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“The Soul’s Right Hand”: Command and Control in the Age of Fighting Sail, 1652–1827



Michael A. Palmer

DURING the last half of the seventeenth century, European navies, beginning with the English in 1653, embraced the single line ahead as their standard fighting formation. The adoption of the line brought many enhancements and changes to the fleet. Because warships arrayed in a file had a clear line of fire for their guns, fighting power improved (at least in the short term); the ships of the battle line became heavier and more standardized in their design and capability; impressed merchant vessels gradually disappeared from the fleet, and with them their civilian masters, thereby enhancing the professionalism of the officer corps; and the fleet became more ordered in its formations and movements. But there was a price to pay for these improvements: for the adoption of the line ahead exacerbated the already difficult task of commanding a fleet in battle.

Since the 1890s, when authors such as Alfred Thayer Mahan and P. H. Colomb examined the age of fighting sail (which I here define as that era of naval warfare that began in 1652 with the First Anglo-Dutch War and ended in 1827 with the battle of Navarino during the Greek War of Independence), historians and other analysts have concentrated on two related factors—doctrine, or what the English navy came to call its “Fighting Instructions,” and tactics.¹ Both have been the focus of

1. Alfred Thayer Mahan, *The Influence of Sea Power upon History, 1660–1783* (Boston: Little Brown and Company, 1913); P. H. Colomb, *Naval Warfare: Its Ruling Principles and Practice Historically Treated*, 2d ed. (London: W. H. Allen & Co., Limited, 1895).

repeated historical criticism. In 1911, the French naval writer and strategist Raoul Castex was among the first to link the indecisiveness of eighteenth-century naval warfare to tactical and doctrinal developments—namely the adoption of the line ahead and the first Fighting Instructions—that occurred in the final decades of the preceding century.² In the late 1940s, Michael Lewis, one of Great Britain's premier naval historians, wrote disparagingly of "the Law—the parallel, coterminous, inviolable Line," that caused "the spell of failure or, at least, strictly limited success" that handicapped England's Royal Navy for a century.³ Most recently, the eminent American military historian Russell F. Weigley, in *The Age of Battles*, wrote of the "stultifying sanctity of the line ahead."⁴

This focus on tactics and the fighting instructions was misplaced, for such factors, while related, were secondary to the fundamental problem of command and control.⁵ Quite obviously, in the absence of any effective means to control a fleet in battle, no tactical formation could insure victory, for the line ahead, while it maximized order and fire power, was unmanageable in the extreme and difficult to wield offensively, akin to using yarn as a pointer. Nor could any single set of doctrinal formulations hope to anticipate the myriad possibilities of naval warfare.

An examination of the command and control techniques employed throughout the age of fighting sail reveals that the difficulties that plagued commanders insured that naval battles were rarely (though, I would argue, no more rarely than they were ashore) decisive; and that the main factor that prevented Great Britain's Royal Navy (on which this essay will focus) from reaping the fullest reward from its many qualitative advantages was neither poor tactics nor inadequate doctrine, but a rejection at the tactical level of the proven decentralized approach to

2. Raoul Castex, *Les Idées Militaires de la Marine du XVIII^{ème} siècle, De Ruyter à Suffren* (Paris: L. Fournier, 1911), 9–28.

3. Michael Lewis, *The Navy of Britain: A Historical Portrait* (London: George Allen and Unwin, Ltd., 1948), 481–82.

4. Russell F. Weigley, *The Age of Battles: The Quest for Decisive Warfare from Breitenfeld to Waterloo* (Bloomington: Indiana University Press, 1991), 221.

5. Command, more specifically command and control (C²), is a relatively modern term, although the functions it defines are as old as conflict itself. For the purpose of this study, I have followed the official United States Department of Defense definition:

The exercise of authority and direction by a properly designated commander over assigned forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.

See United States Department of Defense, *Dictionary of Military and Associated Terms* (Washington: GPO, 1989), 77.

command and control that, of necessity, the Admiralty employed at the strategic and operational levels.⁶ The “rationalism” of the seventeenth and eighteenth centuries strengthened, in a very counterproductive fashion, this tendency to embrace centralization.



The English naval commanders who first embraced the line ahead discovered that the use of the formation, while it enhanced order and ensured effective firepower, vastly complicated the direction of the fleet in battle. Controlling the movements of the English and Dutch fleets under the old non-linear tactical system had been relatively simple. When a commander changed course, the ships of his squadron did likewise, and the subordinate commanders of the other squadrons followed suit, to be mimicked, in turn, by their subordinates. Controlling the movements of a large body of ships arrayed in a line posed seemingly insurmountable challenges. How could the fleet commander communicate his intentions to his subordinates directing the van and rear divisions? How could the commanders of the van and rear control their own formations? The prospect of having admirals lead their lines into battle involved enormous risk, note Horatio Nelson’s fate at Trafalgar. Nor were there any assurances that the enemy would always be generous enough to materialize before the van, and not the rear of one’s line.⁷

6. Heretofore, only one broad, theoretical work has examined the history of the problems inherent in command and control—Martin van Creveld’s *Command in War*. Van Creveld argues that while uncertainty, as a constant, cannot be eliminated even by the most up-to-date technological advances, commanders have the option to shift its burden throughout the hierarchy of command. By centralizing control, a commander can achieve greater certainty at the highest level of command—his own—but thereby increases the uncertainty in the lower echelons where subordinates, denied initiative, often are left undirected. Decentralized systems accept greater uncertainty at the top, where commanders may be left out of touch with events, but increase certainty at the nether levels of command. Van Creveld concludes:

A point to be noted is that these remarks seem to apply to all periods . . . and therefore appear to be independent of any specific stage of technological development. Nor, it is suggested, will their relevance be reduced in the future. So long as command systems remain imperfect—and imperfect they must remain until there is nothing left to command—both ways of coping with uncertainty will remain open to commanders at all levels. If twenty-five centuries of historical experience are any guide, the second way [decentralization] will be superior to the first.

See Martin van Creveld, *Command in War* (Cambridge, Mass.: Harvard University Press, 1985), 274.

7. Despite these risks, Admiral Sir Edward Spragge, commander of the English rear at the second battle of Schooneveldt in the Third Anglo-Dutch War, believed that division commanders had to lead their lines because inexperienced captains could

The physical extent of the battlefield also posed peculiar problems. A fleet of a hundred ships, even if arrayed in the old group formation, covered a good deal of ocean. Those same ships arranged in a line could easily extend beyond the visible horizon. In good weather, English captains were expected to keep at least a half-cable's length—304 feet—behind the ship they followed. This distance combined with the length of the typical ship—another hundred feet or more—meant that battle-lines extended for seven and eight miles, assuming, of course, both good weather and good order.⁸ Unless visibility was excellent (and in the English Channel and North Sea visibility was rarely so), an admiral in the center of such an extended line would be unable to see either end. As Admiral Sir Edward Spragge noted in his journal after second Schooneveldt in 1673: “the line-of-battle . . . is so very long that I cannot see any sign the General Admiral makes.”⁹

To the problems of controlling one's own fleet must be added the question of an opponent's behavior. The line ahead developed during the First Anglo-Dutch War as a defensive formation to fend off the group *melée* attacks of the Hollanders. But by the end of the century, all the major European fleets had embraced the line. Opposing fleets now fought in symmetrically arrayed, defensive-oriented formations—hardly a formula for decision.

How were naval commanders to wield their unwieldy formations in an offensive fashion? European admirals possessed few tools that offered the prospect of effective fleet control in battle. There were three options: the adoption of visual signaling systems, a return to earlier tactical methods based on group attacks, or reliance on doctrine.

Visual signaling systems were primitive at the end of the seventeenth century. Flag hoist systems were in their infancy and despite continued advances, would remain so until the middle of the eighteenth century.

not be expected to make the proper tactical decision when maneuver became necessary. Quoted in Brian Tunstall, *Naval Warfare in the Age of Sail: The Evolution of Fighting Tactics, 1650–1815*, ed. Nicholas Tracy (Annapolis, Md.: Naval Institute Press, 1990), 36.

8. According to an eyewitness account, the English and Dutch lines at the battle of Lowestoft (June 1665) extended for five leagues, about fifteen nautical miles. See Granville Penn, *Memorials of the Professional Life and Times of Sir William Penn, Knt.: Admiral and General of the Fleet, during the Interregnum; Admiral, and Commissioner of the Admiralty and the Navy, after the Restoration, 1644–1670*, 2 vols. (London: James Duncan, 1833), 2: 350.

