Alexander Howlett

0826084

ahowlett@sfu.ca

August 25, 2009

The Battle of Virginia Capes, 1781

MA Thesis for Dr. Alan James

Contents.

Acknowledgements.

Introduction.

Strategic & Operational Context.

The Battle.

The Warships.

The Controversy.

Conclusions.

Appendixes.

Works Cited.

Acknowledgements.

I would like to thank my thesis advisor, Dr. Alan James, for endorsing the project, providing material, and steering me in the right directions. I am grateful also to Dr. Andrew Lambert, who suggested examining the transition from wooden to copper sheathing, thereby providing much of the impetuous for later research. I owe a great debt to Nicholas Rodger, Jonathan Dull, Robert Gardiner and Brian Lavery, without whom the present state of knowledge would be shamefully inadequate. I would also like to extend my gratitude to Thilo Weber, TJ Linzy, and Guy Birks, who were kind enough to accompany me on a tour of the Portsmouth historical dockyard. Lastly, and most significantly, I want to thank Leah Chatfield, for listening.

Introduction.

The Battle of Virginia Capes took place in the afternoon and evening of September 5th 1781, and finalized the inevitability of Great Britain's military defeat on continental North America. It is well accepted that the indecisive action between Rear-Admiral Thomas Graves (later Lord Graves) by *Lieutenant-General* Francois-Joseph Paul, the Comte de Grasse, that afternoon enabled the swift persecution of military operations against Lord Cornwallis' forces, then concentrating defensively at Yorktown, Virginia. Through a series of events related to that most famous of battles, the Siege of Yorktown, the subsequent defeat and surrender of Cornwallis has been linked to the collapse of the ministry of Lord North. Indeed, the King's government was forced by the surrender into accepting that the national desire to war for the United States had been exhausted.[1]

The diplomatic and political intricacies of these events will be discussed in their appropriate time, as however, the objective of this thesis is to write a military history of the battle of Virginia Capes.[2] I propose to examine the state of knowledge pertaining to the historic players, artifacts and movements, with deference paid specifically to naval affairs. Mahan and Corbett, two of the great Anglophone naval historians of the last century, discussed the Battle of Virginia Capes in their search for doctrinal and tactical avenues of analysis.[3] Their objective was to explain the battle as part of a narrative of juvenility in the growth of the Royal Navy. Interest was renewed as the bicentennial of

---

[1] Bowler (1975), p. 138 & Conway (2000), p. 251.

[2] Also known as the Battle of Chesapeake Bay; The Battle of Cape Henry; the Battle of the Capes; and by those who study the brief action between Destouches' seven and Arbuthnot's seven on March 16th, 1781, the *second* battle thereof.

[3] Palmer (1997), p. 679. Rodger (2001) singled out Corbett and Laughton for 'stressing the navy's role in the creation and defense of Empire', p. 170.

the Revolution approached, and a flurry of popular and academic texts appeared, many by respected and clever authors. However, unless drawing from a non-English tradition, the great works of their predecessors invariably influenced modern historians.

Today, naval history is undergoing a sort of 21st century renaissance, and there are many excellent works by specialists now redefining the field.[4] In a more general way, the battle of September 5th has always enjoyed a measure of interest, considering its close association with the siege of Yorktown, a regular candidate for 18th century decisive battles and popular histories.[5] What is found lacking amongst academics and non-academics alike, is not a disparity of appreciation for the importance of the events of September, but rather a limited understanding of the intricacy of factors; military, political, social, and technological, that together influenced the outcome.

This essay revisits the events and offers updated explanations for why controversy continues to surround the Battle of Virginia Capes. It will be seen that no single technological, material or qualitative cause can be singled out above any other when discussing the question of outcome, nor can the commanders be blamed for the result. In essence, the Battle of the Capes was a titanic but exhaustive battle; a regimented affair, constrained to a series of movements reliant upon the wind. The slim 'margins of success' in the conflict with France indicate that, more often than not, indecision was the outcome of sea battles.[6]

---

[4] Consider for more detail, Rodger (2008), p. 741-751.

[5] For example, Tuchman's (1988), *The First Salute*, Burke Davis' (1970), *The Campaign That Won America*, & Donald Chidsey's (1963), *Victory at Yorktown*; among many others.

[6] Lambert (2005), p. 227.

With regard to structure: the chapter on the Strategic & Operational context explores how the respective plutocrats and commanders positioned their forces preceding to the combat at land and on sea. This thesis originated as a technological study of late 18th century naval warfare, therefore in the chapter entitled The Warships, I focus on the three areas of technical variance that existed between the warships of *La Marine Royale* and the Royal Navy; specifically with deference to armaments, hull-sheathing and signaling. I also considered the condition and composition of the ships' companies and crews.[7] Without an understanding of what it was like to serve aboard an 18th century warship, one cannot appreciate fully how those warships functioned in battle.

In the past, the historiographical literature pertaining to Virginia Capes has gravitated towards the issue of communication and command, particularly the enigmatic controversy between admirals Graves and Hood. Another major area of interest in the literature has often been the quality of de Grasse as a commander, facing as he did the end of his career shortly seven months following the Chesapeake. Lastly, the very significance of the battle is often brought into question. On the one hand, the Chesapeake is known as an indecisive, tactical failure on the part of the Royal Navy, Simultaneously, on the other, the battle is upheld as the significant strategic triumph of the Allies in their war against England. The apparent tactical indecision has generated the possibility of counterfactual history. In actuality, the outcome of the engagement was absolutely irreversible. All of these controversies are considered in the final chapter.

[7] Rodger (2008), p. 749. A cultural study of a navy seeks to synthesize a wide gamut of disciplines relating to naval history: history of science & technology, medicine, social and sociological history, anthropology, etc.

The Strategic & Operational Context.

1781 was the decisive year of the American war. The seeds of victory sown in 1763 had by 1776 outgrown the confines of Britain's Imperial hegemony in North America.[8] The King's government, under Lord North, had abandoned all attempts at a diplomatic solution to the crisis. In the year of our battle, the rebellion had become an international war of great proportion. Through the Treaty of Aranjuez, arranged in 1779, Spain joined France in the effort to wrest territories from the British Empire. North further demonstrated his belligerence on the part of George III by declaring war against the Dutch republic late in 1780.[9] Indirectly involved were also the nations of the Armed Neutrality. At the behest of Catherine II, the states neighboring the Baltic Sea had joined together in an attempt to place economic pressure on England and ensure that the Empress' 'Declaration of Neutral Rights' was upheld[10]

The defeat and subsequent surrender of General Burgoyne at Saratoga in the fall of 1777 had in many ways precipitated the end of the revolution.[11] With Burgoyne captured and Sir William Howe's northern strategy discredited, General Sir Henry

---

[8] Taylor (2001), p. 437-40.

[9] It seems North considered the reduction of the wealthy Dutch trafficking island of St. Eustians a priority in the war.

[10] Rodger (2004) questioned the effectiveness of Catherine's initiative, given Denmark's side-line dealing with the English, p. 347, & Scott (1990), p. 300-4. The league grew in size over the course of the war, but was generally ineffective at mitigating Georgian sea power. For her part, Catherine's interest in naval matters appears to have been reinvigorated by the spectacular Russian victory against the Ottomans at Chesma, 1770:

The outnumbered but daring Count Orlov had sailed his fleet from the Baltic in a voyage comparable in audacity to the journey of the Second Pacific Squadron to Tsushima, 1904-5. Quataert (2005), p. 40.

[11] Grainger (2005), p. 1.

Clinton became the viable candidate to lead the British forces remaining in America.[12] As a result of these developments, Lord North had organized the full mobilization of British resources for the commitment of the war against the United States.[13]

The Alliance with France and Spain enabled the United States to achieve its independence, and Louis XVI's *Marine Royale* was the significant instrument wielded to that advantage. With the Bourbon powers united, the Allies had gained naval parity with England, and serious thought was now given to daring schemes, including the possibility of cross-channel invasion. French maritime strategy, however, remained focused, as it had since the beginning of the war upon capturing Britain's lucrative plantation islands in the Caribbean, and it was there that de Grasse was headed.[14]

Over the winter the warships at Brest were repaired and overhauled. De Grasse's flagship the *Ville-de-Paris* among others that required extensive work.[15] The naval squadron of d'Estaing returned on the third day of the New Year; the combined fleet now standing at an enormous 47 warships, although not all bound for the West Indies.[16] The strategic plan was as follows: De Suffern was bound from Brest for the Indian sub-

---

[12] Willcox (1954) 'Editor's Introduction' in *The American Rebellion*, p. xxviii

[13] Conway (2000), p. 16. Logistics is an interesting area of analysis. Although the Navy possessed its own logistics organ, the Victualling Office, that dealt capably with the demands of the war, the Army was left generally to its own devices above the regimental level. Indeed, as the Rebellion developed the system that had hitherto prevailed, requiring American merchants to supply goods indirectly for the London office, wholly collapsed. Rodger (2004), p. 377, & Bowler (1975), p. 12-15.

[14] On the value and importance of the West Indies to France, Kennedy (1976) p. 99-100.

[15] Dull (1975), p. 216-7 &147.

[16] Ibid., 216.

continent, de Grasse with twenty ships for the Caribbean, while de Guichen would mobilize for operations against Gibraltar.[17]

The fleet commander bound for America, according to the memoirs of the newly appointed naval minister the Marquis de Castries,[18] was to focus on convoying the 6,000 soldiers and supplies massed at Brest to the Antilles, and thereafter, should events allow, to move the squadron to North America and 'second the enterprises [of] the Americans'.[19] De Grasse sailed from Brest with his fleet and convoy on March 22, arriving at Martinique on the 6th of May.[20] After operating against Tobago and Saint Lucia, de Grasse moved his command to Saint-Domingue where he united with the squadron of de Monteil. He now had twenty eight of the line at his disposal.

The firgate *Concorde*, carrying letters from Washington and Rochambeau, arrived at Cape François on July 16th, and it was now that de Grasse learned the particulars of the situation in Virginia.[21] It was immediately clear to the Comte, that the intentions of the two Allied commanders rested completely upon sea power, without which, the likelihood of success against the amphibiously proficient Cornwallis would be slim. De Grasse alighted from Cape François on the 5th of August, taking well his entire fleet but one northward.

---

[17] Jenkins (1975), p. 166.

[18] Having been appointed on October 14th as part of a general reshuffling of France's war ministry orchestrated by Charles Gravier, the Comte de Vergennes. Dull (1975), p. 199, & Jenkins (1973), p. 150.

[19] Dull (1975), p. 218.

[20] Shea (1971), p. 30 & 139. The 'Count de Grasse' - or simply 'the Count' as he is often referred to in the sources - traveled from Paris on February 18th, where he had been a fortnight in the company of the royal family, and arrived at Brest on the 26th. Lewis (1980), p. 95. Dull (1975) says de Grasse left on the 25th, p. 222.

[21] Dull (1975), p. 242.

In Virginia meanwhile, the Marquis de Lafayette continued to harass Cornwallis as the Comte de Rochambeau and Washington planned their combined operations to take advantage of the possibility of de Grasse's arrival. To conceal their plans, much effort was made to suggest that New York was the target for operations that fall.[22] Washington received a series of crucial dispatches that now served to affect the speed and scale of his operations. First, he discovered that Clinton had been reinforced with a detachment of nearly 3,000 Hessians making even the possibility of a feint hazardous. Second, on August 13th he learned from de Barras at Newport that de Grasse had sailed from the West Indies with an army and his entire fleet.[23] The time for action had arrived. It was decided to abandon all deception in the Hudson and concentrate by land and sea in the Chesapeake.[24] Washington slipped away from Clinton's 16,000 at New York, and prepared his army for the 400 mile journey to Virginia.

It may be tempting to consider the operational plan the result of a rash of 'blind fortune' as the necessary components fell into place at the last moment. Indeed, the window of opportunity when the fleet would be available for operations in America was comparatively slim, considering the scale of the task. It was no case of luck, however when de Grasse arrived off the American coast and completely changed the strategic dimension of the war. What had been required was near perfect co-ordination and timing on the part of the Allied commanders, tempered by a fair measure of patience.[25]

---

[22] Sands (1983), p. 30.
[23] Fuller (1963), p. 327.
[24] Johnston (1971), p. 83.
[25] Johnston (1971), p. 84-5. Especially important in role was the Comte de Rochambeau.

There was however, one close call. On the 27th of August, Sir Samuel Hood had reconnoitered Chesapeake Bay with 14 coppered battleships. One might imagine the possibility of history diverging from its fixed course had Hood's ships been slower, or de Grasse a few days early, perhaps, had they been fully coppered.[26] Graves might have learned of the composition of de Grasse's fleet. As it happened, Graves was greatly deficient in information, writing Hood on the 28th that he expected de Grasse to make for Havana.[27] On the evening of the 29th, Graves learned that de Barras had fled Newport, taking his transports with him.[28] Hood and Graves united their forces on September 1st, Graves, as a Rear-Admiral of the Red, superceded Hood, being a Rear-Admiral of the Blue, and thus took command of the combined fleet.[29]

De Grasse presently arrived on August 30th. The size of his fleet, 28 sail of the line, still unknown to Graves.[30] De Grasse immediately began intercepting British communication frigates and lookouts.[31] It was a welcome change and as we have seen the Allies had long been planning to exploit the opportunity with a move southward.[32] De Grasse now provided the amphibious transportation capacity make the movement of the Allied army from the Elk River to the Chesapeake possible.[33] He disembarked the 3,300

---

[26] Larrabee (1965), p. 153.
[27] Chadwick (1968), p. lxvii.
[28] Ibid., lxviii.
[29] See Appendix IX.
[30] Dull (1975), p. 245. De Grasse had stopped only briefly at Matanzas, Cuba, from where he learned of Rochambeau's economic plight, and dispatched the *Aigrette* to Havanna, where the incredible donation of 1,000,000 piastres, more than enough in backpay, was received.
[31] De Grasse captured the corvette *Loyalist* on the 30th and forced the copper frigate *Guadaloupe* (carrying dispatches from Cornwallis bound for Charleston) back into the York River. Hatch (1957), e-text, & Sands (1983), p. 46.
[32] Johnston (1971), p. 84-6.
[33] Fuller (1963), p. 327.

soldiers,[34] artillery and horses bound from Saint-Domingue, and sent his transports up the Chesapeake to receive the Allied army.[35]

Graves, for his part, begun preparations to sail on the 31st of August. The English now possessed a fleet of 19 line-of-battle ships, as well as 50 gun cruiser and accompanying frigates.[36] Graves was of the impression that de Grasse would arrive soon from the Caribbean with a fleet that would '*not be superior*' to his own.[37] As it stood, without adequate intelligence, Graves believed that he could defeat de Grasse before he could combine with de Barras' eight of the line. Graves knew de Barras had sailed from Rhode Island bound for the Chesapeake a few days earlier.[38] Sir Henry Clinton was prepared to transport 'between three and four thousand' soldiers to the York River once word that Graves had secured the Chesapeake had been received.[39]

Graves arrived on the 5th of September and the battle was fought. The two fleets remained within visual sight of each other for the next four days, waiting for the other to attack. Graves, possessed the faster (coppered) and more fully experienced fleet, and thus held the initiative to attack, but several of his ships were badly damaged. On the 10th de Grasse returned to the Chesapeake, where he found de Barras already on station.

