

The Sea Rover's Practice

Notes & Errata Provided by the Author, Benerson Little (September 28, 2011)

Extensive notes on content, based on research and discovery subsequent to publication, are provided below. Critical typos are also noted. I recommend reviewing notes and errata for *The Buccaneer's Realm*, *Pirate Hunting*, and *How History's Greatest Pirates...* as well, and also the probably forthcoming title on pirate myths. Copyright Benerson Little 2008-2011.

Errata

Page 4, last paragraph, typo, "Peter Drake" should be "Francis Drake." The reference is correct in the index.

Page 35, last paragraph, second line, delete the comma after *corsaire*. M. Merrien is a maritime historian, although he probably would not mind being referred to as a *corsaire*.

Page 55, Blackbeard's ship, the *Queen Anne's Revenge*. Recent research by maritime archaeologists indicates that the ship was probably *not* a flute.

Page 56, Blackbeard and the *Scarborough* man-of-war. There is no evidence that the engagement ever took place. The man-of-war's logs do not mention the fight. The ultimate source appears to be Thomas Southey's *Chronological history of the West Indies* (London: Longman et al, 1827), vol. 2:212. I could not discover where Southey got his information.

Page 65, 2nd paragraph, powder loads. Revise to read, "500 to 650, or even more, depending on powder quality and musket caliber" as opposed to "1000 to 1300"; and "one and a half to two shots" as opposed to "three shots." For some reason I miscalculated from 40 pounds instead of 20. However, if larger charges than conventional were used, these quantities would be reduced. See below, "Page 61," "Page 64," and "Page 65" for more details.

Page 68, 2nd paragraph, the second line should read: "The cutlass..., and may have been used similarly to..."

Page 139-140, great gun illustrations. Throughout the period, the bed carriage (illustrated on page 140) was the norm. The truck and axle carriage did not appear until roughly 1730 and probably was not common for at least two more decades.

Page 141, 1st paragraph, chambers for chamber-loaded swivel guns. Chambers were *not*, as I stated, loaded with powder and shot, but only with powder and a tompon or wooden cylinder if the powder load did not fill the chamber entirely. The shot, whether round shot or a form of case shot, was pushed into the barrel, then the chamber was loaded into the swivel gun. See below, "Page 141," for more information.

Page 244, Captain Uring convalesced in Virginia, not North Carolina. Author's error.

Notes, Comments, and Observations

Page 31, 3rd paragraph, ship's officers. In 1686 Bartholomew Sharp, commanding the *Josiah* frigate, formally lists Paul Abney as the "lieutenant" of the *Josiah*. Sharp, a buccaneer, had recently committed piracy at Campeche and on the sea, and was assisting the governor of Bermuda in dealing with an insurrection, under authority of an almost certainly invalid commission. Sailing under, in theory at least, a "lawful" commission and wanting to avoid charges of piracy, Sharp had every reason to organize his vessel as privateer, not a buccaneer. See *CSP 1685-1688*, nos. 532, 841iv, and also the Bartholomew Sharp chapter in *How History's Greatest Pirates...*

Page 31, 3rd paragraph, ship's officers. Pirate officers listed by Captain Snelgrave in 1719 included quartermaster, boatswain, surgeon, trumpeter, master, and carpenter. Other sources list these officers and gunner as well. Commissions against pirates often list pirate officers other than captain as "lieutenant, master, quartermaster, carpenter, boatswain, gunner, and inferior officers." See William Snelgrave, *A New Account of Some Parts of*

Guinea (London: James, John, and Paul Knapton, 1734), 195-288, and Johnson, *History of the Pirates*, 13, 51, 54, 274.

Page 33, shares and outfitting (repeated from *Buccaneer's Realm* notes). Buccaneers, filibusters, pirates, and many privateers were required to provide their own arms. According to Captain Thomas Larimore in Boston in 1695, "the person fitted out always allows to the person fitting out One full Quarter part of a whole share of whatsoever is gained on the voyage." The records of the privateer *Revenge*, out of Rhode Island in 1741 provide "½ of a ¼ Share for a Gun and Cartouch" and "¼ of ¼ of do. [one share] for a pistoll." This practice was almost certainly in place prior to 1695, and it is likely that many buccaneers and filibusters contracted in such a manner with local suppliers, investors, or bankers for the arms and powder required. Raveneau de Lussan was advanced funds by M. de Franquesnay in Petit Goave in 1684, although de Lussan does not provide the terms. See "Deposition of Thomas Larimore, October 28, 1695," in Jameson, *Privateering and Piracy*, 152-153; "Abstract of the Shares of the *Revenge*" in Jameson, *Privateering and Piracy*, 417; and de Lussan, *Journal of a Voyage*, 36.

Page 36, second paragraph, disability compensation: privateers typically awarded the seriously wounded double shares. See Robert Park's *Defensive War by Sea* (London: 1704), page 128.