9. Tunstall, *Naval Warfare in the Age of Sail*, 36. During the eighteenth century, fleets became smaller, but the ships became larger and visibility remained a persistent problem. Normal order placed large ships-of-the-line two cable-lengths apart, or one cable-length in close order. Maximum visibility for signal flags was about four miles, in good weather.

During the course of the Anglo-Dutch wars, English admirals increasingly employed doctrine-reliant linear tactics, although on occasion commanders reverted (or retrogressed) to old-style group tactics. Some historians, most notably Michael Lewis and Sir Julian Corbett, characterized these recalcitrant commanders as members of a distinct “school” of “*meléists*” who rejected the notion of the “*formalists*” that a coherent system of linear tactics and doctrine was the key to victory.¹⁰ But, as Brian Tunstall’s more detailed and analytic study of the development of English naval tactics demonstrates, departures from the line marked less any organized resistance to “*formalist*” doctrine, than the recurring inability of a still professionalizing service to operate large fleets in unwieldy line-ahead formations.¹¹

Moreover, an examination of the results of the battles of the Anglo-Dutch wars does not support the view that adherence to “*formalism*” lessened the fighting effectiveness of the English fleet—quite the opposite. The English navy performed better and won more battles fighting in a line than it did with group *melée* tactics. Why else would the service have saddled itself with a system that so taxed the ability of commanders to control their fleets? And why else would the other navies that fought at various times alongside or against the English—namely the Dutch and French—have adopted the English system for their own navies? As Admiral Sir William Penn remarked to Samuel Pepys after the only fleet engagement the English lost during the Second Anglo-Dutch War—the Four Days battle of June 1666 in which the English departed from their line and the Dutch for the first time fought in one—“That we must fight in a line, whereas we fight promiscuously, to our utter and demonstrable ruine—the Dutch [*sic*] fighting otherwise—and we, whenever we beat them.”¹²

Thus as the seventeenth century closed, the major European navies increasingly relied on the line ahead and prearranged instructions—doctrine. Experienced commanders, or “the admiralty,” drew up sets of

10. Lewis, *The Navy of Britain*, 455–533; Julian S. Corbett, ed., *Fighting Instructions, 1530–1816* (London: Navy Records Society, 1905), 133–45.

11. Tunstall, *Naval Warfare in the Age of Sail*, 23.

12. Samuel Pepys diary entry, 4 July 1666, Robert Latham and William Matthews, eds., *The Diary of Samuel Pepys*, 9 vols. (Berkeley and Los Angeles: University of California Press, 1970–76), 7: 193–95. Latham and Matthews comment in a note that the English did, in fact, fight in a line at the Four Days battle and that the Dutch did not. But the Dutch did fight in the line while the English fleet was extremely disordered, so much so that perhaps it seemed to Penn that the fleet had not fought in its usual order. For the adoption of the line ahead by the Dutch, see R. E. J. Weber, “The Introduction of the Single Line Ahead as a Battle Formation by the Dutch, 1665–1666,” *Mariner’s Mirror* 73 (February 1987): 5–19.

rules explaining how admirals and their subordinates should act in given situations.¹³

From the end of the seventeenth century until the last quarter of the eighteenth, doctrine, increasingly refined and developed, remained central to the command of the fleet in battle. The Royal Navy's Fighting Instructions are the best known examples. But doctrine was not dogma. As Brian Tunstall and John Creswell have shown, the quasi-official doctrine published by the English (or, after 1707, the British) Admiralty could be, and usually was, modified and improved upon by commanders of individual fleets. Admirals, most of whom were intent on improving the means by which they sought to control their fleets in battle, frequently interpreted doctrine in their own fashion.¹⁴



By the 1730s the paucity of not just decisive, but even major, victories had become apparent to many officers in the British and French navies, despite more than a half-century of continued doctrinal and tactical development. The French began to devise more effective signaling systems. Many British officers sought continued improvement of the Fighting Instructions. But there were also a handful of senior Royal Navy commanders who became decentralizers—individuals (I would not term them a “school”) who, somewhat hesitantly, accepted the fact that their tactical conundra could not be solved by improved doctrine, signals, or tactics. What set these individuals apart was not their gradual embrace of the *melée*, but their approach to command and control.

A decentralized philosophy of command and control was not foreign to Great Britain's navy. At the strategic and operational levels, the Royal Navy performed brilliantly, and this despite the near total inability of the Admiralty to micromanage the movements of its fleets in distant seas. When the Admiralty dispatched its squadrons to the West Indies, the Indian Ocean, North American waters, the Mediterranean, or even the English Channel, commanders sailed with the most general instructions only. Given the distances involved—it could take weeks or months to send dispatches to such stations—there was no choice (until the invention of the telegraph in the nineteenth century) but to rely on the initiative and judgment of individual fleet commanders. Why not apply this same principal at the tactical level?

13. For a discussion of the development of naval doctrine see James J. Tritton and Luigi Donolo, eds., *A Doctrine Reader: The Navies of the United States, Great Britain, France, Italy, and Spain* (Newport, R.I.: Naval War College, 1995).

14. John Creswell, *British Admirals of the Eighteenth Century: Tactics in Battle* (Hamden, Conn.: Archon Books, 1972), 29; Tunstall, *Naval Warfare in the Age of Sail*, 65–66.

Admiral Edward Vernon spent a great deal of time thinking, and writing, about the myriad problems—from manning to morale—facing naval officers.¹⁵ Vernon, who believed that his fellow officers gave far too little time to the study of tactics, issued to his subordinates a variety of well thought out additional Fighting Instructions and signals.¹⁶

Vernon was far from a formalist in his tactical approach. “All formality therefore as matters are circumstanced only tends to keep the main point out of question,” he wrote, “and to give knaves and fools an opportunity to justify themselves on the credit of jargon and nonsense.”¹⁷

Vernon was a decentralizer. He doubted that commanders in chief could control their fleets in battle. His instructions illustrated his willingness to place ever greater trust in the initiative of his subordinates. In one set of additional instructions issued in 1739 to the captains of his fire-ships, he noted that since he was “apprehensive” about the likelihood that they would be able “to discern such signals through the cloud of smoke we may then be in, I principally rely upon your prudence and resolution in observing where such services lie open for your execution.”¹⁸ Vernon also directed that, in the event of an engagement against a smaller force, several of his ships would form a reserve. “[A]s it is morally impossible to fix any general rules to occurrences that must be regulated from the weather and the enemy’s disposition,” Vernon wrote, “this is left to the respective Captain’s judgement that shall be ordered out of line to govern himself by, as becomes an officer of prudence and resolution, and as he will answer the contrary at his peril.”¹⁹

Another British commander who adopted a more decentralized approach was Vice Admiral George Anson. Named to replace Vernon as commander of the Western Squadron in July 1746, the aggressive Anson eagerly sought battle with the French in an effort to erase the stigma of

15. Douglas Ford, *Admiral Vernon and the Navy: A Memoir and Vindication* (London: T. Fisher Unwin, 1907).

16. Tunstall, *Naval Warfare in the Age of Sail*, 79–82; Corbett, *Fighting Instructions*, 205–7, 214–16; and B. McL. Ranft, ed., *The Vernon Papers* (London: Navy Records Society, 1958).

17. Quoted in Tunstall, *Naval Warfare in the Age of Sail*, 80.

18. Ranft, *Vernon Papers*, 295. Nicholas Tracy, who edited and completed Tunstall’s *Naval Warfare in the Age of Sail*, 82–83, quotes this passage from one of Vernon’s instructions, citing Ranft, but does not mention that it was directed to the captains of the fire-ships attached to the fleet. As such, Vernon’s instruction did not involve vessels that normally would fight in the line of battle. The same is true for the ships of the reserve that were, like the fire-ships, to be removed from the line in battle.