After the battle of Virginia Capes, which de Barras had actually witnessed from a great distance but did not partake in being unaware of 'the nationalities of the ships engaged' arrived with the ships in his squadron as well as provisions of salted meat, and

---

[34] Commanded by the Marquis de St. Simon.
[35] Dull (1975), p. 244, & Fuller (1963), p. 329.
[36] See Appendix XIV.
[37] As Graves had learned from Rodney's letter of July 7th, before the latter departed for England. White (1930), p. 35. Larrabee (1965), p. 147-8.
[38] White (1930), p. 37.
[39] Sands (1983), p. 51.

crucially Rochambeau's siege artillery that would ensure the reduction of Yorktown.[40] Graves dispatched the frigate *Medea* to find de Grasse, which, upon returning to Graves on the 13th, reported that the French fleet was back in the Bay, although the arrival of de Barras went unknown.[41] On the 14th of September, it was decided to return to New York for repairs. The *Medea* was sent to England to bring news of the battle, arriving at Weymouth on the 5th of October, the story breaking within a week.[42]

Rochambeau received de Grasse's battle report on September the 14th and on the 17th after his arrival in Williamsburg, Washington received an audience with de Grasse.[43] On the 18th of September from the Elk River the army was embarked for the movement down the Chesapeake and thereafter had fully concentrated at Williamsburg on the 26th of September.[44] When the siege finally began on the 29th, the Allied army numbered 16,654 soldiers, a force totally outnumbering Cornwallis' trapped army of 7.000.[45]

On the 10th of October the Allies began the bombardment with cannon and mortar. After eight days of siege, the Allies had fired 15,437 rounds at Cornwallis' fortifications.[46] Surrounded and under bombardment, Cornwallis's situation was desperate. He finally attempted to evacuate across the river to Gloucester but the evacuation fleet was scattered the night of the 16th due to a gale.[47] The next day he asked for terms, marching out to his surrender on the 19th. The siege had cost the allies 75 killed

---

[40] Dull (1975), p. 246, & Larrabee (1965), p. 187.

[41] Larrabee (1965), p. 188.

[42] Larrabee (1965), p. 189, & London Chronicle (October 13, 1781), issue 3881.

[43] De Grasse, himself over six feet tall, at that meeting famously referring the imposing Virginian as '*Mon cher petit general!*' Larrabee (1965), p. 221.

[44] Fuller (1963), p. 329.

[45] Tindall & Shi (2004), p. 246 & Fuller (1963), p. 333. Consider Appendix VIII.

[46] US National Parks Service, <http://www.nps.gov/york/historyculture/the-siege.htm> (August 18, 2009).

[47] Fuller (1963), p. 337.

and 199 wounded, whereas the British dead numbered 156, with 326 wounded.[48] Clinton and Graves arrived with a relief expedition, including 7,000 soldiers and 35 ships, on October 24th.[49] There he found de Grasse, with 36 of the line, and for two days Graves held sight of the French fleet moored in the Bay. De Grasse (who had agreed to stay as late as the end of October, being due back in the Caribbean), declined to offer battle, and the English sailed back to New York, disembarking Clinton's army on November 2nd.[50]

Upon receipt of the news of the surrender, on November 25th, 1781, Lord North was said to have exclaimed 'O God! It is all over!' Despite this outburst, he seemed to regain his composure quicker than most in the government, including the King.[51] North was well aware that with the defeat of Cornwallis went any possibility of conquering the United States.[52] Charles Fox launched an attack from the opposition in February 1782, and now twice put forth a motion calling for an enquiry 'into the Causes of the Want of Success of the British Navy' in recent events.[53] Another motion was forwarded to end 'offensive war' in America, and passed on February 27th.[54] North, and the King's ministry, was finished the former resigning on the 20th of March.

If 1781 had been the year of victories for the Allies, it was now the turn of France to face defeat. There were several major reversals in the years 1782-3, notably the failure of the planned offensive in India, the failure to capture Gibraltar, and the defeat and capture of de Grasse himself at the Battle of the Saintes. Although the war in America

---

[48] Ibid., 338.
[49] Tuchmann (1988), p. 290.
[50] Larrabee (1965), p. 199, & Dull (1975), p. 246.
[51] Whiteley (1996), p. 195.
[52] Whiteley (1996), p. 197, & Scott (1990), p. 327.
[53] Whiteley (1996), p. 199.
[54] Scott (1990), p. 317.

had well been won, the broader colonial war, the so-called 'world war'[55] continued while the Spanish, French, Dutch and English attempted to coerce providential peace settlements from each other. Of course, recorded conflicts between the aforementioned empires and nations does little to communicate the myriad sufferings inflicted upon the subject peoples of the Indian sub-continent, the Caribbean, America, Africa and Europe; many millions were afflicted by the plight of conflict and its related horsemen.[56]

Internal political divisions in England, including the collapse of the Shelburne government and the rise of the Fox-North coalition at long last promulgated an Anglo-Burbon peace agreement, signed in Versailles in September, 1783.[57] The war with the

---

[55] Conway (2000) uses this term, p. 16, as does Rodger (1993) wherein he devotes a chapter to the 'World War'. It is unclear who originated the terminology with regard to the latter phase of the American Revolution.

As an aside, professor Khan considered the wars of the French Revolution the first of his 'World Wars'. Khan (1961), p. 350. One may presume prior occurrences of the phrase to refer to what early modernists call 'proto-globalized warfare'; European warfare exported to Europe's dependants and colonies around the world (not particularly industrial, total, or even necessarily national). Michael Howard (1976) distinguished between the mercantilist wars of the soldier-professionals and, after 1789, the revolutionary war of the mobilized nation.

[56] In terms of *megadeaths* [Khan, 1953; Russel, 1954], the American Revolution was but one of the many conflicts that occupied the interest of man throughout the 18th century. To provide some idea of scale, consider a sample of major wars and rebellions from the period: the Seven Years War (1755-63), the French Revolution and Wars (1789-1802), the War of Spanish Succession (1701-13), the Northern War (1700-21) , the War of Austrian Succession (1740-48), the War of the Quadruple Alliance (1718-20), The War of Polish Succession (1733-38), the Sino-Dzungarian War (1755-57), the Haitian Revolution (1701-1803), the White Lotus Rebellion (1796-1805), the Irish Rebellion (1798), the Rebellion of Tupac Amura (1780-83), the Russo-Austro-Turkish War (1787-91), and the Hungarian Revolution (1703-11). The American War of Independence (1775-83) represented less than 1% of all civilian and military fatalities incurred. <http://users.erols.com/mwhite28/wars18c.htm> (August 21, 2009).

[57] Scott (1990), p. 335. The details of the peace are outside the remit of this essay, but let it suffice to say that concessions and alterations to the ownership in the Caribbean, Mediterranean, Africa, India and America were all made.

Dutch ended on the 20th of May 1784, likewise with concessions of varying import.[58] From the British perspective, the war had been a naval success, nevertheless, sea power had proven 'insufficient' in coercing the Thirteen Colonies.[59] The war had had a broad and profound effect upon the nations of Britain and France, triggering numberless reforms and reactions, destined to ensure bloodier future conflicts.[60]

[58] Scott (1990), p. 337.
[59] Corbett (1911), p. 49, Kennedy (1976), p. 114.
[60] Conway (2000), p. 346.

The Battle.

With the context of the campaign now established, we must focus our attention on the details of the event on the 5th itself. The events of the battle can be divided into three phases; the maneuver phase, the exchange of cannon, and the repairs conducted afterwards. The cannonade lasted for only about two and a half hours, the maneuver phase, several hours, and the repairing of the fleets required a number of days.

De Grasse received the news of Graves' arrival that morning from the frigate *Aigrette*, which announced that 'at least ten sail' come from the direction of New York were making wind toward the bay.[61] Claude Manceron has related that the frigate was then re-dispatched to gain more exact information, and after having been 'peppered with shot' returned to announce that much of the Royal Navy's presence in America was coming.[62] Meanwhile, Graves had dispatched the frigate *Solebay* to scout, and at about 9:30 signaled that there were enemy ships of an indeterminate amount in Lynnhaven Bay.[63] Graves cleared for action at 10.05, still unaware of the size of the fleet opposing him.[64]

Earlier, de Grasse had dispatched the *Glorieux* (74), *Triton* (64) and *Experiment* (50) and a fourth ship, to cover the entrances of the York and James rivers and prevent

---

[61] Manceron (1988), p. 488.

[62] Ibid. There is no record of Graves having ordered firing upon any frigate that day, although as a matter of course one cannot out-rule the validity of Manceron's description.

[63] Larrabee (1965), p. 157.

[64] Chadwick (1968), p. 180-1, & Larrabee (1965), p. 158. Later at about 2 pm, it became clear that de Grasse significantly outnumbered him. It was presumed that de Barras must have already arrived and joined his force with de Grasse, the former believed to have brought only 16 ships from the West Indies

Cornwallis' escape.[65] When de Grasse received news of Graves' arrival, his immediate task had been the disembarking of Saint-Simon's corps, at the time occupying 90 officers and over a thousand sailors from his fleet, not to mention many of his boats.[66] Although he was able to recall some of the boats, not all were able to join their ships before 11:00, when the fleet slipped its anchors. Many of his ships remained significantly under-manned, the *Ville de Paris* itself was '200 men and five officers' short handed.[67]

Graves approached Lynnhaven Bay, and ordered the fleet to form line one cable length ahead. Maneuvering the formations required frantic signaling, Graves regularly communicating with his subordinate divisions.[68] Rather than attempt to crash through the entrance of the bay, Graves performed a wearing maneuver at approximately 2:15, bringing his fleet onto an oblique angle of attack[69] albeit with his order of battle reversed, the weakest ships hitherto struggling to bring up the rear now thrust into the apex of the conflict. Rear Admiral of the Blue, Sir Francis Drake's rear squadron became Hood's van.[70] In addition to placing a great burden upon his weakest ships, Graves likewise alienated the aggressive Hood, as we shall see.

After the battle, Sir Samuel adopted the much celebrated belief that had he been able to launch an immediate attack with his leading division against the French line as it

---

[65] Larrabee (1965), p. 242. Earlier, the same source stated that de Grasse had dispatched 'two "fifties"' although the only 50 gun warship in de Grasse's fleet was the captured *Experiment* (p. 158). The *Triton* is often rated at 64 guns, although it appears as 54 in *The Graves Papers*, p 150.

[66] Larrabee (1965), p. 160.

[67] Chadwick (1968), p. lxix.

[68] Shea (1971), p. 69.

[69] This has also been described as a 'lasking' maneuver. See Appendix III.

[70] See Appendixes I & II.

straggled past Cape Henry, the day would have gone to the Royal Navy.[71] Certainly there is an aspect of serious resignation from Hood, once he found himself ingloriously commanding the rear division. De Grasse, interestingly, was also leading his line in reverse order, as he had ordered his fleet to take station as quickly as possible. The Comte de Bougainville[72] in the van switched with de Monteil who now took the rear division. Bougainville personally took the lead in the *Auguste*, as his squadron cleared the shoals (allowing for only about 3 miles of maneuver for battleships between Capes Henry and Charles) by 12:30, and formed up for battle.[73] The *Ville de Paris* cleared Cape Henry a little ahead of the *Citoyen* at 1:45.[74] At about this time, Graves was still approaching the bay, having yet to wear over.

A complicated series of events preceded Graves' getting into battle. The log of the *London* recorded that Graves signaled for the line (1 cable) at 3:46 and shortly thereafter flew the signal for close action, repeating that signal three minutes past four. Up until this point, Graves had been habitually signaling for Drake to close with the French from the starboard. Hood received the order for the line at 3:54 and the order to engage at four. At 4:11 the signal for the line aboard the *London* was now hauled down, the definitive signal for close action, and although the *Barfluer*'s[75] log does not record this, it does state that the *London* fired a cannon to enforce the order for close action at approximately the same

---

[71] See Appendix IV. Hood wrote in his letter to George Jackson on September 16: 'Soon after [the French] began to come out in a line of battle ahead, but by no means regular and connected, which afforded the British fleet a most glorious opening for making a close attack to manifest advantage, but it was not embraced', Chadwick (1968), p. 87.

[72] Lious-Antoine, Comte de Bougainville. See Appendix V.

[73] Manceron (1978), p. 490.

[74] Chadwick (1968), p. lxix.

[75] Hood's 90 gun flagship, of the same design as the *London*. See Appendix XIII.

time.[76] The *Barfleur* repeated this signal (presumably the cannon shot) at 4:17.[77] The line signal was re-flown for only a space of five minutes between 4:22 and 4:27, thereafter the signal to engage close was re-flown.[78] And again, although the log of the *Barfleur* does not record the brief line ahead signal of 4:22, it does, cryptically, state that at '25. Minutes past 5 haul'd down the Sigl. for the Line. At the Same time the Sigl. for Closer Action was flying.'[79] The log of the *Barfluer* therefore corroborates the statement of Hood that the *London* was flying the signal for line-of-battle the entirety of the engagement, although this is clearly an error on the part of the rear division.[80] All of this is suitably relevant for understanding the command controversy that followed.