Page 45, larger sea roving ships. The *Mocha* Frigate, a Red Sea pirate in 1697, formerly an East Indiaman, carried sixteen 18 pounders on her lower gundeck, and 10 patereroes and 2 coehorn mortars on the maindeck (the mortars, which fired a small grenade of iron or coated canvas, were mounted on the forecastle head), and other great guns as well. Charles Johnson notes that the *Mocha* was a 40 gun ship, leaving her with 24 smaller guns, probably of 9, 6, and 3 pound, unless the swivels were included in the number. Laurens de Graff sailed a captured Dutch slaver he mounted with more than fifty guns. See William Reynolds, "A Large Account of the Action of the Ship *Dorrill* with a Pirate Ship *Mocha*, dated Achin, 28th August 1697" in *Pirates of the Eastern Seas, 1618-1723: A Lurid Page of History* by Charles Grey, edited by George MacMunn (London: Sampson Low, Marston, & Co., [1933]), page 143, and Little, *Pirate Myths* (title subject to change), chapter on the myth of pirate sea battles.

Page 53, regarding the *barcalonga*. Early 19th century sources indicate that the Spanish *barcalonga* was rigged with a lug sail on each mast, and an earlier 18th century illustration in the Museo Naval de Madrid from the Marquis de la Victoria's *Albúm* (the image is reprinted in Apesteguí's *Pirates of the Caribbean* and Konstam's *The Pirate Ship*) indicates a "*virga al tercio*" or lug spar for a lug sail. This sail plan would make the *barcalonga* an excellent vessel for chasing or escaping to windward. See J. J. Moore, *The Midshipman's or British Mariner's Vocabulary* (London: Vernor and Hood, 1805), and the *Albúm* of the Marquis de la Victoria.

Page 53, 4th and 5th paragraphs, regarding the snow. The snow's name probably referred originally to its hull form. In the late 17th century and early 18th century it was two-masted and of conjectural rig. It was said to have been smack-rigged with larger sails, and so was probably square-rigged on each mast, with courses and topsails, but no trysail mast, trysail, or other fore-and-aft sail except perhaps a head sail or other staysail. A description in Robert Park's *Defensive War by Sea* (London: 1704), pages 109-111, indicates a square-rigged vessel. At some point, probably in the early 18th century, a trysail mast and trysail were added. The snow was rarely seen in the Caribbean until the 1690s when it became fairly common there, although one did accompany the comte d'Estrees in 1678-1679, and was noted as being unique to the region. See also *CSP 1677-1680*, no. 1118, and Moore, Alan, "The Snow," *Mariner's Mirror* 2, no. 1 (1912), 38-43.

Pages 60-61, last/first paragraphs, quick loading sequence: the method is also discussed by Humphrey Bland in *A Treatise of Military Discipline*, 5th ed. (London: Daniel Midwinter, 1743), pages 73-74. He notes that unless the barrel is very clean, which is impossible after two or three shots, the cartridge will hang halfway down the barrel. In my experience, the cartridge nearly always hung immediately between the mouth of the barrel and halfway down, no matter how clean the barrel and how well-made the cartridge. Never did it slide all the way down and seat. Greasing the cartridge paper might possibly help. More windage between ball and bore might also permit a heavy cartridge to slide all the way down the barrel once or twice before hanging up in the barrel. If *boucaniers* used this technique, they almost surely dumped the powder down the barrel, spat the ball from mouth into hand then into barrel, then banged the musket to seat charge and ball.

This leads to another issue, that of how cartridges were carried: ball up (top down) or ball down (top up). In most military manuals of the eighteenth century, cartridges are placed ball up, powder down, so that the soldier or marine

can grasp the cartridge and bite off the opposite (powder) end. However, there are suggestions that this was not always done, and I myself prefer carrying cartridges ball down. However, if cartridges are not made tightly around the ball, powder corns can slip between ball and paper if carried ball down. For *boucaniers* loading with the quick procedure discussed above, the ball down position would be ideal: the ball end could be torn off and the ball taken into the mouth, the musket then primed, then powder poured down the barrel and the ball inserted behind.

Page 61, 4th paragraph, page 62, 2nd paragraph, also page 251, range of the *fusil boucanier* or “buccaneer gun.” An eighteenth century source states that “*Boucaniers* are assured of killing at 300 paces with this musket [a *fusil boucanier*], and of piercing [probably penetrating, but not passing through] a cow at 200.” A pace or *pas geometrique* is equal to five French feet, equal to 5.33 US/Imperial feet, thus 300 *pas* equals 1599 feet or 533 yards, and 200 *pas* equals 1066 feet or 355 yards. However, the text may be referring to the *pas commun* or *pas ordinaire* of 2.5 French feet, which would halve these numbers, and frankly make them more reasonable—killing at 266 yards, piercing a cow at 177 yards. One should view the aforementioned distances, if accurate, as effective ranges, and not as the actual ability to aim and hit a target at these longer distances. There are other reports of buccaneer and similar long-barreled muskets killing at long range: American Revolutionary War veteran Joseph Plumb Martin witnessed a fellow soldier “rest his old six feet barrel across a fence” and hit a British soldier in a tree at half a mile (that is, 880 yards or 2640 feet). The shot was taken for fun, and no one expected it to hit its target, yet it did, and by all accounts killed the man. See M. Le Blond, *Traité de la défense des places*, 3rd ed. (Paris: Alex. Jombert jeune, 1783), sv “ARMES boucaniers,” and Joseph Plumb Martin, *A Narrative of a Revolutionary Soldier* (New York: Signet Classic, 2001), page 29. See also “Pages 136, 252” below.