19. Ranft, *Vernon Papers*, 290–91, 302.

Toulon.²⁰ He routinely drilled and exercised his fleet. Tactically, Anson, who as a young lieutenant fought at Cape Passero in 1718, was, like Sir George Byng, a commander willing to depart the line given the proper conditions.²¹

On 3 May 1747 off Cape Finisterre, Anson's squadron of sixteen ships, including six of the line and fourteen men-of-war mounting over 50 guns (totaling 938 guns), encountered a weaker French squadron of fifteen warships, including only four mounting over 50 guns (totaling 552 guns), escorting a convoy of thirty-eight merchantmen. Anson used the "general chase" to bring his fleet more quickly into contact with the enemy, but when the British reformed their battle line and the French ran, Anson resumed the chase and trusted to the initiative of his captains. His faith was not misplaced: his subordinates ran down the entire French squadron and eighteen merchantmen.²²

It is easy to overlook the importance of the battle, given Anson's overwhelming superiority.²³ But he realized this preponderance of force as the result of operational excellence and British conceptions of decentralized command, not by accident. The Admiralty's instructions charged the Western Squadron with myriad responsibilities: the protection of the channel, the blockade of Brest, and the interception of any French detachments or convoys sailing from any of the Biscay ports to the Americas, the Mediterranean, or the Far East. Faced with such burdens, a commander of lesser caliber might well have dispersed his fleet

20. S. W. C. Pack, *Admiral Lord Anson: The Story of Anson's Voyage and Naval Events of His Day* (London: Cassell, 1960), 153. The Western Squadron's principal responsibilities were the control of the English Channel, and the blockade of the main French Atlantic fleet at Brest. Admiral Thomas Matthew's failure effectively to engage and defeat a Franco-Spanish fleet off Toulon in February 1744 led to an orgy of political and professional recriminations that culminated in thirteen courts-martial and brought an end to the careers of the commanding admiral and four of his captains.

21. In 1718 off Cape Passero, the southeastern tip of Sicily, Admiral Sir George Byng, commanding Great Britain's Mediterranean fleet, intercepted an outnumbered and woefully disordered Spanish force. Rather than take the time to form his own fleet into a formal line of battle, Byng ordered an immediate "General Chase," a signal reserved for the pursuit of a beaten and fleeing enemy. Byng's captains made quick work of the Spaniards and won a resounding victory. For a recent account of the battle, see John B. Hattendorf, "Byng: Passaro, 1718," in Eric Grove, ed., *Great Battles of the Royal Navy, as Commemorated in the Gunroom, Britannia Royal Naval College, Dartmouth* (Annapolis, Md.: Naval Institute Press, 1994).

22. For accounts of the action off Cape Finisterre, see *ibid.*, 158–61; Lewis, *The Navy of Britain*, 523–24; Mahan, *Influence of Sea Power*, 271; Herbert Richmond, *The Navy in the War of 1739–1748*, 3 vols. (Cambridge: Cambridge University Press, 1920), 3: 86–94; Tunstall, *Naval Warfare in the Age of Sail*, 92–96; and G. Lacour-Gayet, *La Marine Militaire de la France sous Le Règne de Louis XV*, 2d ed. (Paris: Librairie Ancienne Honoré Champion, Éditeur, 1910), 179–84.

23. See, for example, Mahan, *Influence of Sea Power*, 271.

from Ushant to Cape Finisterre, as the admiralty’s instructions clearly permitted. But Anson, on his own initiative, kept the bulk of his force concentrated, and applied his strength at the right place and at the right time. Historians ought not to belittle the tactical accomplishments of a commander who, through his operational adroitness, brought superior force to bear upon the enemy. Moreover, while Anson held a decided advantage of about two-to-one in weight-of-metal, his innovative tactics, empowered by a decentralized method of command and control, allowed him to convert that superiority into a crushing victory, unlike many other similarly situated naval commanders. At Barfleur in 1692, for example, the Anglo-Dutch fleet outnumbered the French by more than two-to-one, but failed to capture a single ship.²⁴ Moreover, because of Anson’s prebattle efforts, his fleet had achieved a level of tactical proficiency so high that his commanders were not confused by their admiral’s somewhat unconventional tactics. The captains of Anson’s fleet had a fair idea of what he had in mind on the morning of 3 May.

Indeed, Anson, either immediately before or shortly after the battle, produced a set of additional Fighting Instructions that incorporated the refinements introduced by earlier commanders, such as Vernon, and, in the event of an engagement against a smaller enemy force, “codified Byng’s tactics at Cape Passero.”²⁵ On 14 October 1747, armed with a copy of Anson’s instructions, Rear Admiral Edward Hawke intercepted yet another well-escorted French convoy off Cape Finisterre.

Like Anson, Hawke faced the difficult problem of covering the channel and the bay between Ushant and Finisterre with a modicum of force. The temptations to divide the squadron were great, as were the strains of maintaining the ships constantly on station and ready for battle. But Hawke was determined to hold in hand a concentrated force strong enough to avoid defeat should the main French fleet sortie, and powerful enough, not just to meet, but to overwhelm any French escorting squadron he might intercept along the convoy routes.

On the morning of 14 October Hawke’s efforts and vigilance were rewarded. Off Cape Finisterre, lookouts sighted a large convoy. The French escorting squadron consisted of eight ships mounting 538 guns. Hawke’s fleet was larger, fifteen ships, mounting just under 1,000 cannon. But his superiority was less marked than had been Anson’s in May. Individually, the French ships-of-the-line were larger and more heavily armed than Hawke’s men-of-war. The British could easily find them-

24. Richmond, *The Navy in the War of 1739–1748*, 3: 82–86.

25. Tunstall, *Naval Warfare in the Age of Sail*, 97–98. The additional instructions were issued either in 1746 or 1747. See also Ruddock F. Mackay, *Admiral Hawke* (Oxford: Clarendon Press, 1965), 56–57.

selves outgunned in a close action, though it was to close action that Hawke wished to bring his fleet.

As had Anson at First Finisterre, Hawke made the signal for a general chase to close the range as quickly as possible. He then directed the fleet into a line ahead on the port tack, with the British parallel, but somewhat behind the French squadron. But, unlike First Finisterre, the French, holding the wind gauge with their heavier ships, did not break and run but formed their own line and awaited the British attack. Hawke, despite the fact that his quarry had not yet “run” as required by the Fighting Instructions, made the signal for general chase. His captains began to work their way along the leeward side of the rear of the French line, engaging the enemy ships as they passed. At least two of Hawke’s captains, on their own initiative, clawed their way to windward and ran down the opposite side of the French line, doubling the rearmost ships. By nightfall, all but two of the French men-of-war had been taken, although the convoy, including a sixty-four-gun East Indiaman, escaped.²⁶



During the Seven Years’ War the trend toward the decentralization of command functions initiated by Vernon evolved further.²⁷ Both Anson and Hawke continued their efforts begun during the War of Austrian Succession. Anson, who in 1758 commanded the Channel Fleet, issued additional instructions, one of which warned his subordinates that in the midst of an engagement he might “haul down the signal for the Line of Battle,” in which event every captain was to “use his utmost endeavours to take or destroy such Ships of the enemy, as they may be opposed to, by engaging them as close as possible, and pursuing them if they are driven out of their Line.”²⁸ Hawke, who replaced Byng in the Mediterranean in July 1756, adopted a similar approach to command and control. After taking over the squadron, he addressed his senior captains, among them

26. For Second Finisterre, see Richmond, *The Navy in the War of 1739–1748*, 3: 101–11; Mackay, *Hawke*, 69–88; Tunstall, *Naval Warfare in the Age of Sail*, 98–99; Mahan, *Influence of Sea Power*, 272–73. Hawke promptly dispatched a frigate to the Caribbean to warn of the convoy’s arrival. British warships intercepted the convoy off Martinique and took forty prizes. See Richmond, *The Navy in the War of 1739–1748*, 3: 111. Mackay, *Hawke*, 85.

27. Brian Tunstall wrote in his *Naval Warfare in the Age of Sail* that “the Seven Years’ War produced surprisingly little tactical development.” This was true with regard to tactics, narrowly defined, but not with regard to the continued development of decentralized approaches to command and control. See Tunstall, *Naval Warfare in the Age of Sail*, 104.

28. Quoted in *ibid.*, 106.

Augustus Hervey, who recalled: “Then [Hawke] made us a fine speech that he was determined to run close up to [the French], and that the honour of our country required we should do our very utmost to destroy these ships and he did not doubt that we should, with a great deal of all this sort of stuff.”²⁹ The following year, Hawke formalized his ideas for close action. He issued an additional instruction, crossing out the old Article XIII for engaging the enemy in the prescribed linear order of battle, and instead instructed his subordinates to engage the enemy “as close as possible” and not to fire until within “pistol shot” range.³⁰

In May 1759 Hawke succeeded Anson in command of the Channel Fleet and went further yet. In an additional instruction Hawke informed his captains that after leading the fleet into action at fairly close range, he would make the signal to engage and then “haul down the Signal for the Line,” at which point his subordinates were to engage the nearest enemy ship, as closely as possible, sink or destroy it, then move on, “as you shall judge most necessary, to join the closest battle at hand.”³¹ As Brian Tunstall noted, the admiral’s alterations of the “permanent” instructions were not the actions of an apostate. Hawke first altered Article XIII when Admiral Edward Boscawen, one of the Lords of the Admiralty, was serving as second-in-command of the fleet; Hawke’s second alteration occurred at a time when he assumed that Anson, another Lord of the Admiralty, would soon arrive and take command.³² As Ruddock Mackay, Hawke’s biographer, wrote: “it can hardly be doubted that the amended form of Article XIII had been approved by the Admiralty.”³³

Historians have been quick to note that Hawke was not a great tactical innovator. He did not pen great naval tracts replete with diagrams of formations for attack and retreat. Nor did he develop magnificently organized, and illustrated, signal books. Hawke was, quite simply, a command innovator who increased the fighting power of his fleet by rejecting centralization. He won battles by combining his belief in British tactical superiority at close range with an inclination to depart the line ahead and, most importantly, a willingness to share his tactical conceptions with his subordinates. “Hawke’s captains had developed such a

29. Augustus Hervey, *Augustus Hervey’s Journal: Being the Intimate Account of the Life of a Captain in the Royal Navy Ashore and Afloat, 1746–1759*, ed. David Erskine, 2d ed. (London: William Kimber, 1954), 220.