The crucial division between the periods of peace and violence was Graves' signal to attack close, the blue and white-checkered flag with white pendant above.[81] Action commenced at 4:15, a fierce cannonade ensuing.[82] Early in the action, the *Shrewsbury*, leading the attack and facing the *Pluton*, was heavily damaged in the rig, having both 'fore and main topsail yards shot away' and was forced to quit the line for want of maneuverability.[83] Every English ship for which damage is recorded suffered in its rigging, particular attention having clearly been paid to the English mainmasts.[84]

As the firing continued the gunners naturally grew fatigued. As the guns became heated their powder charges were reduced, both to decrease the likelihood of accidental

---

[76] Ibid., 182-3 & 204.
[77] Ibid., 204.
[78] Ibid., 182-3.
[79] Ibid., 204.
[80] Ibid., 90.
[81] Larrabee (1964), p. 168.
[82] Larrabee (1964), p. 169. In Shea (1971) it is related that the first shots were fired at five past three, the first broadside killing Captain de Boades of the *Reflechi*, p. 70.
[83] Willis (2008), p. 152, & Chadwick (1968), p. 90.
[84] Chadwick (1968), p. 69-75.

discharge but also to take advantage of the increased effects of splintering at close range and low velocity.[85] At musket shot and below the carronades came into use, heavy shot into the decks of the French warships. The *Diademe*, fourth in the French line, was set afire by the concentration of shot from Drake's division. De Bougainville, in his turn, concentrated his fire on the *Terrible*, damaging it beyond repair.[86] Graves, unsatisfied, repeated the signal for close action as 5:30 approached.[87] Hood finally engaged with the *Palmier* and *Solitaire* at the rear of de Grasse's squadron, but his shot fell into the ocean. The French fired back high, overshooting Hood's squadron.[88]

It is certainly striking that the battle concluded as rapidly as it did on the evening of September 5th both Graves and de Grasse refused to pursue the engagement after 6pm, although sunlight still filtered over the horizon and the moon was full.[89] At 6:23, in the pre-dusk twilight, Graves re-flew the signal for the line (1 cable) and hauled down the signal for close action. The cannonade continued into the twilight, although some ships quit their fire earlier on account of exhaustion.[90] All fire had ceased by 6:30, several minutes after the sun had set.[91]

Unsurprisingly, damage inflicted from the cannonade was general and deadly. In the English line, the *Shrewsbury*, leading the van, suffered the worst. That 74 gun warship had lost function from 'all her masts yards and sails' as well as received a

---

[85] Howard (1855), p. 69.
[86] Manceron (1978), p. 492.
[87] There is a discrepancy here between the journal and logbook of the *London*, the former stating 5:26 the latter 5:20.
[88] Larrabee (1965), p. 177, quoting from *The Graves Papers*.
[89] http://www.wolframalpha.com search for 'september 5 1781 yorktown'.
[90] Larrabee (1965), p. 178.
[91] Larrabee (1965), p. 178., quoting from Shea (1971), p. 158.

penetrating shot below the waterline.[92] During battle, the senior officers were stationed on the quarterdecks where they were vulnerable. Captain de Boades of the *Reflechi* was killed in the action, and Captain Mark Robinson had lost a leg in the engagement.[93] The gun-crews and junior officers, on the other hand, were below deck servicing the guns and were thus protected from light shot by the thick timbers of the hull.[94]

De Grasse's van had indeed been treated roughly. The *Diademe*, earlier ablaze, suffered 120 casualties, almost equal to the number of impacts, 12 shots scoring hits below the waterline.[95] All together, the French lost nearly 400 men in addition to 12 officers.[96] All told, the English had 90 dead and 246 wounded. The proportionally higher casualties amongst the French ships can be attributed to a number of factors, all of which contributed in some degree: the lighter construction of French warships; the deadly English advantage imparted by the carronades at close range; and the tendency for the English to concentrate their fire against hulls rather than rigging (although this was by no means doctrinal).[97]

Superstructure damage was profound amongst all the ships of Drake's van division, as well as de Bougainville's division. On the 6th, Drake moved his flag from the badly damaged *Princessa* to the *Alcide*. Aboard the *Citoyen*, seven miles distant from the English line, it was apparent that Graves had ordered major repairs to be carried out at

---

[92] Chadwick (1968), p. 69.
[93] Ibid., 68.
[94] Rodger (1986), p. 245.
[95] Shea (1971), p. 73.
[96] Ibid., 73.
[97] Willis (2008), p. 140-1, ascribed the English propensity for hull targeting as part of the Royal Navy's characteristic tactic of engaging close, the French likewise choose the rigging as part of a characteristic standoff tactic. The construction of the respective ships complimented and encouraged these methods.

sea, however the English were short on supplies of timber, making things difficult.[98] The, *Intrepid* the second English ship in the line, had sustained 65 shot holes on its starboard side and 21 men killed.[99] 54 men were killed from Drake's division alone, a further 153 having been wounded. The figures from the first two ships 'constituted exactly one-half of all the British killed in action, and about one-third of the wounded.'[100] The most heavily damaged ship was the *Terrible* which had begun the engagement with all its pumps working and ended it with the pump-chains worn away and taking on water at a volume of 2'2" every twenty-five minutes.[101] By the 9th the situation was worse, the *Terrible* now making 6' every hour, up to 8' on the 10th. The *Terrible* was invariably burned on the 11th by command decision.

The fact of the matter is that neither fleet was in condition to rejoin battle. The weaknesses in both fleets had been exposed. Graves refused to risk his ships further, and as de Grasse knew that de Barras would soon arrive with his ships, the former had only to wait.

---

[98] Larrabee (1965), p. 180, & Sands (1983), p. 53.
[99] Chadwick (1968), p. 70, & Larrabee (1965), p. 170.
[100] Larrabee (1965), p. 170.
[101] Chadwick (1968), p. 72.

The Warships.

In this section is discussed the respective merits and demerits of the material and technological aspects of the French and English fleets, with deference paid especially to the crucial issues of coppering, carronades, and signaling.

The basic similarity that linked the French and British navies was the workhorse 74 gun warship, which struck a fine balance between speed, range, protection and firepower. These ships had been built by the hundreds and by most major navies, throughout the 18th century.[102] In the English service, these warships had been armed with 28 32-pounder cannons as well as 28 18-pounder and 18 9-pounder medium and light guns. In the French service, 28 36-pounderers[103] was the standard lower deck armament; 30 18-pounders and 16 8-pounders mounted on the upper decks. The 74 was crewed by 500 seamen and massed 1600 tons or more.[104] The British had 12 of these ships, the French 17. The French 74s, as we have seen, fired a heavier broadside, but would have done so slightly slower, given the extra weight of their shot.

Indeed, the French navy had undergone a profound transformation following the Seven Years War, generally accredited to the efforts of the duc de Choiseul. Through a series of appeals to the provincial estates as well as the prominent merchants and bankers of France, de Choiseul had been able to assemble the funds to build 16 ships of the line, seven of which took part in the battle at Virginia Capes.[105] It has been regularly attested

---

[102] See Appendixes X, XI & XII.

[103] Actually fired a 39 pound ball, 'the French pound was heavier' from Gardiner (1996), p. 83.

[104] Lavery(1986), p. 121, Gardiner (1996), p. 94.

[105] These ships were the *Bourgogne* (74, from the Estates of Burgundy), *Marseillais* (74, from the Marseilles Chamber of Commerce), *Saint-Esprit* (80, from the Order of the Saint-Esprit), *Ville de Paris* (90 guns, up-gunned to approximately 104,

that these were fine ships, the *Ville de Paris*[106] often regarded in the literature as the finest warship of its day.

Nicholas Rodger took issue with the claim that these new French ships were designed along 'scientific' principles, rather he attested that the efforts of 'philosophers, gentlemen and mathematicians' in fact were profoundly unwelcome by the actual naval architects and draftsmen whose designs were based on hundreds of years of careful evolution.[107] Three ships, particularly, all of which took part in the battle, had been designed along 'scientific' lines in 1778, the *Hercule*, *Scipion*, and *Pluton*, the latter leading de Bougainville's van.[108] These ships, when launched, were profoundly un-seaworthy, and it was required that their stowage capacity be cut down and replaced with ballast.[109] Indeed, much emphasis was placed on the building of light, fast warships in the French service, although in terms of actual speed, by the time of Virginia Capes the greatest difference was being made by experienced crews in copper-bottomed ships rather than generally light construction.[110]

In the main, British ships were much older than their French counterparts, and there were more intermediate ships from the obsolete 64 gun category. For example, Drake's flagship, the *Princessa*, had been a Spanish 70 gun captured in 1740.[111] The trend in the English service leading up to the war had been a move towards 'a

---

although often rated at 110, from the city of Paris), *Languedoc* (80, from the Estates of Languedoc), *Citoyen* (74, from 'the Court Bankers and the Treasurers of Supplies to the Forces'), and the *Zele* (74, from 'the Receivers-General of Finances). List compiled from Jenkins (1973), p. 142.

[106] See Appendix VII.
[107] Rodger (2004), p. 410.
[108] Ibid., 410.
[109] Ibid., 410.
[110] Ibid., 415.
[111] Ibid., 412.

superficially French-style fleet' build around the 74 gun ship.[112] Of Graves' ships, the *Terrible* (74), *Ajax* (74), *Montagu* (74) and *Europe* (64) were all in varying degrees of ill-repair prior to the battle.[113]

Clearly a material and qualitative disparity existed between the French and English fleets. In addition to outnumbering Graves, de Grasse's ships were in a relative state of repair, having been thoroughly overhauled before leaving Brest in March, 1781. On the other hand, de Grasse's fleet had not been *recently* serviced, whereas Graves had only just left port. It must also be imagined, however, that the greater number of copper-bottomed ships in Graves' fleet went far to reduce the advantage de Grasse held from numerical superiority. Less than half of the line of battle ships in the *Marine Royale* were coppered, and only half of de Grasse's fleet had thus been fitted.[114]

Copper-bottoming was an area in which the Royal Navy excelled.[115] The wooden hulls of all sailing vessels were profoundly vulnerable to the energies of the shipworm, the *teredo navalis* mollusk (found frequently in the Caribbean and Atlantic seaboard), which, given enough time, would reduce the wooden sheathing protecting a ship's hull.[116] Furthermore, underwater fouling from sea life and growth was the single most significant factor affecting the speed of a warship besides the set of its rig and sails.[117] Many

---

[112] Rodger (2004), p. 417-8. Rodger made much of impact of Thomas Slade, architect behind the *Victory* and naval Surveyor from 1755-1771.

[113] Chadwick (1968), p. 34 & Larrabee (1964), p. 157.

[114] Larrabee (1964), p. 158 & Dull (1975), p. 257, confirms this statement, but does not specify which ships were coppered. Apparently this information is contained in an unpublished list in the French National Archives as part of their naval holdings.

[115] Experiments had been conducted as early as 1762. Rodger (1993), p. 295.

[116] Chadwick (1968), p. 34. Being a variety of clam.

[117] A recently cleaned hull could be expected to sail 'as much as 1 1/2 knots' faster than a ship with a fouled hull. Willis (2008), p. 28.

different methods of protecting the hull were attempted, the only satisfactory and permanent solution had been found to sheath the entire hull in copper plates.[118]

Prior to the American Revolution, the Royal Navy had deemed coppering prohibitively expensive and time consuming, but when France joined the war in 1778 it became essential to maximize the time warships spent out of dockyard. Lord Sandwich, the Admiralty's First Lord, at the behest of the radical naval comptroller Charles Middleton, had approved a plan for coppering the entire fleet in semi-permanent fashion by coating the hulls in tar and covering them with 'waterproofed brown paper' before the application of copper sheaths, an effective expediency for reducing iron degradation, a well observed but baffling process.[119] Selective coppering began in February 1779, and became general at great expense after May.[120] When Virginia Capes was fought, every ship in Graves' fleet had been coppered, as indeed had been much of the entire Royal Navy. The expense of this transformation was readily reflected in the naval debt accumulated over the course of the war, ballooning from 2.6 to 5.1 million between 1774 and 1778, and then leaping to 15.5 million by 1783.[121]

Although coppering provided advantages in both speed and protection below the waterline, the tar-and-paper method proved wanting for sustainability. Major problems began to appear after about three years at sea.[122] The *Marine Royale*, for its part appeared

---

[118] Gardiner (2004), p. 142.

[119] Rodger (2004), p. 344. Galvanic corrosion in which the cathode (copper plates) reacted with the anode (iron rivets) in a electrolytic solution (salt water).

[120] Gardiner (1996), p. 123. 'By January 1782 82 battleships, 14 of 50 guns, 115 frigates, 102 sloops and cutters had been copper sheathed.'

[121] Rodger (2004), p. 644. It was in that year when it was found that 'the iron bolts of many coppered vessels' – one imagines all of them – 'were discovered to be badly corroded'. Gardiner (1996), p. 123.

[122] Rodger (1993), p. 297.

to have been fully aware of the ferrus corrosion caused by coppering, and therefore preferred the expensive but permanent solution of copper nails, when available.[123] In the English service, the Admiralty had considered this method as early as 1769, but felt it too expensive for practical application.[124] For want of the appropriate materials and the requisite budget, therefore, the programs of de Sartine reflected a hesitant transition from wooden sheathed to copper sheathed hulls, a transition one can juxtapose to the radical coppering initiative pursued by Sandwich. In 1781 the 'Bailli' de Suffren sent an article to the Marquis de Castries, Sartine's successor as naval minister, urging him to hurry the process of coppering as a result of the copper disparity that existed between the services.[125]

In sum, the situation with regard to copper hulls was complex. Although all of Graves' ships had been coppered, the method employed was at best a mixed blessing, having caused significant damage to the integrity of the hulls of many of his ships. Until the invention of copper-zinc nails in 1786, any solution to the coppering problem was liable to be imperfect, not to mention hurriedly applied in time of war, and thus we can state with some degree of authority that coppered ships were at once faster, relatively more protected below the waterline, but also of weaker durability, particularly so had they been long at sea. The verdict of September 5th put to question the assertion of Charles Middleton that an 'inferior fleet of coppered ships under a judicious commander

[123] Dull (1975), p. 279.
[124] Gardiner (2004), p. 142.
[125] Laughton (1887), p. 102.

will keep a superior one that is not so in awe, and prevent their gaining any material advantage.'[126]

Another area of great technical consideration was the manufacture and development of weapons. The cannon of 1781 had as its distant origins the medieval bell, mortars (as well as variously ornate or likewise utilitarian hand-cannons and touch-hole guns) came into popularity in Europe during the 14th century.[127] Artillery pieces were frequently mounted aboard the warships of this time, although not in sufficient number or with significant reliability to decide conflict by cannonade at sea.[128]

Over the centuries that followed, the cannon became the primary weapon of the sailing warship, and was mounted in increased proportions along the broadsides of fighting vessels. In our period of study, warships were defined and categorized on the basis of the quantity of guns they carried. The ubiquitous weapon was the smoothbore muzzle loading cannon, the heaviest unspecialized ship-mounted pieces were English guns, that fired iron balls weighing 42 pounds (although none of these pieces were fitted at the Chesapeake, having gone out of popularity for being slow to load).[129] The disparity in terms of cannon between the two fleets was in the vicinity of 400 guns, although we should not make too much of this, as a result of Graves' oblique angle of attack, and de Grasse's response to it, the ships in the van engaged their equal in the opposing line: only rarely could two or three ships take advantage of a single target.

