," 131
[434] Willis, *Fighting,* 2-3 and 198; Weigley, *Age of Battles,* 146 and 198; Holland, "The Development of Signaling in the Royal Navy," 8; Hannay, *Hood,* xxxvii-xxxviii; Corbett, *Fighting Instructions,* 283.

generation, did not seek to reform the Fighting Instructions. Instead, they crafted new additional instructions that, while important to the history of naval tactics, did not necessarily alter the way the navy used Fighting Instructions, nor the way the signaling system functioned. Moreover, the copious examples of signals and instructions created by commanders for joint army-navy operations shows that the ability to craft these signals was not confined to officers like Vernon and Anson. An analysis of the writings and transcripts of the most controversial naval actions of the early to mid-eighteenth century shows that no one blamed the Fighting Instructions directly. Taking the above factors into account, one can see that the officers did not oppose reform on principle and did not identify the Fighting Instructions as the principal factor in their naval defeats.

The Fighting Instructions had many flaws; however, the flaws of the system were well known to contemporaries. Not being complacent, succeeding generations of naval officers endeavored to make the Fighting Instructions easier to use. They incorporated additional instructions, which added a vital degree of flexibility to the Fighting Instructions as a whole. The unwritten rules provided a body of knowledge which helped to limit the situations in which signals were necessary. Officers throughout the navy crafted or purchased their own copies of signal books, which displayed the information within the Fighting Instructions in a more approachable and effective manner, rendering the system easier to use and lessening calls for reform.

As chapter one describes, the Royal Navy was not an organization that was innately conservative, nor one that spurned all reform. Sea officers undertook reforms and crafted their own signals. The fact that they did not try to undertake wholesale reform of the Fighting Instructions indicates it was not a cause of pressing importance. Partially, this was due to the fact that sea officers took actions to make the Fighting Instructions easier to use. Thus, on the eve of the American War of Independence, one finds that the officer corps was not necessarily rearing for reform, as older histories suggest, but was split along a vague line: on one side stood those who saw no problem with the Fighting Instructions as they existed,

and on the other, those who were influenced by trends within the Royal Navy and Great Britain at large, which promised a new way of communication at sea.

The fact that concepts and tools like the unwritten rules and signal books made the Fighting Instructions less odious meant that calls for reform were not as strong. Over the course of the century, though, a specific set of social and institutional circumstances helped to inspire and sustain signal reform. Reformers like Howe, Rodney, and Kempenfelt all drew from extensive naval experience over the course of three wars. Rodney and Howe both commanded two separate expeditions that required them to create their own signals and exposed them to the process of making new signals, and the challenges that arose from the Fighting Instructions. Similarly, unlike most officers, the reformers experienced fleet battles, a surprisingly rare event, that exposed them to how the Fighting Instructions worked in action.

Throughout their careers, the reformers were inspired by certain trends that shifted the ethos of the officer corps, and which they, in turn, sought to use to help them reform the Fighting Instructions. The first of these, centralization, was born out of concerns over the decay of British society. The Authoritarian Whigs supported this notion most strongly, and when they entered government took the opportunity to enact reforms in the navy creating a more structured hierarchy to counteract the decay. Future signal reformers generally supported centralization. Howe, for instance, incorporated new instructions and standing orders to strengthen regulation in his vessels, and Rodney came to see the danger in the unwritten rules when his fellow captain abandoned him to a fleet of French ships. The reformers later utilized the outcome of the Authoritarian Whigs' reforms to help craft new signaling systems. Simultaneously, the navy witnessed a rise in the concept of duty, at the expense of the concept of honor. Whereas honor required officers to do whatever they deemed necessary to maintain it, duty-bound officers were expected to act in the best interest of the service, while also reinforcing the need to obey one's superior. Together, these shifts in the ethos of the officer corps inspired reformers to craft new systems.

The second shift, came in the form of an influx of Enlightenment concepts. For the most part, Enlightenment beliefs originated from influential French texts. The authors of the texts, such as Hoste, based their work on enlightenment ideas of pure mathematics and rationalization. Since so few British authors wrote on the subject of naval tactics, sea officers came to rely on translations of French works, until the publication of John Clerk of Eldin's famous volume, *An Enquiry into Naval Tactics.* Reformers, especially Kempenfelt, incorporated Enlightenment concepts in their signaling systems. Together these influences – unique naval experience, centralization, and Enlightenment influences – helped to inspire a handful of reformers to improve the Fighting Instructions.

The unique circumstances of the American War of Independence offered the conditions for the reformers to undertake signal reform. The signal reformers used their naval experience, the shift towards centralization, and the influence of Enlightenment ideas to create their new systems. The American War of Independence offered an opportunity to implement their ideas. Howe, taking advantage of the exceptional type of war in America, arrived with a new set of signals. Kempenfelt utilized his position as First Captain to experiment at length with several systems, and Rodney took advantage of the dearth of acceptable admirals to obtain a posting as Commander-in-Chief of the Leeward Islands station. Each of their systems reflected the shift in the ethos of the officer corps and reflected their own view of what exactly the navy needed in order to communicate and fight effectively. Signal reform was not the result of the unique genius of a small band of reformers who miraculously implemented long established claims that the Fighting Instructions were flawed. Rather, gradual shifts within the British Royal Navy's officer corps before and during the American Revolution led to an unprecedented, complex period of signal reform.

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