30. Mackay, *Hawke*, 180–81. Pistol-shot range was fifty yards or less.

31. Samuel Barrington, *The Barrington Papers: Selected from the Letters and Papers of Admiral the Hon. Samuel Barrington*, ed. D. Bonner-Smith, 2 vols. (London: Navy Records Society, 1937–41), 1: 259–60.

32. Quoted in Tunstall, *Naval Warfare in the Age of Sail*, 106.

33. Mackay, *Hawke*, 182, 201.

highly aggressive spirit throughout the long blockade,” Tunstall wrote, “that they did not require special signals to urge them on.”³⁴

Hawke is best known for his great victory at Quiberon Bay on 20 November 1759, a battle which, along with Edward Boscawen’s earlier triumph at Lagos Bay, insured that the British could complete their conquest of Canada without fear of intervention. As French naval historian G. Lacour-Gayet wrote, Quiberon Bay was “the tomb of the French navy during the reign of Louis XV.”³⁵ As Hawke’s biographer noted, that the admiral failed to secure for himself a place in the pantheon of naval heroes alongside Horatio Nelson may have been the result of little more than “the failure of any French admiral to stand up to him in an unambiguous fashion.”³⁶



Toward the end of the Seven Years’ War there transpired one of the great enigmas in the history of naval warfare: Great Britain’s victorious Royal Navy turned its back on the decentralized command approaches of Admirals Vernon, Anson, and Hawke, and embraced the highly centralized visual signaling systems pioneered by the oft-defeated French.

The French had long led European navies in the development of a rational, “scientific,” if rather unsuccessful, approach to naval warfare. The key figure in this evolution was Anne Hilarion de Cotentin, comte de Tourville, who “did for the French navy, and ultimately for all navies, what *maréchal* Jean Martinet did for the army.”³⁷

In May 1689, Tourville issued printed Sailing and Fighting Instructions to the commanders of his fleet. Tactically, the instructions broke little new ground. Tourville completely embraced the English concept of the line ahead and the subdivision of the fleet into van, center, and rear.

34. Tunstall, *Naval Warfare in the Age of Sail*, 117.

35. Lacour-Gayet, *La Marine Militaire de la France sous Le Règne de Louis XV*, 365.

36. Mackay, *Hawke*, 181–82. Quiberon Bay was not a “decisive” victory, in that the bulk of the French fleet survived the battle. The French lost seven ships—two sunk, one captured, and four wrecked. Hawke had two ships wrecked. British casualties totaled between 300 and 400; those of the French about 2,500. But during the course of their campaign, including their losses at Lagos and Quiberon, the French lost a dozen ships-of-the-line. Moreover, Hawke’s triumph ended the immediate prospect of an invasion of England and rendered the French fleet hors de combat for the next year. *Ibid.*, 252.

37. Tunstall, *Naval Warfare in the Age of Sail*, 48. See also Geoffrey Symcox, *The Crisis of French Sea Power, 1688–1697: From the Guerre d’Escadre to the Guerre de Course* (The Hague: Martinus Nijhoff, 1974), 55–67; and J. Delabre, *Tourville et la Marine de Son Temps: Notes, Lettres et Documents, 1642–1701* (Paris: Librairie Militaire de L. Baudoin et Cie., 1889).

Doctrine, and a handful of still primitive signals, remained the principal means to control the fleet in battle. But Tourville’s instructions were the most comprehensive yet issued. English sailing instructions did not rival Tourville’s for comprehensiveness for another ninety years.³⁸

Tourville also directed the Jesuit priest Paul Hoste to write a treatise on naval warfare. Hoste, in his capacity as sometime chaplain, had served in French flagships since the Dutch wars. He had witnessed first-hand many of the greatest naval clashes of his day, including those of the Second and Third Anglo-Dutch Wars and the War of the League of Augsburg.

Hoste published his *L’Art des Armées Navales ou Traité des Evolutions Navales* in 1697.³⁹ He drew his lessons from the history of the last half-century, often from his own observations and the experiences of senior French commanders, such as Tourville, to develop a comprehensive overview of naval warfare.⁴⁰ Hoste’s work addressed the tactical advances of the English, Dutch, Spanish, and French fleets. He provided definitions of naval terms and discussed what he viewed as the principles of naval warfare. His illustrated treatise covered different formations for sailing and fighting, orders of battle, fleet organization, movement, anchoring, and a variety of combat tactics including doubling and breaking an enemy’s line. Hoste advocated not only line ahead tactics, but also the idea of restricting the line to powerful men-of-war, or what were becoming known as ships of the line.⁴¹

While there was little that was revolutionary about Hoste’s work, his was the first treatise on then-modern naval warfare, written at a time when other academics, including military specialists, were beginning to apply scientific principles and rationalist concepts to the world’s complex problems. Hoste, despite, or perhaps because of, his Jesuit training, personified the rational ideal: use of history combined with personal experience and observation, and the application of a scientific method.

38. Tunstall, *Naval Warfare in the Age of Sail*, 48.

39. The full title was, in the fashion of the time, *L’Art des Armées Navales ou Traité des Evolutions Navales, Qui Contient des Règles Utiles aux Officiers Généraux, et Particuliers d’une Armée Navale; avec des Exemples Itez de Ce Qui S’est Passé de Considérable sur la Mer depuis Cinquante Ans*. With the publication of Hoste’s work, naval tactics, in Brian Tunstall’s view, began to become “a science.” Tunstall, *Naval Warfare in the Age of Sail*, chapter two title.

40. Hoste’s work is often cited, for example by Mahan, as a primary source for accounts of the battles of the Anglo-Dutch Wars.

41. For discussion of Hoste’s work, see Corbett, *The Fighting Instructions*, 179–85; Tunstall, *Naval Warfare in the Age of Sail*, 59–64; and S. S. and Mary L. Robison, *A History of Naval Tactics from 1530 to 1930: The Evolution of Tactical Maxims* (Annapolis, Md.: Naval Institute Press, 1942), 215–24. The Robisons provide fairly extensive excerpts from Hoste’s book, but Tunstall’s discussion is the more pertinent.

As Brian Tunstall wrote of Hoste: “[he] declared that without evolutions, fleets were like barbarians who waged war without knowledge and without order, everything depending on caprice and chance.”⁴²

Hoste was one of many seventeenth-century writers wrestling with the problems of what Michael Roberts termed “the military revolution.”⁴³ Azar Gat, in his study, *The Origins of Military Thought from the Enlightenment to Clausewitz*, noted that these authors based their work on “the accumulated strata of the doctrine of natural law, the neoclassical search for rules and principles in the arts, and Cartesianism, which together had dominated Louis XIV’s France, stressing that reality was subject to universal order and to the mastery of reason.”⁴⁴

While Tourville’s comprehensive instructions for the fleet and Hoste’s treatises on warfare at sea and ship construction placed the French in the forefront of naval science and professionalism, the question remains: why did the French navy remain so ineffective during the eighteenth century?⁴⁵ The Royal Navy, despite its generally “irrational” and unscientific character, was effective, or at least effective enough to win victory after victory.⁴⁶

The answer lies with the ideal of Rationalism itself, and with its assumptions about the degree of relevance of scientific methods to the behavior of human beings. As finite creatures, humans, even rational,

42. Tunstall, *Naval Warfare in the Age of Sail*, 59.

43. See Michael Roberts, *The Military Revolution, 1560–1660* (Belfast: Marjory Boyd, 1956); Geoffrey Parker, *The Military Revolution* (Cambridge: Cambridge University Press, 1989), 1–2, 20–23; and Clifford J. Rogers et al., eds., *The Military Revolution Debate: Readings on the Military Transformation of Early Modern Europe* (Boulder, Colo.: Westview Press, 1995). Geoffrey Symcox, in his research in French military records, discovered several other French naval works written and published in the late seventeenth century, including a short handbook published by Tourville himself in 1693. See Symcox, *The Crisis in French Sea Power*, 66n.