In one unique area of weaponry, the Royal Navy possessed a distinct technological advantage over *La Royale*, specifically, the carronade. In 1780 the Royal

---

[126] *The Sandwich Papers*, p. 62.
[127] Howard (1976), p. 13.
[128] Southworth (1968), p. 16.
[129] Gardiner (2004), p. 147.

Navy had began to adopt the carronade, a short barreled cannon firing a heavy ball (or anti-personnel shot) at low velocity, which, taking advantage of the structure of wooden timbers produced a more significant 'smashing' effect with associated splintering than the relatively higher velocity long guns.[130] The carronade was not actually adopted for general use until after 1783, during the war serving in the main as a close range weapon mounted on the fore and quarterdecks as well as aboard experimental ships, frigates, corvettes, and so on. These weapons gave the British a deadly advantage at close range, one the *Marine Royale* did not respond too until 1787.[131]

During the war, French gunpowder was of an interesting quality, France lacking any natural reserves of saltpetre. While half of the French requirement was imported from the Dutch, the other half was made up by mixing 'earth, lime, […] vegetable and animal refuse'.[132] The precise efficiency of this crude mixture remains open to debate, and it seems reasonable to presume that English powder, produced locally, was of superior quality. Both navies used 'corned' powder, or powder forced into spheres of varying diameter depending on the caliber of cannon.[133] Paper and flannel cartridges were used, the size of the powder charge normalized at 33% the mass of the shot; 25% when firing double-shot. Carronades used charges of only 8% the mass of the ball, emphasizing their extreme close range applicability.[134]

---

[130] Gardiner (2004), p. 147, & Rodger (2004), p. 420. See also Howard (1855) and specifically the technical analysis conducted in part II, pp. 68-120.

[131] Rodger (2004), p. 421, & Lavery (1987), p. 105-6, & Rodger (1993), p. 299, & Southworth (1968), p. 251. Gardiner (2004) mentions the French howitzer-carronade, p. 153.

[132] Gardiner (1996), p. 47.

[133] Ibid., 135.

[134] Ibid.

The state of inter-ship communications in those days was sophisticated, but like many complicated and inelastic systems prone to error under stress, as we have seen. Here the British offered another clear dominance: the sophistication of their signaling system represented the apogee of pre-industrial maritime communication techniques. The various elements involved were the flag signal, the lamp (for night time communication) and the gun.[135] In the Royal Navy of the late 18th century, the various means of communicating by signal were established between the squadron commanders and their ships' captain. Each admiral had his own method, although, those systems used by Hawke, Howe and Kempenfeldt had became dominant.

Much has been written about the supposed inflexibility and tactical orthodoxy the signaling system imposed, often as part of a 'learning-curve' triumphantly realized by Nelson's unorthodox success. It was not the case, as has been suggested by Corbett that Graves did not trouble himself to think because 'he had a printed book to do his thinking for him'.[136] At any rate, there existed a long tradition of fighting instructions that covered exactly the situation rendered by the Hood-Graves controversy. For example, Hawke's Additional Instructions of 1759 stipulated that, after signaling for battle, 'I shall keep the signal for the line ahead flying, making or shortening sail' at the admiral's leisure.[137] In actuality, the fighting instructions were merely lists of maneuvers and their corresponding signals, and it is difficult to see anything sinister or Byzantine in their issue. As for the signals themselves, most were ordered by flag, and as a result were liable to become less

[135] Ibid., 253.
[136] Corbett (1908), p. xxxviii.
[137] Corbett (1905), p. 218.

than visible in the heat of battle. As basic a factor as the direction of the wind, or the billowing of smoke in relation to the observer could be the crucial factor.[138]

On that note, our attention can be turned to a comparison of the human and animal dimension of the warships. 'Living in an age of sophisticated weaponry as we do, when the potential of such power has largely outstripped the minds of those who control it, we can find admiration, even awe for those sailors in wood and canvas who had to depend entirely on their crude determination'[139] Although prosaic, the former is a considerable understatement; the wooden sailing ship was a sophisticated and complex piece of machinery. Nevertheless, one does grasp the essential motivation that has compelled the historian to study the age of sail: that being the character and ability of the people who lived through it. The social fabric of the sailing navies was a regimented one, a man would be obliged to accept punishment by cane or lash, yet also be expected to perform skill intensive and hazardous duty with regularity.[140] Pay was minimal and diet worse. Stranger still, many children and boys served aboard the warships, learning early the skills required to sail. Indeed there had been some issue with the paying of de Grasse's large crew prior to its departure from France, funds having been appropriated by donation from door to door in Brest.[141] Speaking generally, hence, we may say a few words about the experience of operating aboard a sailing ship of war.

These floating fortresses accommodated impressive storage capacity and enough victuals to perpetuate the crew at sea for five months.[142] In the English service, spoiling

---

[138] Willis (2008), p. 68.
[139] Smith (1973), p. viii. Foreword by Alexander Kent.
[140] Rodger (1986), p. 220-1.
[141] Shea (1971), p. 30.
[142] Rodger (2004), p. 484.

was minimal considering the careful attention paid to the production and packaging of victuals by the Victualing Board.[143] Properly prepared and stored meat could be kept as sea for years.[144] During operations, the crew consumed an enormous amount of salted and fresh meats, beer, spirits, oatmeal, peas, and assorted dairy goods.[145] Goat, sheep, ducks, pigs, chickens and even oxen were kept aboard for consumption.[146] Fish could also be acquired if operating in well stocked fishing grounds.

Overall, the great proportion of English seamen, ordinary and able as well as midshipmen were youths between the ages of 16 and 25.[147] For petty officers the numbers skewed, half were over the age of 30.[148] No doubt a sizable percentage of Grave's crewmen were pressed to service; the statistics indicate that half the sailors recruited into the service during the war were recruited by press gangs.[149]

Sickness was a real issue: in the Royal Navy, 23,000 out of 100,000 sailors in 1782 were sick-listed.[150] The problem could have been much worse, if not for cleanliness reforms implemented during the American War.[151] Scurvy was a constant yet completely avoidable affliction, responsible for decimating the ranks of ill-fed seaman throughout the 18th century. William Northcote, aboard the *Prudent* in August of 1781, for example, wrote that 'two thirds' of all English seamen died of scurvy.[152] Nicholas Rodger has

---

[143] Rodger (1986), p. 84.
[144] Bowler (1975), p. 93.
[145] Tuchman (1988), p. 129.
[146] Rodger (1986), p. 69-71. Another animal present in great quantities was, of course, the rat.
[147] Rodger (1986), Appendix VII, 'Age of Ships' Companies', p. 360-1.
[148] Ibid.
[149] Rodger (2004), p. 396.
[150] Baron (2009), p. 315-332.
[151] Rodger (2004), p. 399.
[152] *The Sandwich Papers*, p. 178.

warned that in the medical parlance of the era, the nomenclature of scurvy was employed to encompass a variety of ailments, not all necessarily vitamin C deficiency.[153] John Baron challenges this argument, maintaining that scurvy was a frequent and lethal affliction, readily identified as a deficiency caused by lack of citrus.[154]

A healthy adult required between 45 and 60 mgs of vitamin C a day, a paltry amount, though difficult to obtain with regularity in the open ocean.[155] Regardless, as little as 10 mgs was sufficient to cure an individual afflicted with scurvy, and thus there seems no excuse for the perpetual suffering of the common seamen. As early as 1753 the reformer James Lind had been responsible for popularizing the knowledge that citreous fruit cured the scurvy.[156] That same authority offered a clear understanding of the appropriate treatment, going so far as to suggest to the Admiralty that ship's surgeons should be regularly stocked with various citric 'vegetable acids' as well as sour krout and vinegar.[157]

Nevertheless, the Royal Navy did not mandate the stocking of citrus fruits until 1795, and these naturally would be liable to spoil, so it must be taken with reservation the claim that scurvy was not a regular and frequent occurrence amongst naval crewmen long at sea and voyaging far from fresh provisions throughout the 18th century.[158] De Grasse's *Sagittaire* had actually been disabled in June as a result of 'scurvy', and was thus unable

---

[153] Rodger (2004), p. 308.
[154] Baron (2009), p. 315-332.
[155] Jukes (1975), p. 4151.
[156] Baron (2009), p. 315-332.
[157] Lind seems to have produced some ineffectual mixture of boiled citrus for use aboard warships. *The Sandwich Papers*, p. 178-9. In the land service, scurvy was combated with the sale and later distribution of 'spruce beer' a curative containing vitamin C extracted from the boiling of spruce needles, Bowler (1975), p. 8.
[158] Tuchman (1988), p. 129.

to operate for the rest of the campaign.[159] Water and provisions were acquired when de Grasse reached the Chesapeake, and he had been at sea for only twenty-five days. The voyage from New York to the Chesapeake had taken Graves only three and a half days.[160]

As we have seen, just prior to the battle de Grasse had dispatched some of his crew and officers to accompany the landing of Saint-Simon's corps. The *Citoyen*, for example, was so short handed (by two hundred sailors and five officers) that the 74 gun ship's upper gun deck could not be manned. Perhaps an average of a hundred men from each vessel comes close to reflecting the state of de Grasse's manning problem on the morning of the 5th.[161] The advantage, naturally enough, of this state of affairs was that few boats were left exposed on the decks of the French battleships, reducing the likelihood of splinters. Given that many of the boats in the advance ships of Graves' and Drake's squadrons were damaged or destroyed, it can be seen that de Grasse possessed both an advantage and disadvantage at the time of the engagement. Needless to say, the desire to engage without a full compliment of sailors and officers reflected positively upon the Comte's zeal for close action.

---

[159] Dull (1975), p. 242. In this case one suspects the presence of ailments besides vitamin C deficiency.

[160] Davis (1970), p. 148.

[161] Larrabee (1965), p. 160.

The Controversies.

The unending controversy between Admirals Graves and Hood is fascinating when the context of the battle is considered. Although the controversy should have been buried long ago it is perpetuated today largely by the uncritical acceptance of judgments rendered by navalists over a century ago. In this chapter we shall see that the Hood-Graves controversy was an issue of honor between the two men, and as is so often the case with such things, honor alone was unlikely to change the course of the battle.

To get to the heart of the matter, while Graves launched no official dispatch with the intent of censuring Hood, he did issue a memorandum to Captain Thomas Graves, no relation, aboard the *Bedford*, explaining the intent of his meaning behind the simultaneous flying of the line and close action signals.[162] A rejoinder appears on the back of Hood's copy wherein the latter made it clear that he considered Graves at fault on several accounts.[163] Of the greatest import is Hood's assertion (in his letter to George Jackson, Sept. 16) that the squadron under his command 'did not fire' while the line-of-battle signal flew, his ships being ineffectively deployed 'barley within' random shot.[164] Hood faulted Graves for failing to 'set the example' for close action, an error in Hood's eyes compounded by the presence of contradictory signals flying from the *London*.[165]

---

[162] Corbett (1905) p. 260. Graves had stated that when both signals were flying 'it is not to be understood that the latter signal [for close action] should be rendered ineffectual by the strict adherence to the former [for the line]'.

[163] Corbett (1905) p. 260-1. According to Hood, if one were to actually follow Graves' instructions 'any captain may break the line [of battle] with impunity when he pleases.' Interestingly, Hood did not take this interpretation to heart, the morning of the 5th.

[164] Chadwick (1968), p. 87-91.

[165] Chadwick (1968), p. 91.

Graves, unsurprisingly, provided a different story wherein the flag for close action was raised and that for the line withdrawn 'before any firing began' the line signal having been raised later 'for about five or seven minutes' to encourage the leading warships to extend the line.[166] Based on the narrative of the battle we have encountered above, it is clear that the rear division was not correctly receiving all of the admiral's orders. No explanation besides the fog of war can be provided for the discrepancy between Hood's timing and the *London*'s log, although Thomas White, aboard one of the ships of Hood's division, was convinced he saw the signal for the line flying for almost the entire battle.[167] White's account continues to stand out today for its vigorous, though not very convincing, vindication of Hood's actions. Mahan, for his part in the affair, was convinced by the testimony of Hood and White that the line flag flew throughout the Engagement. That same authority was not convinced, however, that Hood should therefore be acquitted of responsibility for failing to engage more aggressively.[168]

What is the modern academic to make of this confused situation? Certainly one must acknowledge that the events as they took place off the Virginia Capes on September 5th cannot be reduced from their now distant reality to a series of scrawls from log books, however diligently categorized and scrutinized by historians past. More recently, John Grainger has stated his opinion that Hood had more to lose than Graves to gain with regard to reputation, and therefore the former produced the entire affair by arguing that a decisive result could have been achieved had his own wisdom been followed.[169] Grainger

---

[166] *The Sandwich Papers*, p. 182.

[167] White sources the *Monarch*'s logbook as proof of his claim, White (1830), p. 44-5.

[168] Mahan (1913), p. 183.

[169] Grainger (2005), p. 168.

went as far as to blame Hood for his move northward after the 25th of August, in effect surrendering Chesapeake Bay to de Grasse.

David Howarth believed that with the line of battle and close action signals flying the respective captains, apparently, were 'left to scratch their heads' in confusion.[170] But was it the case that Hood was compelled to avoid combat because of the 'contradictory' signaling early in the battle?[171] Even had the signal for the line been flying the entirety of the battle, as Hood claimed, it had obviously not prevented Drake and Graves from engaging close. Furthermore, as Peter Padfield has argued, Hood had been trained by Rodney to engage regardless of the presence of the line signal, if so ordered.[172] Clearly *Hood showed a lack of zeal*, although out of spite or trepidation, it is difficult to say.