44. Azar Gat, *The Origins of Military Thought from the Enlightenment to Clausewitz* (Oxford: Clarendon Press, 1989), 26. While it is true that Hoste’s was the only such work to deal with naval matters, historians of this era, as well as the eighteenth century when there were many more works published on naval subjects, routinely ignore naval authors and, unintentionally to be sure, give the impression that no such treatises existed. For example, Gat’s excellent work makes no mention of naval writers. Likewise, Russell F. Weigley, in his *The Age of Battles*, commits a generous amount of space to the discussion of naval matters, but fails to mention the work of Hoste or later naval theoreticians, whereas writers on land warfare figure prominently.

45. See Castex, *Les Idées Militaires de la Marine du XVIII^{ème} siècle*, 98, for a critical discussion of the “assuredly curious” paradox presented by the “well intentioned,” but ultimately unsuccessful, attempts of the French to reform their navy.

46. For Carl von Clausewitz’s refusal to view war as a “science,” see *On War*, trans. and ed. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1984), Book 2, chapter 3.

enlightened humans, face what Jacob Bronowski termed "the crucial paradox of knowledge."

Year by year we devise more precise instruments with which to observe nature with more fineness. And when we look at the observations, we are discomfited to see that they are still fuzzy, and we feel that they are as uncertain as ever. We seem to be running after a goal which lurches away from us to infinity every time we come within sight of it.⁴⁷

Despite the seemingly evident shortcomings of the French approach to naval science, so obvious in the fate of their navy during the first six decades of the eighteenth century, senior Royal Navy commanders looked increasingly to things Gallic for the answers to the dilemmas posed by battle. French naval manuals and, most especially, visual signaling systems, most attracted Royal Navy officers.

Naval historians have generally viewed this British infatuation with French naval works as evidence of the maturation and professionalization of the Royal Navy's officer corps.⁴⁸ And rightly so, in a sense. As Royal Navy Captain Richard Kempenfelt wrote in 1780:

I shall conclude by observing what an extraordinary genius prevailed amongst the French . . . to push up everything to the summit of perfection. . . . I say they had no sooner effected this prodigy of forming a navy without the apparent requisites, than they had the quickness of discernment immediately to see (what we have never been able to see yet) the great advantage that would result in sea fights from a system of naval tactics. . . . They judiciously perceived that military tactics might be adapted to naval tactics in the arrangement and evolutions of fleets. They set to work about it, and completed it so well as to exhaust the subject, and so were as astonishingly rapid in perfecting the disciplines and manoeuvres of a fleet as they were in forming one.⁴⁹

But as the British adopted a more scientific and professional system of naval warfare, they also embraced a far more centralized approach to the problems of command and control, moreover one that marked a clear break with the British strategic and operational heritage, as well as the successful decentralized initiatives pursued by Vernon, Anson, and Hawke.⁵⁰ As Kempenfelt wrote Sir Charles Middleton in January 1780:

47. Jacob Bronowski, *The Ascent of Man* (Boston: Little, Brown and Company, 1973), 356.

48. Tunstall, *Naval Warfare in the Age of Sail*, 123–34.

49. John Knox Laughton, ed., *The Letters and Papers of Charles, Lord Barham*, 3 vols. (London: Navy Records Society, 1907–11), 1: 309–13.

50. There is also great irony to be discovered in the fact that the most successful of the French admirals of the 1778–83 war—Pierre-André de Suffren—adopted many of what might be considered British methods. In *Admiral Satan: The Life and Cam-*

Fleets, as well as armies, require rules to direct their several motions. In the movement of a fleet to perform any evolution, the way of doing it with most regularity, facility and expedition, is to be preferred; and tactics lay down rules for this purpose, by which every ship knows what they have to do when any evolution by signal is ordered, by which the whole of the fleet act together in concert, to the same end, by the same method; *and 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.⁵¹

In the three decades following 1763, British printers translated and published numerous French texts, including those of Father Hoste; Mahé de la Bourdonnais, a pioneer in the development of numerary signaling systems; Sébastien François de Bigot, vicomte de Morogues; Jean François de Cheyron, chevalier du Pavillon; and Jacques Bourdé de Villehuet.⁵² As the Royal Navy's commanders digested these imported works, they began to experiment with, and ultimately to adopt, modified versions of the numerary signaling systems preferred by the French.⁵³

Kempenfelt and Admiral Richard Lord Howe were in the forefront of this transition. The former personally translated some of the works of Mahé de la Bourdonnais and by the time of Kempenfelt's death in 1782, "seems to have become convinced that the best immediate course for the Royal Navy was to copy the French system of signals."⁵⁴ Howe—ironically, one of Hawke's favorites, a skilled, veteran commander who

paigns of Suffren (London: I. B. Tauris Publishers, 1994), 258–61, Roderick Cavaliero dismissed the idea that Suffren had a major impact on English commanders, most notably Nelson. Cavaliero wrote: "the most significant characteristic of Suffren's short and climatic period of command was its Englishness." *Ibid.*, 260.

51. *Ibid.*, 309. My emphasis.

52. Tunstall, *Naval Warfare in the Age of Sail*, 123–25. For example, David Steel, *A System of Naval Tactics; Combining the Established Theory with General Practice, and the Particulars with the Present Practices of the British Navy* (London: David Steel, 1797), includes translated selections from the works of both Morogues and Bourdé de Villehuet.

53. Early signaling systems linked individual flags, differentiated by placement, to individual responses. For example, a green flag at the mizzen peak indicated that the fleet was to weigh, whereas the same flag at the fore peak might indicate that the fleet was to close its order. Obviously, as the number of signals grew, the requisite number of flags grew as well, until the British by the late eighteenth century were using as many as forty to fifty flags. Numerary systems used a basic set of ten flags, each of which represented a number from 0 to 9. Hoisting the three flags for 2, 7, and 5 indicated #275 in the signal book. Thus ten flags could display a thousand signals. There were also additional flags used in the set as repeaters and designators, but the numerary system could convey far more information with half, or fewer, flags than older, more cumbersome systems.

54. Tunstall, *Naval Warfare in the Age of Sail*, 151–53.

had fought at Quiberon Bay—also became convinced that, armed with French-style signals, he could control—manage—a fleet in battle. When he took command of the *North America* station in July 1776, Howe introduced a new signal book that Brian Tunstall termed “one of the most important documents in the whole history of naval tactics.”⁵⁵ As a result of these developments, the signal book, and with it an extremely centralized approach to command and control, began to displace the Fighting Instructions, though still unofficially, and to dominate British naval tactics.

This willingness to embrace the French method did not yield immediate rewards. As then Captain John Jervis wrote after the battle of Ushant in 1778: “two fleets of equal force can never produce decisive events, unless they are equally determined to fight it out, or the commander-in-chief of one of them *bitches* it so as to misconduct his line.”⁵⁶

In an effort to provide better control, several admirals attempted to command their fleets from fast frigates not shrouded by the smoke and confusion that reigned along the line of battle.⁵⁷ As Lord Howe’s fleet jockeyed for position with a French force off Rhode Island in August 1778, the admiral shifted his flag temporarily to the frigate *Apollo*. Unfortunately for Howe, a gale struck before the fleets engaged. In a 19 April 1780 battle with the French in the West Indies, Sir George Brydges Rodney, frustrated in an earlier engagement by his inability to control his fleet, tried the Howe method, with the approbation of King George III.⁵⁸ While Rodney had an excellent view of his own fleet, he found himself ill-positioned to monitor or respond to the movements of the French. Amidst the confusion, Rodney drove his first captain—a proto-chief of staff—to distraction with ill-suited directions.⁵⁹ Off Cuddalore on 20 June 1783, at the direction of King Louis XVI, French Admiral Pierre-André de Suffren managed the battle from the frigate *Cléopâtre* and won a narrow victory.⁶⁰ But as Suffren’s biographer noted, the admiral “was bitterly disappointed not to be in the thick of it and the *Cléopâtre* ran up

55. *Ibid.*, 129.

56. Quoted in Jedediah Stephens Tucker, *Memoirs of Admiral the Right Honourable the Earl of St. Vincent*, 2 vols. (London: R. Bentley, 1844), 1: 67–68.