Graves had been court-martialed in an incident for which he was acquitted of blame at the age of 32. One may therefore appreciate his disgust at the affair with Hood. Thus, after the battle Graves had himself transferred to a subordinate command in the West Indies station, his flag aboard the *Ramillies*. Graves despised the post, but was not long there as Rodney ordered him to England in convoy with the prizes from *Les Saintes*.[173] The result of this voyage was disastrous, his fleet encountering a storm, and, possibly the result of galvanic-induced ferrous corrosion, three of his ships foundered, the *Ramillies* and the captured *Ville de Paris* and *Glorieux*. Nevertheless, Graves' career continued into the French Revolutionary Wars, where at the First of June, second in

[170] Howarth (1974), p. 264.
[171] Larrabee (1968), p. 168.
[172] Ibid., p. 270
[173] Chadwick (1968), p. lxxvi.

command to Hood, he was badly wounded and subsequently paid off, being made a peer.[174] So much for Admiral Graves.

De Grasse, for his part, would be unable to complete his strategic objectives after returning to the Caribbean, due to his defeat and capture by Lord Rodney, 12 April, 1782 at the Battle of the Saintes. Rodney, taking advantage of his numerical superiority (36 to 30), and confusion in the French formation, was able to isolate and attack de Grasse's formation, although the rest de Grasse's fleet was able to make good its escape.[175]

De Grasse, now a prisoner of war, was received in London as a celebrated figure on August 3rd, and met for an audience with George III six days later. Upon repatriation to France, de Grasse was brought before a court hearing, although he was acquitted of charges in May, 1784. Nevertheless, at Louis XVI's displeasure, de Grasse was released from service. He died in Paris in 1788.[176] In recognition of the debt owed to a man, de Grasse features regularly in American naval heritage and mythology.[177]

Jonathan Dull described the campaign of de Grasse as 'the most important and most perfectly executed naval campaign in the age of sail' with minor reservations held for the Trafalgar campaign.[178] Dull went on to rendered this verdict of de Grasse: although an 'indifferent tactician' the Comte was 'a commander whose strategic vision made possible the most important naval victory of the 18th century.'[179] In 1927, Philip Dillon employed similar rhetoric to capture the crux of the debate surrounding de Grasse.

---

[174] Chadwick (1968), p. lxxvi-ii, & Shea (1971), p. 69.
[175] Rodger (2004), p. 353, & Chadwick (1968), p. 248, Scott (1990), p. 332.
[176] Chadwick (1968), p. 249.
[177] See Appendix V & VI. 'Comte de Grasse Street' is next to the national monument in modern Yorktown.
[178] Dull (1975), p. 239.
[179] Ibid., 248.

According to Dillion, the Comte was at once little more than 'the man who was defeated' by Rodney at the Saintes, but simultaneously, through his move north in August 1781, 'the man who defeated the English fleet at Chesapeake Bay and thus directly won the Independence of America'.[180]

Claude Macneran believed that de Grasse had very much won the battle on the 5th 'before the first' shot because of his 'one bold decision' to come north with all his force.[181] Emphasis must be placed on the singular nature of the Comte's decision to sail for the Chesapeake, bringing with him much the entirety of his fleet.[182] Indeed, William James has related, apparently spuriously, that de Grasse actually disregarded orders to send ten of his ships back with convoy to France, as he was so 'determined to operate with all his force' against the North American squadron.[183]

National divisiveness nevertheless remains evident. French historiography revels in the battle of the 5th as the portent of the decline of the British Empire, but likewise targets de Grasse for his embarrassing capture and defeat at *Les Saintes*.[184] Past histories in the main galvanized into two parties, those who held the English commanders to blame for some fault or want, and those who credited de Grasse with the foresight to bring his entire fleet from the Caribbean to the Chesapeake. The former school characterized Graves' defeat to poor signaling or lack of zeal as rendered through strict adherence to

---

[180] Dillon (1927), p. 193.
[181] Maceran (1978), p. 488.
[182] Dull (1975), p. 243.
[183] James (1926), p. 288. James was likely referring to the plan for operations against Jamaica, which, in accordance with the naval ministry's wishes, was to commence after de Grasse's return from North America in the winter. Dull (1975), p. 244.
[184] Grainger (2005), p. 54.

the 'inflexible' fighting instructions.[185] It is not a coincidence that even into the 21st century historians have been exceedingly critical of Graves, Hood and the outcome of the battle itself. A common theme in the popular literature has been to suppose that had 'a Nelson' or some other British Marduk been commanding 'doubtless' the history would have unfolded very differently.[186] Graves himself is regularly denigrated in the literature by such statements as 'Unfortunately for the English, Admiral Graves, the senior officer, is commanding rather than Hood.'[187] John Colvin, writing in 2003, to provide another example, felt it worth noting to the eternal discredit of Graves, that upon studying Virginia Capes one must by virtue of inevitability, conclude that 'had Nelson, St Vincent or any other maritime hero been present' the English would have secured a major victory.[188]

It is in part this enduring sense of 'recrimination and bitterness' combined with the always tantalizing but equally ephemeral lure of the counterfactual that continues to entreat historians into revisiting the events.[189] Of course, the argument that a different commander would have delivered a spectacular victory is especially absurd given the nature of parallel line age of sail naval combat. Indeed, it was only by rejecting the well-practiced methods that had so clearly failed the English in the past that the Nelsons and the St. Vincents came to develop their unique approach. Obviously Graves could not have been a Nelson before Nelson, when the latter himself had 'long wrestled with the

[185] Ekins (1828), p. 154.
[186] Smith (1973), p. vii. Foreword by Alexander Kent.
[187] Manceron (1988), p. 488.
[188] Colvin (2003), p. 202.
[189] Willis (2008), p. 209.

problem of how to transform limited into decisive victory.'[190] Indeed, the counterfactual efforts in this direction are especially damaging to the reputation of Graves and de Grasse and all those involved in the battle who fought with all their skill in the manner they had been trained to do. The belief that there was *some other way* is exactly what promulgated the Hood-Graves controversy in the first place.

Fuller said this of the battle of Virginia Capes: 'this indecisive and fateful engagement led to the doom of Cornwallis, and consequently must take its place among the decisive battles of the world.'[191] Fuller's statement recognized that de Grasse was just as much in command of the bay before the battle as after it. The battle of the Capes facilitated Cornwallis' defeat in part, by its insignificance. On the other hand the Royal Navy had been decisively defeated at the moment that mattered the most. There was to be no rescue. In the context of the siege of Yorktown, it became clear that the indecisive French victory was more than enough to seal the fate of Cornwallis, and America itself.

[190] Bryant (1972), p. 129.
[191] Fuller (1963), p. 331.

Conclusions.

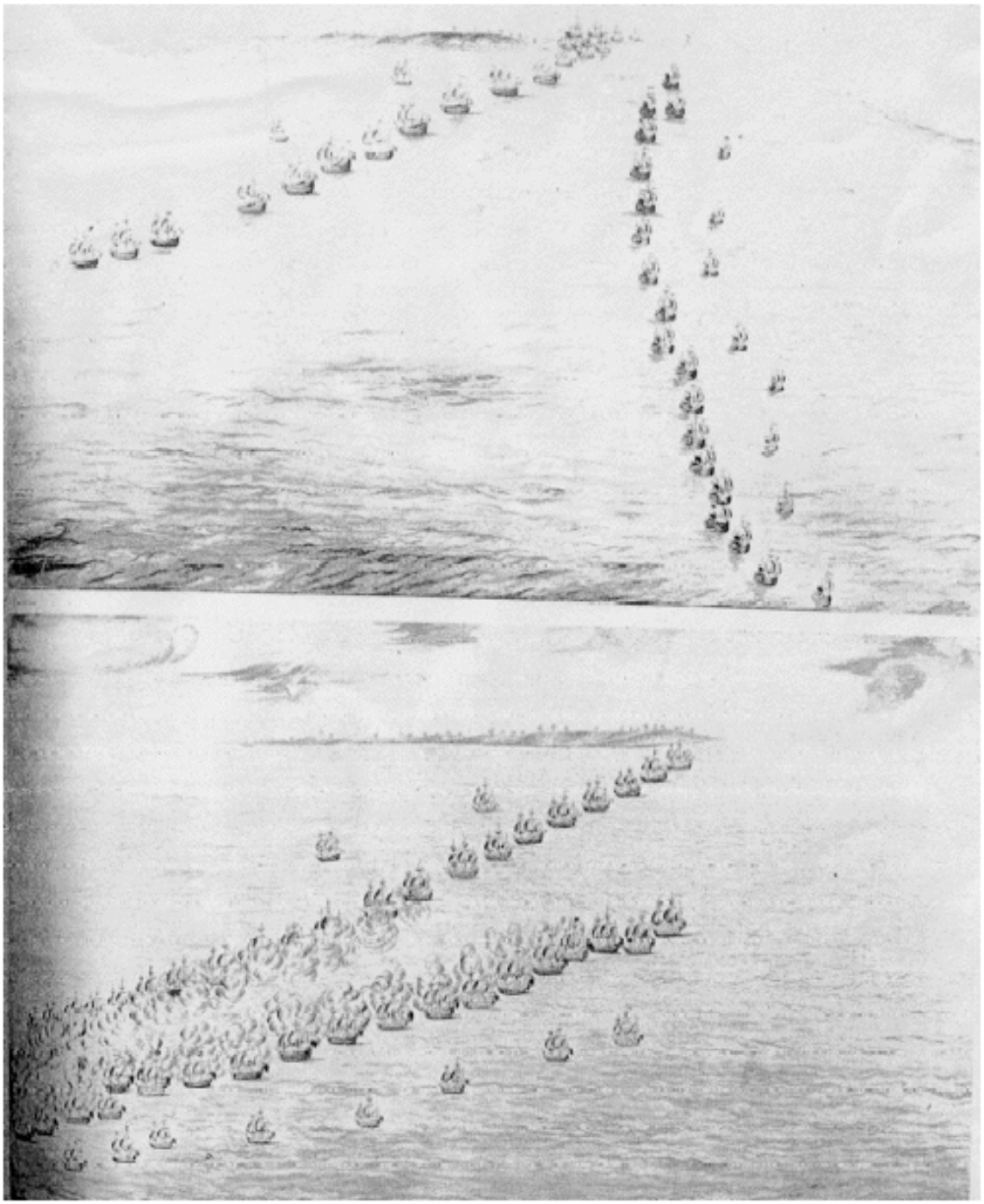
A titanic battle, but of little importance? Hardly. The Battle of the Capes punctuated the conclusion of the campaign that finalized the Allied victory in the American Revolution, and for over two hundred years has been replete of controversies, some more warranted than others. Nevertheless, this was the decisive battle of the Revolution, and perhaps of the 18th century.

As a last word, let it be noted that in a similar vein to the Nelson before Nelson argument, it is common for historians discussing the Chesapeake to claim that 'one signal ruined everything'.[192] Although dramatic, this cliché places too great an emphasis on the issue of communication, which, as it happened, played only a small, albeit significant, role in the battle. Technology certainly played a role, as we have seen, the warships involved were similar but not *the same*, everything colored by slight variations. This essay has proactively focused away from the orthodox interpretations to provide instead an understanding of *what* the battle was like, and *why* it played out as it did. There was no single cause of single factor one could point to in providing an explanation. Nevertheless, this author does not see the Hood-Graves controversy ending any time soon, nor is de Grasse likely to be denigrated from his standing as strategic genius, although all he really did was follow orders, with a keen insight for timing. If only Graves and Hood had possessed Marconi sets.

[192]Larrabee (1968), p. 168, quoting from James (1926).

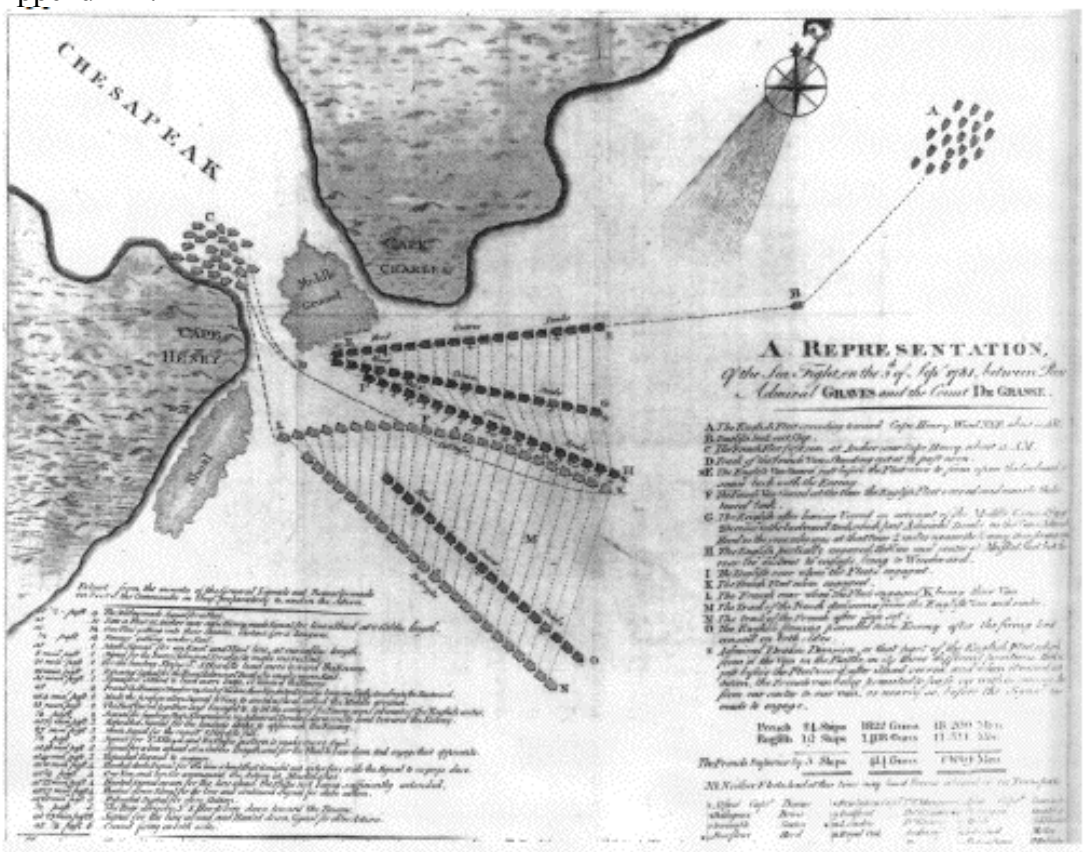
In closing, I wish to warn that the above was composed with only the most rudimentary understanding of French, all the sources listed below were either written or translated into English at one time or another.