57. Geoffrey M. Bennett, “The Fleet-Flagship: A Problem of Naval Command,” *Journal of the Royal United Service Institute* 81 (August 1936): 601–11; *ibid.* (November 1936): 761–69 [603–10].

58. G. R. Barnes and J. H. Owens, eds., *The Private Papers of John, Earl of Sandwich, First Lord of the Admiralty, 1771–1782*, 4 vols. (London: Navy Records Society, 1932–38), 3: 212–13.

59. Laughton, ed., *Letters and Papers of Charles, Lord Barham*, 1: 61–62.

60. G. Lacour-Gayet, *La Marine Militaire de la France sous Le Règne de Louis XVI* (Paris: Librairie Spéciale pour l’Histoire de la France et de ses Anciennes Provinces, 1905), 541–42.

and down the French line helplessly. She had no signals to make—for there was only one: to engage at pistol-shot range.”⁶¹ Suffren declared that despite his success, the effort to control the fleet from a frigate would be “la première et dernière fois.”⁶²

There was some degree of irony in the fact that it was Rodney, firmly positioned on the quarterdeck of his flagship, who won the most spectacular British naval victory of the war at the Saintes in April 1782 and not the more “scientific” Howe or Kempenfelt. Rodney, one of “the most inflexible and unreceptive of contemporary tacticians,”⁶³ relied on a signaling system that was archaic by Lord Howe’s standards. Rodney was also widely viewed by many of his Royal Navy contemporaries as a fortunate commander who owed his great triumph less to his cunning than to a fortuitous shift in the direction of the wind.

Perhaps for these reasons, Rodney’s success did little to offset the influence of Howe and Kempenfelt. Most, though by no means all, British admirals remained convinced of the efficacy of the French approach and sought solutions to the dilemmas faced in battle through the development and application of ever more sophisticated visual signaling systems. This trend continued into the wars of the French Revolution and Empire. Lord Howe’s improved signal book of 1790 became the official signal manual of the Royal Navy in 1799 and would, with alteration, remain in force well beyond the defeat of Napoleon I.⁶⁴



But not all Royal Navy officers were satisfied with the new directions, nor their fruits, or lack thereof. Rodney’s victory at the Saintes stimulated decades of debate about the nature of the victory, and what might have been achieved had Rodney controlled his subordinates less, not more closely. Sir Samuel Hood, who commanded Lord Rodney’s rear division at the Saintes, believed that immediate pursuit would have completed the triumph and led to taking twenty, rather than six ships. But Rodney, when pressed to pursue, responded: “Come, we have done very handsomely as it is.”⁶⁵

Hood’s disappointments were seconded by then-Captain William Cornwallis. He wrote of the Saintes: “I do not suppose that such an opportunity ever offer’d of destroying so large a naval force, and partic-

61. Cavaliero, *Admiral Satan*, 235.

62. Bennett, “The Fleet-Flagship,” 609.

63. Tunstall, *Naval Warfare in the Age of Sail*, 157.

64. *Ibid.*, 194.

65. David Hannay, ed., *Letters Written by Sir Samuel Hood (Viscount Hood) in 1781–82–83* (London: Navy Records Society, 1895), 101–9.

ularly if it had been followed up at first. . . . I believe there never was a piece of success less talk’d about by those concern’d.”⁶⁶

These remarks represent more than simple postbattle grumbling by the disaffected, for Hood was the patron, and Cornwallis the good friend, of a young captain who missed the fighting off the Saintes—Horatio Nelson. The lessons Nelson drew from the battle were clear enough. He considered not Rodney or Howe, but Hood “the greatest Sea-officer I ever knew,” and wrote Cornwallis in 1804:

I imbibed from you certain sentiments which have greatly assisted me in my Naval career—That we could always beat a Frenchman if we fought him long enough; that the difficulty of getting at them was oftentimes more people’s own fancy than from the difficulty of the undertaking; that people did not know what they could do until they tried, and that it was always to err on the right side to fight.

I was then at that time of life to make the impression which has never been shaken. But, on the score of fighting, I believe, my dear friend, that you have had your full share, and in obtaining the greatest victory [the Saintes], if it had been followed up, that your Country ever saw.⁶⁷

The course of the war that began in 1793 reinforced these views. Lord Howe’s 1794 victory at the Glorious First of June made little impression on Nelson, who in one letter referred disparagingly to “a Lord Howe’s Victory, take a part and retire into Port.”⁶⁸ Nelson’s own experiences of battle came in the Mediterranean, where he served first under Admiral Hood, then under Vice Admiral William Hotham, and later Admiral Sir John Jervis. Hotham’s lack of aggressiveness frustrated Nelson. In a March 1795 battle with the French, Nelson made one of only two captures and pressed Hotham to pursue. The latter replied, as had Rodney at the Saintes: “We must be contented, we have done very well.” But Nelson was not contented. “Sure I am,” he wrote, “had I commanded our Fleet . . . that either the whole French Fleet would have graced my triumph, or I should have been in a confounded scrape.”⁶⁹ As for Jervis,

66. Cornwallis’s undated account of the Saintes in George Cornwallis-West, *The Life and Letters of Admiral Cornwallis* (London: R. Holden & Co., Ltd., 1924), 118–27.

67. John Leyland, ed., *Dispatches and Letters Relating to the Blockade of Brest, 1803–1805* (London: Navy Records Society, 1899–1902), 1: xvi.

68. Nicholas Harris Nicolas, ed., *The Dispatches and Letters of Vice Admiral Lord Viscount Nelson*, 7 vols. (London: H. Colburn, 1845), 1: 494–95. While Howe in the 1790s remained committed to his beloved system of signals, he was much more willing to allow his subordinates some degree of initiative and was gradually moving away from the rigid centralized control he and Kempenfelt had argued for during the American war.

69. *Ibid.*, 2: 25–27, and 40–41 respectively.

while Nelson respected Sir John, the inability of that able commander to control his fourteen ships at the critical point of the St. Valentine's Day 1797 battle called into question the very notion of centralized command and control.⁷⁰

When Nelson found himself in command of his own squadron he rejected the idea that a commander could control his fleet in combat.⁷¹ To Nelson, those who saw the signal book as the means by which engagements could be managed were chasing a chimera. He acknowledged the value of sophisticated signaling systems for the fleet under sail, but he believed that in battle signals would "either be misunderstood, or, if waited for, very probably, from various causes, be impossible for the commander-in-chief to make."⁷² He wrote in 1799: "The circumstances of this war so often vary, that an Officer has almost every moment to consider—What would my superiors direct, did they know what is passing under my nose?"⁷³

Sailing in pursuit of the French in the Mediterranean in 1798, whenever the weather permitted, Nelson ordered his captains to the *Vanguard*—the flagship. There his "Band of Brothers" became acquainted with his tactics and plans. When the British finally discovered the French at anchor in Aboukir Bay, Nelson immediately made the signal to attack. Captain Edward Berry noted that the method employed had been one of several "formed two months before an opportunity presented itself of executing any of them, and the advantage now was, that they were familiar to the understanding of every Captain in the Fleet." Nelson's captains received no signals, they "could ascertain with precision what were the ideas and intentions of their Commander, without the aid of any further instructions; by which means signals became almost unnecessary."⁷⁴ They fought and won a great victory in the dark. Captain Thomas Foley, on his own initiative, led the line inshore of the anchored French fleet.⁷⁵ The example of the battle of the Nile astonished Earl Howe, the father of the signaling system then in use. "It stood unparal-

70. For a command and control analysis of the battle of Cape St. Vincent, see M. A. J. Palmer, "Sir John's Victory: The Battle of Cape St Vincent Reconsidered," *Mariner's Mirror* 77 (February 1991): 31–46.

71. For a discussion of Nelson's approach to command and control, see Michael A. Palmer, "Lord Nelson: Master of Command," *Naval War College Review* 41 (Winter 1988): 105–16.

72. See Nelson's 1803 tactical memorandum in Corbett, *Fighting Instructions*, 313–16.

73. Nicolas, *Dispatches*, 4: 90–91.

74. Captain Edward Berry's narrative, in Nicolas, *Dispatches*, 3: 48–56.

75. T. Sturges Jackson, ed., *Logs of the Great Sea Fights, 1794–1805*, 2 vols. (London: Navy Records Society, 1899–1900), 2: 3–4, 14–26; and Nicolas, *Dispatches*, 3: 473–74.

leed, and singular in this instance,” he remarked, “that every captain distinguished himself,”⁷⁶ and without reliance on Howe’s cherished signal book.