Appendix I.



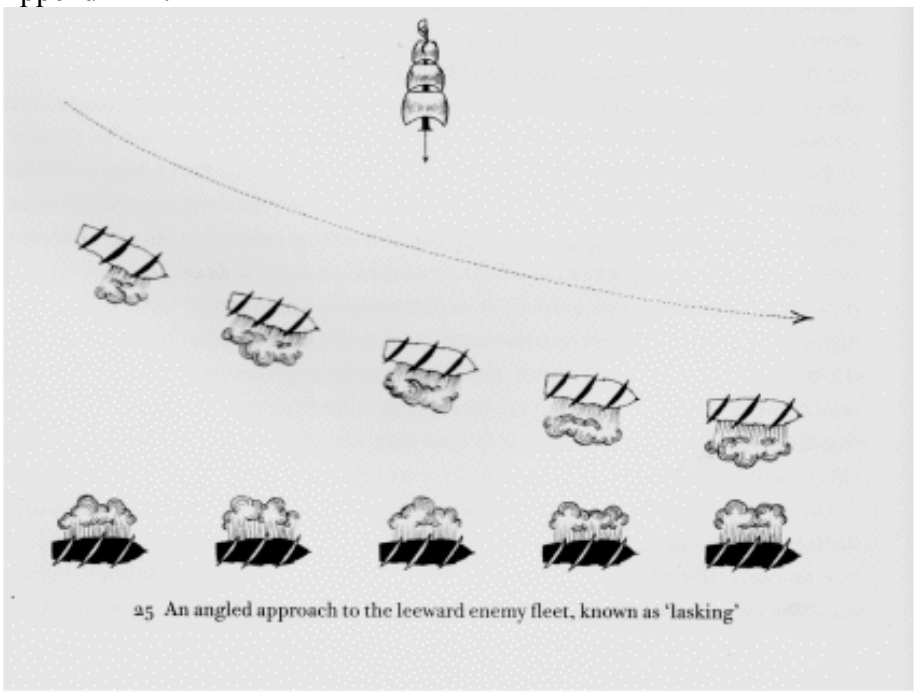
'Two wash drawings made by an unidentified artist showing the two stages of the Battle of Chesapeake Bay' from Kemp (1969), *A History of the Royal Navy*, p. 93. Panel one shows the situation at 2 pm, Graves having yet to wear into his oblique angle of attack, de Grasse still straggling out of the bay. The second panel depicts the zenith of the cannonade, shortly before 6 pm, the entirety of the English line up to the *Barfluer* firing.

Appendix II.



'A Representation of the Sea Fight on the 5th of Sepr [sic] 1781, between Rear Admiral Graves and the Count De Grasse' from the *Political Magazine*, quoted from Gardiner (1996), p. 118.

Appendix III.



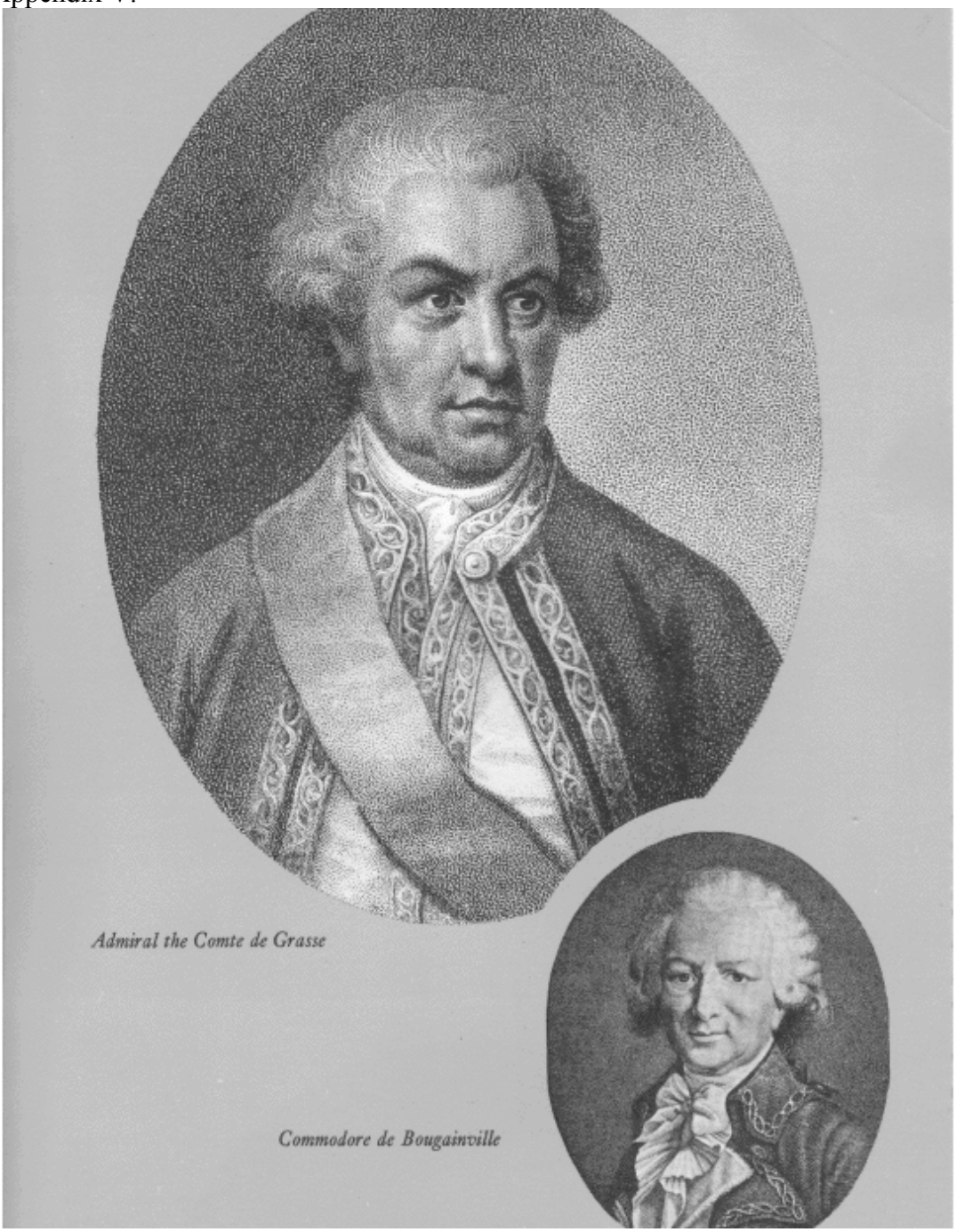
'Lasking' from Willis (2008), p. 124.

Appendix IV.



'Diagram 16. – Battle off the Chesapeake, September 5th, 1781, 2.15 p.m.' from James (1926), p. 289.

Appendix V.



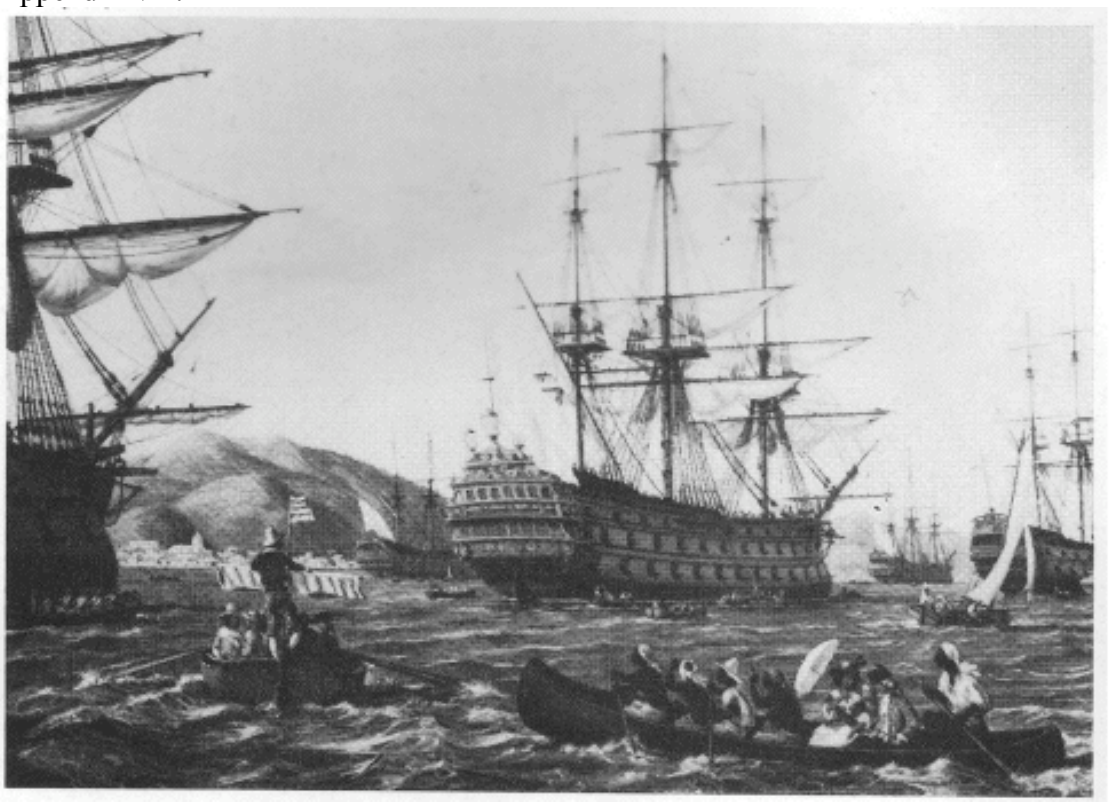
'De Grasse & de Bougainville' from Larrabee (1965), between pages 146-7.

Appendix VI.



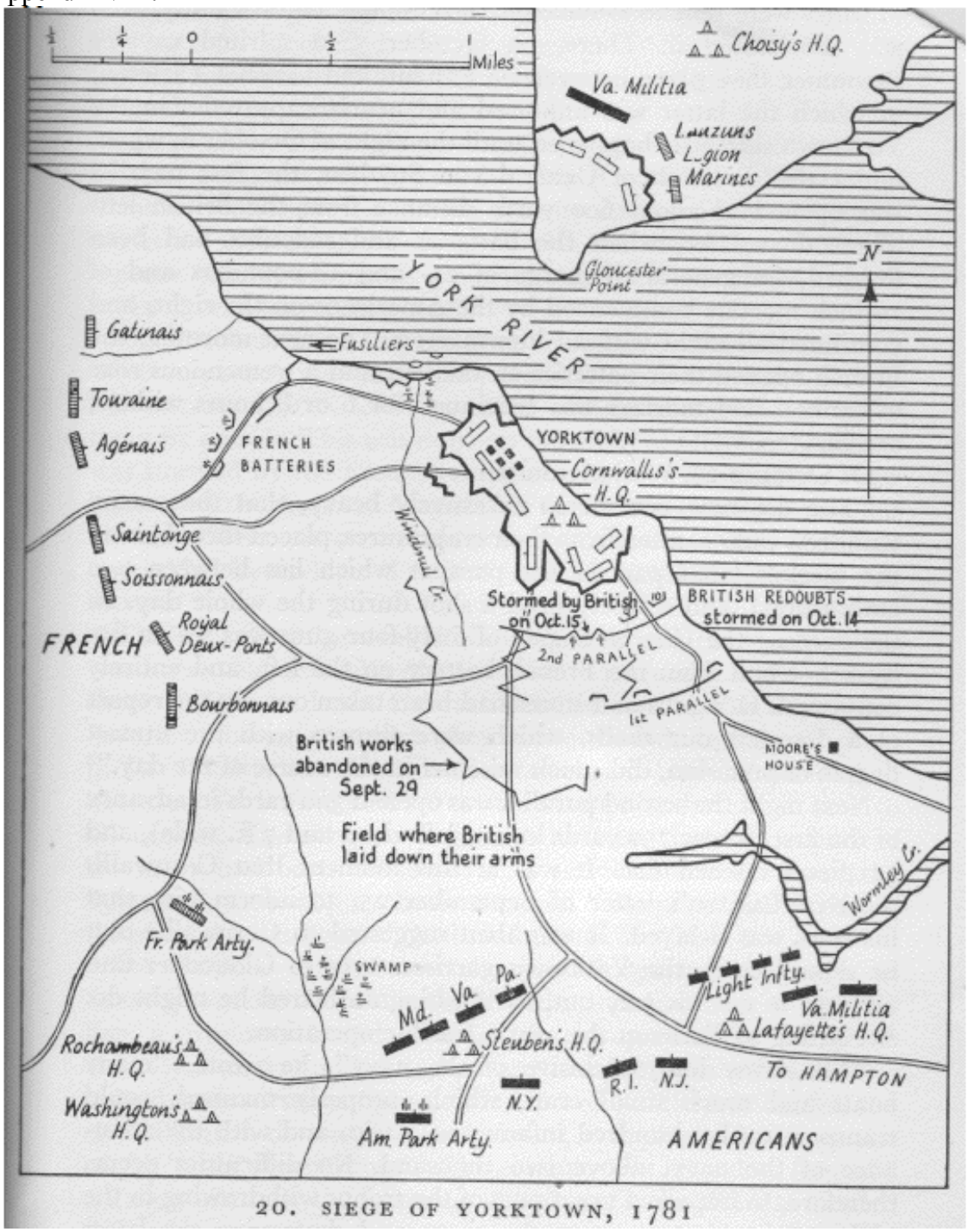
USS *Comte de Grasse* (DD 974) & USS *Deyo* (DD 989) flank USS *Iowa*, taken in 1987. Public domain image from the Wikipedia commons. DD 974 was decommissioned in 1998, and sunk as a target in 2006. It was the third USN ship named after de Grasse. <http://www.navysite.de/dd/dd974.htm> (August 19, 2008).

Appendix VII.



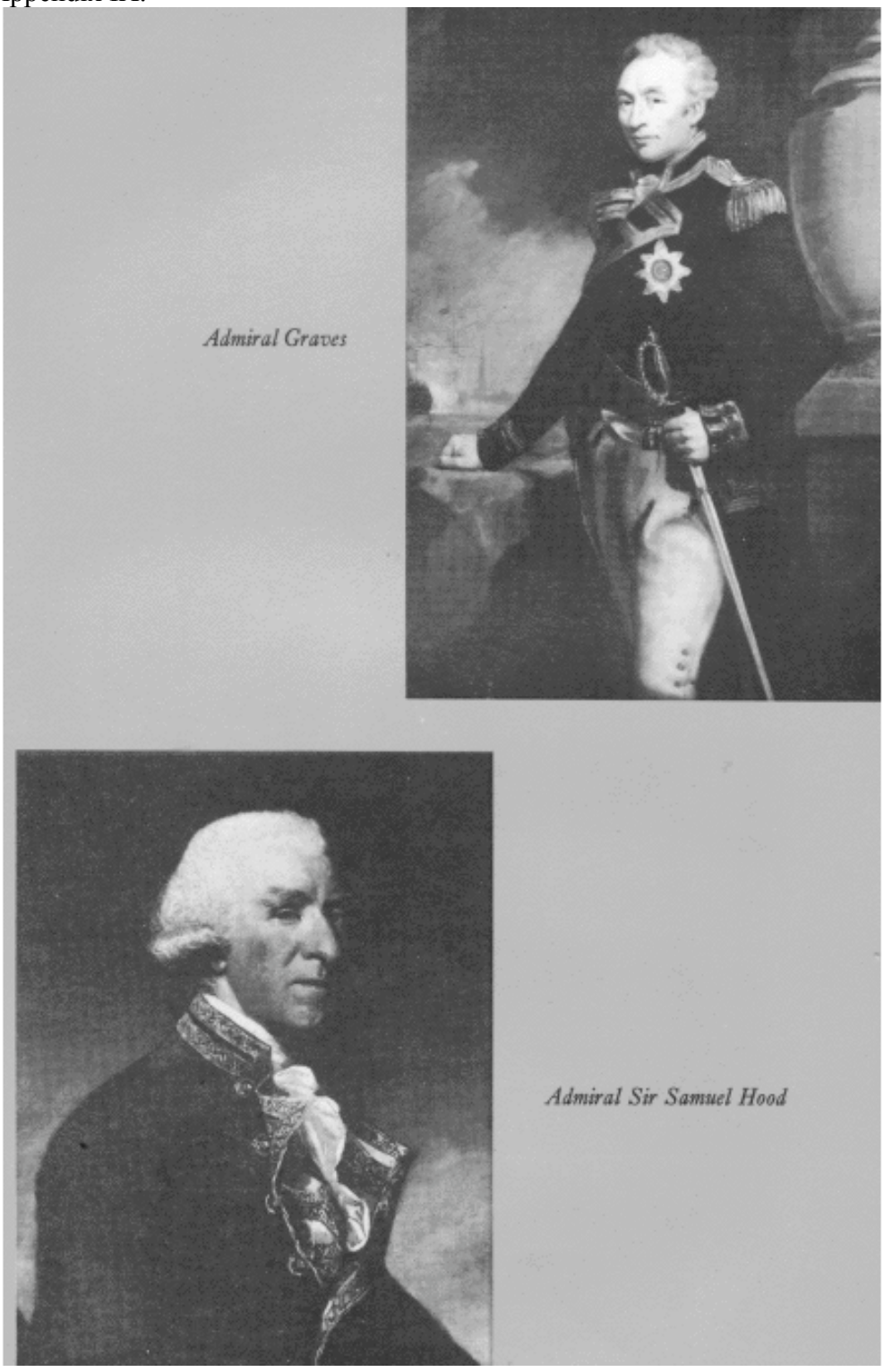
The *Ville de Paris* 'off San Domingo, *by G Alaux*' from Jenkins (1973), plate X.

Appendix VIII.



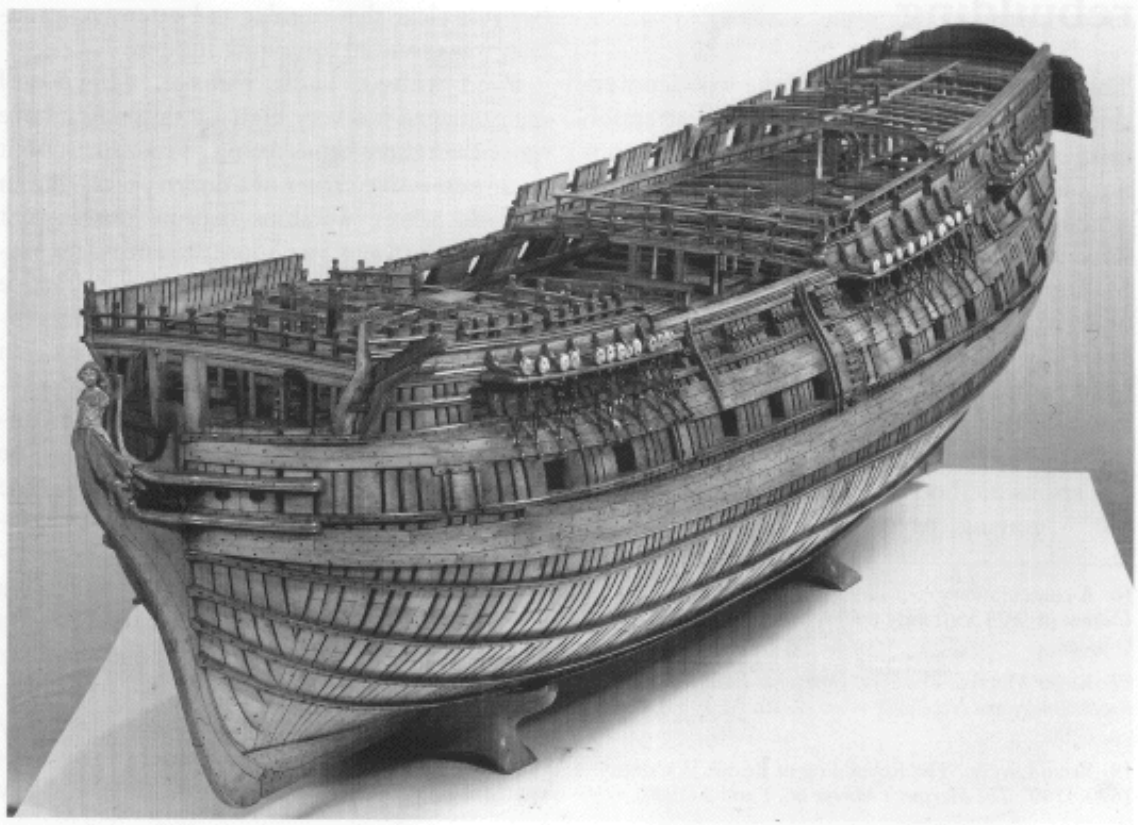
'Siege of Yorktown, 1781' from Fuller (1963), p. 335.

Appendix IX.



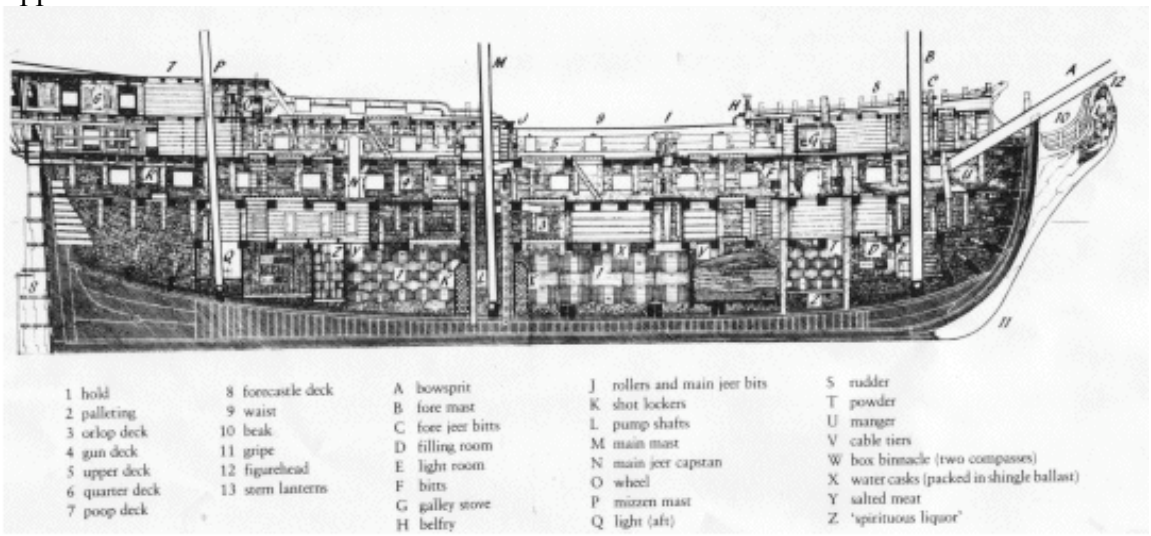
'Rear Admiral of the Red, Thomas Graves & Rear Admiral of the Blue, Samuel Hood' from Larrabee (1965), between pages 162-3.

Appendix X.



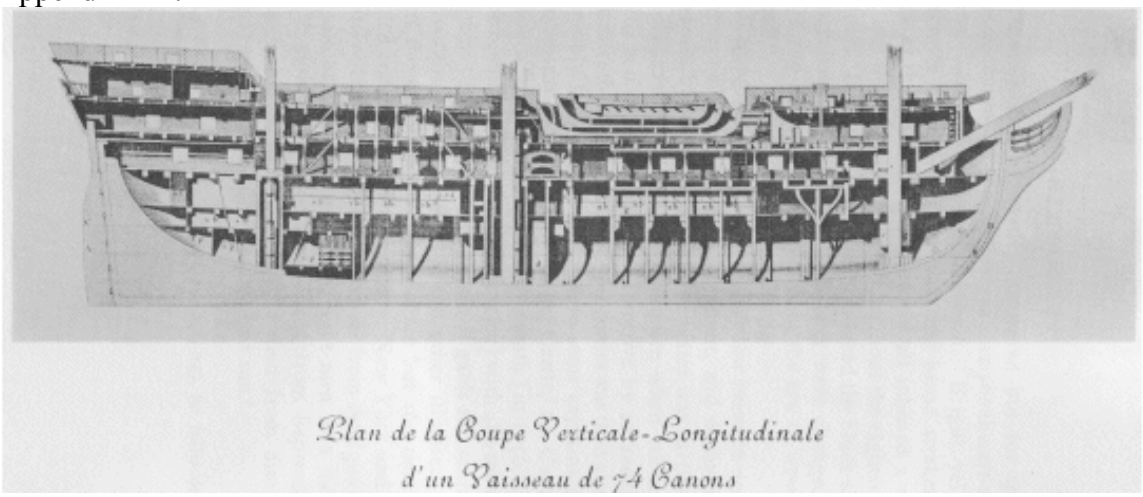
‘A demonstration model of the British 74 *Bellona* of 1760, exposing the framing and deck beams. The only planking applied are the wales and lower ribbands’ from Gardiner (2004), p. 123.

Appendix XI.



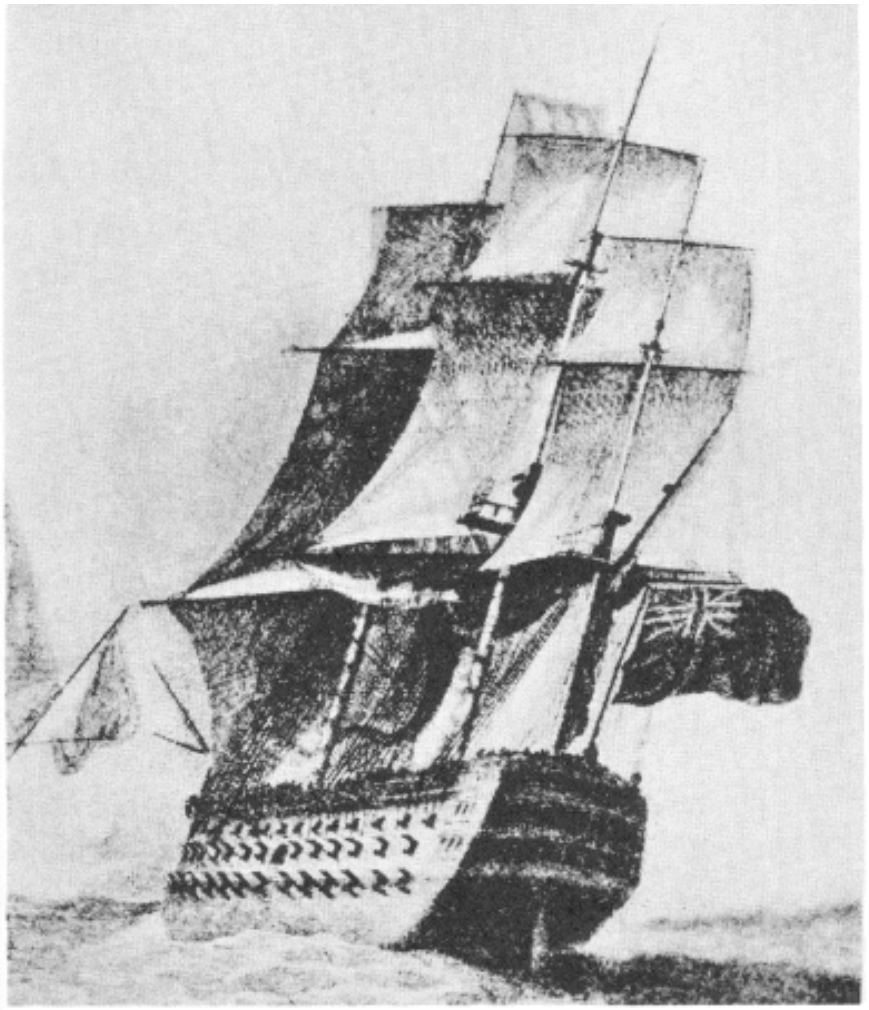
‘The Cross-Seciton Of A 74 Gun Ship’ front-piece from Rodger (1986). Compare with the lighter built *Marine Royale* vessel, below.

Appendix XII.