Nelson, of course, earned for himself great glory, a peerage, the affections of Emma Hamilton, and a reputation among historians as the best battle commander in the annals of naval history. But why was Nelson able not only to reject the signaling catholicon of the day, but also, and more importantly, to entrust his professional fate to his subordinates?

The answer, I believe, rests with Nelson’s religiosity and, its inverse, his rejection, by default, of the Rationalism of the day. Nelson, simply put, was not a very rational or enlightened fellow by late-eighteenth century standards. As C. S. Forester pointed out in his analysis of Nelson’s letters: “he seems to have remained quite untouched by any of the fashionable fads of irreligion.”⁷⁷ Nelson had faith.

Nelson’s biographers routinely begin their studies by pointing out the obvious: Horatio was, after all, the son, brother, and grandson of Anglican priests.⁷⁸ He was no stranger to religion—to belief. Forester concluded: “Throughout the correspondence there runs a strong religious sentiment, of whose sincerity we can have no doubt.” And there was, of course, Nelson’s well-known religious experience. Horatio, then aged seventeen, was returning from the Indies in the *Dolphin* frigate, weakened by fever, and, according to his first biographer, “reduced to a mere skeleton.” Nelson himself later recalled:

I felt impressed with the idea that I should never rise in my profession. My mind was staggered with a view of the difficulties I had to surmount, and the little interest I possessed. I could discover no means of reaching the object of my ambitions. After a long and gloomy reverie, in which I almost wished myself overboard, a sudden glow of patriotism was kindled within me, and presented my king and country as my patron. My mind exulted in the idea. “Well, then” I exclaimed, “I will be a hero, and, confiding in Providence, I will brave every danger.”⁷⁹

76. Nelson’s note of Berry’s reported conversation with Howe, in Howe to Nelson, 3 October 1798, *ibid.*, 84.

77. C. S. Forester, *Lord Nelson* (Indianapolis: Bobbs-Merrill Co., 1926), 16.

78. For a sampling of Nelson biographies, see also Oliver Warner, *Victory: The Life of Lord Nelson* (Boston: Little, Brown and Co., 1958); Tom Pocock, *Horatio Nelson* (New York: Alfred A. Knopf, 1958); David and Stephen Howarth, *Lord Nelson: The Immortal Memory* (New York: Viking, 1989); Carola Oman, *Nelson* (London: Hodder and Stoughton, 1947); Christopher Hibbert, *Nelson: A Personal History* (New York: Addison-Wesley Publishing Co., 1994).

79. James Stanier Clarke and John M’Arthur, *The Life and Services of Horatio Viscount Nelson: From His Lordship’s Manuscripts*, 2d ed., 3 vols. (London: Fisher, Son, & Co., 1840), 1: 23–24.

There then appeared in Nelson's "mind's eye . . . a radiant orb . . . which urged him on to renown."⁸⁰ As Christopher Hibbert wrote: "Nelson experienced a sudden transformation of feeling such as that which overwhelmed St. Paul on the road to Damascus."⁸¹

But while Nelson continued to follow, and to see this symbolic "orb" throughout his career, historians, after they discuss his youth and the incident on the *Dolphin*, pay scant attention to religion. And for good reason: what role could faith play in the formulation of tactics? None. But, if one perceives not tactics, but a willingness to trust one's subordinates as the key to Nelson's facility for command, then this receptivity toward a fundamental belief structure can help to explain Nelson's approach to command and control. After all, if Nelson truly believed that he was destined to succeed, so, too, were his subordinates!

Nelson throughout his life—and not just until the end of the first chapter of his biography—remained the son of the rector of Burnham Thorpe in an age in which men sought to wrench order from chaos and to replace beliefs with understandings. Nelson rejected these newfangled approaches and sought, instead, communion with his subordinates. In 1798, before the Nile campaign, Nelson wrote the Society for Promoting Christian Knowledge requesting Bibles and prayer books for his crews.⁸² Nineteen-year-old seaman George Charles Smith, who fought under Nelson at the battle of Copenhagen in April 1801 and who later founded the London Mariner's Church, noted: "We gloried . . . that we followed in the wake of Nelson, as the only Jesus Christ or Saviour we acknowledge in the fleet."⁸³ Nelson's own famous letter to Lady Hamilton is replete with religious overtones and imagery. His description of his meeting with his subordinates in his flagship—the *Victory*—before Trafalgar, has more in common with Christ's Last Supper than with a traditional council of war. "When I came to explain to them the '*Nelson Touch*,' it was like an electric shock," Nelson wrote. "Some shed tears, all approved—'It was new—it was singular—it was simple!'" As Nelson spoke, if he is to be believed, some of the captains cried. "And from Admirals downward, it was repeated—'It must succeed, if ever they will allow us to get at them! You are, my Lord, surrounded by friends whom you inspire with confidence.' Some may be Judas's," Nelson admitted, in keeping with the Last Supper

80. Ibid., 24.

81. Hibbert, *Nelson*, 15.

82. Gerald Jordan, "Admiral Nelson as Popular Hero: The Nation and the Navy, 1795–1805," in Department of History, U.S. Naval Academy, eds., *New Aspects of Naval History: Selected Papers from the 5th Naval History Symposium* (Baltimore, Md.: Nautical and Aviation Publishing Company of America, 1985), 109–19 (112).

83. Quoted in *ibid.*, 112.

symbology, "but the majority are certainly much pleased with my commanding them."⁸⁴

More important, once Nelson recognized and accepted his inability to control his fleet in battle, he was free "to let loose the dogs of war." While others sought to bring order to the chaos of battle, Nelson sought to bring chaos to the order of battle. In his quest for victory, he was willing to forego not only the linearity of his fleet and of his decision making, but also to embrace chaos, even the bedlam of a night action. Where others saw only disorder, the "pell mell," or the "promiscuous battle," Nelson saw a disparate form of harmony. In battle Nelson hoped to "surprise and confound" his enemies. "They won't know what I am about," he told a friend before Trafalgar, "it will bring forward a pell-mell battle, and that is what I want."⁸⁵ Or as he wrote Lord Howe after the Nile: "I had the happiness to command a Band of Brothers; therefore, night was to my advantage. Each knew his duty, and I was sure each would feel for a French ship."⁸⁶

Nelson's philosophy of command had much in common with the underlying assumptions of the newly emerging science of chaos.⁸⁷ James Gleick, whose book popularized the theory, wrote that while patterns of chaos forecasting are inexact, they nevertheless remain within bounds, what he termed "an orderly disorder."⁸⁸ Nelson, while he sought disorder in battle, strove to contain it within the confines of the personal tactical doctrine he imparted to his subordinates—what he termed the "Nelson Touch." "On occasion," he wrote shortly before the April 1801 battle of Copenhagen, "we must sometimes have a regular confusion, and that apparent confusion must be the most regular method which could be pursued on the occasion."⁸⁹ In another odd parallel, one theoretician explained to Gleick how the concepts of chaos and non-linearity hit the scientific community in the 1980s "like an electric shock," the very term Nelson used to describe the impact of the Nelson Touch to Emma Hamilton.⁹⁰

84. Nicolas, *Dispatches*, 7: 60–61.

85. Nelson-Keats conversation, in *ibid.*, 7: 241n.

86. *Ibid.*, 3: 230–31.

87. Douglas Hofstadter, in an effort to explain how the study of disorder could be considered scientific, noted: "It turns out that an eerie type of chaos can lurk just behind a façade of order—and yet, deep inside the chaos lurks an even eerier type of order." Hofstadter's remarks appear on the back of the paperback edition of James Gleick, *Chaos: Making A New Science* (New York: Penguin Books, 1987).

88. *Ibid.*, 15.

89. John Knox Laughton, ed., *The Naval Miscellany* (London: Navy Records Society, 1902), 1: 424–25.

90. Gleick, *Chaos*, 37. Nicolas, *Dispatches*, 7: 60–61.

Nelson owed much of his success to his faith in God. I do not mean to suggest that the Almighty fought at Nelson's side and intervened on his behalf. But I do mean to suggest that Nelson's religious upbringing predisposed him to reject the Rationalist ideals as they were applied, and not very successfully, at sea in the late-eighteenth century. That same faith, in God and in himself, allowed Nelson to embrace a more decentralized method of command and control, as had Vernon, Anson, and Hawke earlier in the century, and to pursue that approach to an extreme not attained before, or perhaps since.⁹¹ Because Nelson was "irrational" and "unenlightened" he was free to adopt what was, after all, a rather counterintuitive proposition: that the best way to control veteran subordinates was not to try. This was an extreme act of faith, because in so doing Nelson entrusted his captains with the professional fate of their commander, the survival of the fleet, and, on occasion, that of the nation itself. Few, if any, commanders were prepared to act in a similar fashion, and with Nelson's death the centralized approach to command and control once again reigned supreme in the Royal Navy.