'Plan Cut Vertically & Longitudinally for a Vessel of 74 Cannons' from Chadwick (1965), between pages xxx-xxxi. Compare the slender columns and lighter framing with the heavier English built ship above.

Appendix XIII.



'The Barfleur: From "The King's Ships," by courtesy of L. H. Parker Bros.' Chadwick (1965), between pages 100-1.

Appendix XIV.

Orders of battle of the two fleets,
Battle of the Chesapeake,
September 5, 1781

BRITISH (19)[a]

Frigates	*Ships*	*Guns*	*Commanders*
	Alfred	74	W. Bayne
Santa Monica	*Belliqueux*	64	James Brine
Richmond	*Invincible*	74	Charles Saxton
	Barfleur	90	Sir Samuel Hood, Rear-Admiral of the Blue
Solebay			Alexander Hood
La Nymphe	*Monarch*	74	Francis Reynolds
Adamant	*Centaur*	74	J. Inglefield
Salamander, fire ship	*America*	64	S. Thompson
Sybil	*Resolution*	74	Lord R. Manners
	Bedford	74	Thomas Graves
La Fortunée	*London*	90	Thomas Graves, Rear-Admiral of the Red
			D. Graves
	Royal Oak	74	J. P. Ardesoif
	Montagu	74	George Bowen
	Europe	64	S. Child
	Terrible	74	Hon. W. C. Finch
	Ajax	74	N. Charrington
	Princessa	70	Francis S. Drake, Rear-Admiral of the Blue
			C. Knatchbull
	Alcide	74	C. Thompson
	Intrepid	64	A. J. P. Molloy
	Shrewsbury	74	Mark Robinson

[a] The fleet approached the Chesapeake in the above order, but entered action in reverse order, headed by the *Shrewsbury*.

After the battle and the return to New York, the *Terrible*, 74, was replaced by the *Prudent*, 64; and the *Torbay*, 74, and *Prince William*, 64, joined the fleet from Jamaica. Rear-Admiral Robert Digby added the *Prince George*, 90, *Canada*, 74, and *Lion*, 64, for the fruitless voyage back to the Chesapeake.

'Appendix I' from Larrabee (1964), p. 241.

Appendix XV.

FRENCH (24)[b]

(approximately in the order of engaging)

Ship	*Guns*	*Commander*
Pluton	74	D'Albert de Rions
Marseillais	74	Castellane Majastres
Bourgogne	74	Comte de Charitte
Diadème	74	M. Montecler
Réfléchi	64	De Boades
Auguste	80	De Bougainville, chef d'escadre
Saint-Esprit	80	Chabert Cogolin
Caton	64	Comte de Framond
César	74	Coriolis d'Espinouse
Destin	74	Comte du Maitz de Goimpy
Ville de Paris	110	Rear-Admiral Comte de Grasse Vaugirard de Rosnay, Chief of Staff
Victoire	74	Chevalier d'Albert Hippolyte
Sceptre	74	Comte de Vaudreuil
Northumberland	74	Marquis de Briqueville
Palmier	74	D'Arros Argelos
Solitaire	64	Chevalier de Cicé Champion
Citoyen	74	Comte de Thy
Scipion	74	Clavel Ainé
Maganime	74	Chevalier de la Bègue
Hercule	74	Chevalier Turpin du Breuil
Languedoc	80	Baron de Monteil, chef d'escadre
Zélé	74	Chevalier Gras Préville
Hector	74	Renaud d'Allen
Souverain	74	Chevalier de Glandèves

[b] In addition, *Glorieux*, 74, *Triton*, 64, and *Experiment*, 50 were detached to blockade the James and York Rivers. After the battle, Comte de Barras brought from Newport *Duc de Bourgogne*, 80, *Neptune*, 74, *Conquérant*, 74, *Éveillé*, 64, *Provence*, 64, *Jason*, 64, *Ardent*, 64, and two frigates. De Grasse had seven frigates—*Andromaque*, *Rallieuse*, *Surveillante*, *Concorde*, *Gentille*, *Diligente*, and *Aigrette*—and captured two more—*Iris* and *Richmond*—after the battle of September 5.

'Appendix I' from Larrabee (1964), p. 242.

Works Cited.

Allen, Joseph (1852), *Battles of the British Navy*, vol. I (London: Henry G. Bohn).

Barnes, G. R. & Owen, J. H. (1938), *The Private Letters of John, Earl of Sandwich, First Lord of the Admiralty 1771-1782*, Vol. 4. (London: the Navy Records Society). Referred to as *The Sandwich Papers*.

Baron, Jeremy Hugh (2009), 'Sailors' scurvy before and after James Lind – a reassessment' in *Nutrition Reviews*, vol. 67, no. 6, pp. 315-332.

Bowler, Arthur R. (1975), *Logistics and the Failure of the British Army in America* (Princeton: Princeton University Press).

Bryant, Arthur (1972), *Nelson* (Redhill: Love & Malcomson Ltd).

Callender, Geoffrey (2004), 'Hamilton, Sir Richard Vesey (1829-1912)', rev. Andrew Lambert, in *The Oxford Dictionary of National Biography* (Oxford University Press).

Clinton, Henry (1954), *The American Rebellion*. Ed., William B. Willcox. (New Haven: Yale University Press). Sir Henry Clinton's original memoirs of war as well as an informative introduction by Willcox.

Corbett, Julian S (1905) *Fighting Instructions 1530-1816* (London: the Navy Records Society).

- (1908) *Signals & Instructions 1776-1794* (London: the Navy Records Society).

- (1911), *Some Principles of Maritime Strategy* (London, e-text from Project Gutenberg).

Chadwick, French Ensor (1968), *The Graves Papers and Other Documents* (New York: Arno Press, Inc.). Invaluable source concerning the Graves-Hood controversy, including letters and logbooks from the English and French. Extensive although Wilsonian introduction by Rear-Admiral Chadwick.

Chidsey, Donald B. (1963), *Victory at Yorktown* (New York: Crown Publishers, Inc). Popular semi-fictionalized history of the Yorktown campaign.

Colvin, John (2004), *Decisive Battles* (London: Headline Book Publishing). Straight Fuller, with a few deviations.

Conway, Stephen (2000), *The British Isles and the War of American Independence* (Oxford: Oxford University Press).

Corwin, Edward (1962), *French Policy and the American Alliance of 1778* (Hamden: Archon Books).

Davis, Burke (1970), *The Campaign That Won America* (New York: The Dial Press). Popular, semi-fictionalized.

Dillon, Philip R (1927), 'The Strange Case of Admiral de Grasse: Forgotten by France and America' in *The Pennsylvania Magazine of History and Biography*, vol. 51, no. 3.

Douglas, Howard (1855), *A Treatise on Naval Gunnery* (London: John Murray).

Duffy, Michael (2000), 'Samuel Hood, First Viscount Hood, 1724-1816', in *Precursors of Nelson*, Ed. Peter Le Fevre & Richard Harding (London: Chatham Publishing), pp. 249-278.

Dull, Jonathan R. (1975), *The French Navy and American independence* (Princeton: Princeton University Press).

- (1985), *A Diplomatic History of the American Revolution* (New Haven: Yale University Press).

Ekins, Charles (1828), *The Naval Battles of Great Britain*, 2nd edn. (London: Baldwin & Cradock).

Fuller, J. F. C. (1963), *The Decisive Battles of the Western World*, Vol., 2 (London: Eyre & Spottiswoode).

Gardiner, Robert (1996), *Navies and the American Revolution, 1775-1783*, ed. Robert Gardiner (London: Chatham Publishing).

- (2004), *The Line of Battle*, eds., Robert Gardiner & Brian Lavery (London: Conway Maritime Press).

Grainger, John D. (2005), *The Battle of Yorktown, 1781* (Suffolk: Boydell & Brewer Ltd).

Graves, William (1784), 'Plan of the Naval Engagement off the Chesapeak, on the 5th of September 1781, between Rear Admiral Thomas Graves, and the Comte de Grasse', *Political Magazine and Parliamentary, Naval, Military, and Literary Journal*, Vol. VII, January (London: J. Bew), pp. 20-34. Overly sensitive and generally misleading account of the battle by Adm. Graves' brother, with much evidence drawn from the logs of the fighting ships.

Hamilton, Vesey (1907), 'Hood' & 'Rodney', *From Howard to Nelson*, ed. John Laughton (London: William Heinemann), pp. 359-396. In his retirement, Rear

Admiral & First Sea Lord Vesey worked closely with Laughton on a number of projects.

Hannay, David (1895), *Letters Written by Sir Samuel Hood (Viscount Hood) In 1781-2-3* (London: Spottiswoode for the Naval Records Society).

- (1898), *A Short History of the Royal Navy 1217-1815*, vol. II (London: Methuen & Co.).

Hatch, Charles E. (1957), *Yorktown and the Siege of 1781* (Washington, DC: Printed for the National Park Service).

Howard, Michael (1976), *War in European History* (London: Oxford University Press).

Howarth, David (1974), *Sovereign of the Seas* (New York: Atheneum).

James, William M. (1926), *The British Navy in Adversity* (London: Longmans, Green and Co., Ltd).

Jenkins, E. H. (1973), *A History of the French Navy* (London: MacDonald & Jane's). Largely political and administrative history with brief operational histories.

Johnston, Henry P. (1971), *The Yorktown Campaign and the Surrender of Cornwallis, 1781* (New York: Da Capo Press).

Jukes, Thomas H. (1975), 'Further comments on the ascorbic acid requirement' in *Medical Sciences*, vol., 72, no. 10, October (Berkley: University of California), pp. 4151-2.

Kemp, Peter (1969), *History of the Royal Navy* (London: Arthur Barker Limited).

Kennedy, Paul M (1976), *The Rise and Fall of British Naval Mastery* (New York: Charles Scribner's Sons).

Khan, Herman (1961), *On Thermonuclear War* (Princeton: Princeton University Press). Professor Khan's infamous and authoritative lectures on the means the methods of hydrogen-bomb warfare. Generally fascinating; relevant here for its unique statistical methodology and historical insight.

Lambert, Andrew (2005), 'Review: The British Navy and the State in the Eighteenth Century' in *The Journal of Military History*, vol. 69, no. 1 (January), pp. 226-227.

Larrabee, Harold (1965), *Decision at the Chesapeake* (London: W. & J. Mackay & Co., Ltd.). Comprehensive although dated study, drawing extensively from Mahan, the *Political Magazine* and Chadwick.

Laughton, John K (1887), *Studies in Naval History: Biographies* (London: Longmans, Green, and Co).

Lavery, Brain (1987), *The Arming and Fitting of English Ships of War, 1600-1815* (London: Conway Maritime Press). The definitive source for English warship minutity.

Lewis, Charles (1980), *Admiral de Grasse and American Independence* (Annapolis: United States Naval Institute).

Mahan, Alfred Thayer (1913), *The Major Operations of the Navies in the War of American Independence* (London: Sampson Low, Martson & Company, Ltd). Mahan bases his analysis on the testimony of White and the *Political Magazine*, building on his research from the famous 1890 volume.

Manceron, Claude (1978), *The Wind From America*, trans. Nancy Amphoux, vol. 2 of *The French Revolution* (New York: Alfred A. Knopf).

Padfield, Peter (1999), *Maritime Supremacy* (London: John Murray).

Palmer, Michael A (1997), '"The Soul's Right Hand": Command and Control in Age of Fighting Sail, 1652-1827' in *The Jouranl of Military History*, vol. 61, October, pp. 679-706.

Quataert, Donald (2005) *The Ottoman Empire, 1700-1922*, 2nd ed. (Cambridge University Press).

Rodger, Nicholas (1986), *The Wooden World: An Anatomy of the Georgian Navy* (London: Collins).

- (1993), *The Insatiable Earl* (London: Harper Collins).

- (2000), 'George, Lord Anson, 1697-1762', *Precursors of Nelson*, Ed. Peter Le Fevre & Richard Harding (London: Chatham Publishing), pp. 177-200.

- (2001), 'Sea-Power and Empire, 1688-1793' in *The Eighteenth Century*, ed., P. J. Marshall, Vol. II (Oxford: Oxford University Press), pp. 169-182.

- (2004), *The Command of the Ocean* (New York: W. W. Norton & Company).

- (2008), 'Historiographical Review: Recent Work in British Naval History 1750-1815' in *The Historical Journal*, vol. 51, no. 3, pp. 741-751.

Sands, John. O. (1983), *Yorktown's Captive Fleet* (Charlottesville, University Press of Virginia). Discusses the history of the salvage attempts conducted at Yorktown to recover artifacts from the English vessels lost in the siege.

Scott, H. M. (1990), *British Foreign Policy in the Age of the American Revolution* (Oxford: Clarendon Press).

Shea, J. G. (1971), *The Operations of the French Fleet Under the Count De Grasse in 1781-1782* (New York: Da Capo Press). Translation of a relatively factual manuscript written under the pseudonym of 'the Chevalier de Goussencourt' by an officer who served aboard one of the French battleships.

Smith, Myron J. (1973), *Navies in the American Revolution: A Bibliography* (Metuchen: Scarecrow Press, Inc.). A comprehensive annotated bibliography, the stuff that doctoral thesis are made of.

Southworth, John V. D. (1968), *The Age of Sails* (New York: Twayne Publishers). Contains possibly the most inaccurate and orthodox account of the battle written to date.

Syrett, David (1989), *The Royal Navy in American Waters, 1775-1783* (Aldershot, Hants: Scolar Press).

Taylor, Alan (2002), *American Colonies*, ed., Eric Foner (New York: Penguin Books).

Tilley, John A. (1987), *The British Navy and the American Revolution* (Columbia: University of South Carolina Press).

Tindall, George Brown & Shi, David E. (2004), *America A Narrative History*, 6th edn., vol. I (New York: W. W. Norton & Company Inc). Textbook.

Tuchman, Barbara (1988), *The First Salute* (New York: Alfred A. Knopf). Popular history.

White, Thomas (1830), *Naval Researches* (London: Whittaker, Treacher, and Arnott). Overly sensitive to Hood's reputation having presumably served under him at Virginia Capes, later becoming a Captain, R.N.

Whiteley, Peter (1996), *Lord North: The Prime Minister Who Lost America* (London: The Hambledon Press).

Willis, Sam (2008), *Fighting at Sea in the Eighteenth Century* (Woodbridge: The Boydell Press).