We know that Nelson read the works of William Shakespeare, whose *Henry V* was the source for his reference to the "Band of Brothers."⁹² Perhaps Nelson was familiar as well with the work of another Englishman—John Donne—who wrote:

91. Nelson obviously owed his success to more than his style of command and control. The standard British ships of the line of the 1790s were far more maneuverable than their early- and mid-century predecessors. Nelson's captains were long-serving veterans with years, often decades, of wartime service. British seamen were skilled mariners and fighters who achieved rates of fire twice that of their French and Spanish opponents. The Spanish navy, while a proud service whose ships were crewed by brave men, was moribund; while the French navy of the wars of the French Revolution and Empire had lost the edge it had attained during the American war. Nevertheless, while collectively these advantages almost insured British victory in anything approaching an even engagement, they did not insure crushing triumphs such as those attained by Nelson at the Nile, Copenhagen, and Trafalgar. On numerous occasions other British admirals—Howe, Jervis, and Robert Calder to name a few—possessed the same advantages as Nelson but won only marginal victories. Only Admiral Adam Duncan, at Camperdown in 1797, won a triumph comparable to Nelson's, defeating the Dutch who had not fought a major battle in seventy-five years, relying, as would Nelson, on the good sense and fighting qualities of his commanders, and not signals.

92. The phrase is from Shakespeare's *King Henry V*, act 4, scene 3.

We few, we happy few, we band of brothers;
For he to-day that sheds his blood with me
Shall be my brother; be he ne'er so vile,
This day shall gentle his condition;
And gentlemen in England now a-bed
Shall think themselves accursed they were not here,
And hold their manhoods cheap whiles any speaks
That fought with us upon Saint Crispin's day.

Reason is our Soules left hand, Faith her right,
By these wee reach divinity.⁹³



While Nelson’s victories may have been expected to have prompted emulation and a turn away from the centralized command and control systems of the Lord Howes of the Royal Navy, the very extent of Sir Horatio’s triumph over the French and Spanish fleets paradoxically fostered a return to the centralized orthodoxy of the age. After Trafalgar, the British did not fight another major fleet action for twenty-two years—until Navarino in 1827.⁹⁴ In effect, the very extent of Nelson’s crushing victory in 1805 eliminated much of the momentum and necessity for continued experimentation and reform. As a result, the British remained as enamored as ever of signaling and centralized methods of command.

As Sir Julian Corbett noted, the Royal Navy failed “to grasp the whole of Nelson’s tactical principles.”⁹⁵ Few of Nelson’s contemporaries understood the secret of their master’s achievements. Those officers who considered Nelson’s tactics the key to victory attempted to institutionalize his success by including a Trafalgar maneuver—“Cut the enemy’s line in the order of sailing in two columns”—in a later edition of the signal book, as if the “Nelson Touch” could be reduced to a mere signal!⁹⁶ Others focused instead on Nelson’s aggressiveness and penchant for close battle. The adherents of the “go at ‘em” school embraced a prompt, headlong attack, but failed to appreciate the extent to which “the Nelson Touch”—the admiral’s charismatic leadership and personal doctrine—was central to his method.⁹⁷

Nelson never abandoned the line ahead, the signal book, nor doctrine. He was not a *meléiste*, at least not in the traditional sense that harked back to the days of the Anglo-Dutch wars and group tactics. Nelson, like Vernon, Anson, and Hawke, fully recognized the defensive advantages of the line. Nelson’s fleets sailed into battle in linear formation. It was not the line *per se*, that Nelson abandoned as he came into contact with the enemy, but his control of his subordinates. At Copenhagen, Nelson’s captains formed and fought in a line, and at the Nile in a

93. Verse letter to the Countess of Bedford, John Donne, *The Satires, Epigrams and Verse Letters*, ed. W. Milgate (Oxford: Clarendon Press, 1967), 90–91.

94. The Turkish fleet at Navarino hardly posed much of a tactical challenge to the British. One could plausibly argue that after Trafalgar the Royal Navy did not face another truly challenging battle until Jutland in 1916.

95. Corbett, *Fighting Instructions*, 335–42.

96. Palmer, “Lord Nelson,” 113–14.

97. Corbett, *Fighting Instructions*, 336–38.

doubled line. And Nelson relied as heavily on the signal book to direct the evolutions of his fleet under sail as did any of his contemporaries. But that reliance stopped once the battle began. Nor did Nelson eschew doctrine and plunge headlong into battle with his fleet. Nelson simply replaced the one-size-fits-all doctrine of the era and devised personal doctrine suited to circumstances—namely the skill of his opponents, of his own subordinates, the relative force of the opposing fleets, and the probable scenarios under which the two forces were most likely to engage. Nelson adopted what the historians of land warfare term mission-style or, to use the German term, *auftragstaktik*.⁹⁸

But such fine distinctions were lost on most of Nelson's contemporaries. Thus, as the Age of Fighting Sail came to a close, not only linear formations and tactics but also, and more importantly, the signal book continued to dominate European naval thought. Formalism and centralization of command functions reigned supreme for the next century, despite the incredible technological changes wrought by the Industrial Revolution. The veritable absence of major naval battles placed only spasmodic pressure on admiralities and admirals. Between Waterloo and the outbreak of the Great War there were only fifteen, mostly smaller, naval encounters, whereas during the century preceding 1815 there had been fifty-six, mostly larger, engagements.⁹⁹

Moreover, the Industrial Revolution heralded the approach of an age in which centralization could be exercised at the strategic and operational levels of war, as well as the tactical. The telegraph in the nineteenth and the radio in the twentieth centuries presented admiralities, and political leaders, with the opportunity to embrace enhanced and centralized methods of command and control. To many, this advent of new technology appeared to be the solution to the problems caused by the "fog of war." As two late-twentieth-century naval "rationalists" wrote: "The 'fog of battle' has from ancient times been a formidable hazard to the conduct of war, but the marvels of electronics now on the horizon may do much to minimize this obstacle."¹⁰⁰

Fortunately, there remained a handful of naval officers who recognized the often chimeric nature of centralized approaches to command

98. See Michael A. Palmer, "If Nelson Spoke German?" *Military Review* 69 (January 1989): 98–99.

99. See Michael Sanderson, *Sea Battles: A Reference Guide* (Middletown, Conn.: Wesleyan University Press, 1975).

100. Roger W. Barnett and William M. Carpenter, *Strategic Forecast: U.S. Navy in the Year 2000; Phase II: Policy, Strategy and Technology in Global Competition* (Arlington, Va.: SRI International, 1985), 95.

and control.¹⁰¹ Ultimately, amidst the chaos of war in the twentieth century, a new generation of leaders would turn their back on the communications catholicon of their day—the radio—and rediscover and embrace the lessons learned during the age of fighting sail by Vernon, Anson, Hawke, and Nelson.¹⁰²

101. For early-twentieth-century American examples, see Dudley W. Knox, "The Great Lesson from Nelson for To-Day," United States Naval Institute *Proceedings* 40 (March-April 1914): 295–318; and "The Role of Doctrine in Naval Warfare," *ibid.*, 41 (March-April 1915): 325–65. Vice Admiral Sir George Tryon, Royal Navy, serves as a late nineteenth-century British example of a decentralizer. See James J. Tritten, "Doctrine and Fleet Tactics in the Royal Navy," in Tritten and Donolo, *A Doctrine Reader*, 21.

102. The American naval experience in the Pacific during the Second World War is replete with evidence of a willingness to trust in the principle of the initiative of the subordinate. For an example of a mid-twentieth-century commander who adopted methods similar to Nelson's, see Michael A. Palmer, "Burke and Nelson: Decentralized Style of Command," United States Naval Institute *Proceedings* 117 (July 1991): 58–59. Moreover, the American embrace of a Nelsonian approach to command and control is not implicit, but explicit, in World War II-era doctrinal publications. For example, the U.S. Navy's "Current Tactical Orders and Doctrine, U.S. Pacific Fleet, PAC-10," issued by CINCPACFLT in June 1943, stated plainly (p. v): "PAC-10 is not intended and shall not be construed as depriving any officer exercising tactical command of initiative in issuing special instructions to his command. . . . The ultimate aim is to obtain essential uniformity without unacceptable sacrifice of flexibility."