A similar issue is associated with the statement that filibusters and *boucaniers* could hit a piece of eight (actually an *ecu*) at “100 *pas*.” See Anon., *Carthagene*, page 14, cited in *Buccaneer’s Realm*. This distance is roughly either 90 or 180 yards (almost certainly the former), depending on the *pas* used. Nonetheless, in either case, a buccaneer gun with an un-patched ball is not accurate enough to hit the piece of eight at this range, except occasionally and largely by accident—the error of dispersion is broader than a piece of eight, which is roughly the size of a silver dollar. Modern MLAIC world record scores with smoothbore flintlock muskets with patched ball (which was *not* used by sea rovers and *boucaniers*) fired at 50 meters indicate a majority of shots, perhaps 8 or 9 out of 13, within a roughly three inch bulls-eye (“10 ring”), which is twice the diameter of a piece of eight. And this is under optimum conditions, and at slightly more than half the range of the purported piece of eight shot. It would be a very difficult, but by no means impossible, shot even with a very accurate Pennsylvania long rifle and expert rifleman at 90 yards, and even then the expert rifleman would not hit it every time. Again, see MLAIC typical and world record scores. For that matter, a piece of eight is a small target at 90 yards with the naked eye. The perception of accuracy may in part be factual, however. A heavier long gun is easier to hold on target, assuming the shooter is strong, than a lighter one. Further, the longer barrel of the buccaneer gun, with its front sight farther out than on a conventional military firearm, would make it easier and more accurate aim. Only very rarely was a rear sight fitted, and perhaps not at all during the period under study, at least on common muskets, including buccaneer guns. If the buccaneer gun was loaded with a larger charge than usual for its caliber and if it actually did significantly increase muzzle velocity, this may have made it more accurate as well by diminishing the elevation required for long range shots (see below), may have given the gun its reputed killing power, as described in the previous paragraph, and may have given it its reputed range as well. But this is still somewhat speculative, at least for the moment. Readers should note that after a certain point, a powder charge wastes powder, increases recoil, provides very little relative increase in velocity, and diminishes accuracy.

The question remains as to whether *fusils boucaniers* had a greater range than guns with shorter barrels. Certainly they were perceived to have had greater range. The general belief was that longer barrels permitted powder to burn completely, and thus propel a projectile farther. By the mid to late-18th century, however, the belief that longer barrels shot a ball farther had changed, based on studies that demonstrated that barrels of three and six feet, each loaded with the same size charge, threw a ball the same distance. However, it was acknowledged that duck guns, for example, which were very similar to *fusils boucaniers*, had greater range. This was believed due to the larger charge—two to three times that of a similar caliber sporting gun. Was the buccaneer gun loaded with a larger charge than average for its caliber? Labat, in reference to *fusils boucaniers*, describes what could only be a field expedient powder measure used by *boucaniers*, that of pouring powder over a musket ball in the palm of the hand until it covered the ball (also described by Gaya). Based on my own tests, this is roughly the same amount of powder as was used in a conventional French military musket of the same caliber, although the amount of powder can vary significantly depending on how the palm is held, and cannot be considered accurate, or even a reflection of how

much powder was typically used. The question, unfortunately, remains unanswered. My own suspicion is that *fusils boucaniers* were loaded with charges somewhat larger than average, at least when longer range was required. Colonial rifleman varied the charge in their long guns depending on range, for example. A conventional charge may have been used at ranges up to 100 yards, although a larger charge may have made the *fusil boucanier* more accurate—i.e. easier to aim—at this range by reducing the elevation required. If this is correct, that charge size varied, the number of charges that could be made from 20 pounds of powder would have to be revised. Appropriate testing should resolve the issue. This being said, longer barrels do provide for significantly improved aiming. Also, see “Page 44” under the errata section above, and “Page 68” below. These paragraphs are there as well. For references, see *An Essay on Shooting*, 2nd ed. (London: T. Cadell, 1791), 72-94, and *Gaya Traité des Armes* (Paris: Sebastien Cramoisy, 1678).

Page 63, 2nd and 3rd paragraphs. Multiple shot is confirmed by John Cox's late seventeenth buccaneer journal, and other sources as well. Cox describes "small shot" as a paper cartridge containing powder, one musket ball, and seven or nine "swan shot." I test fired a dozen such cartridges at ranges of ten and twenty yards. Patterns were on average nine and eighteen inches in diameter, respectively, and if projected would give patterns of twenty-seven and thirty-six inches at thirty and forty yards, respectively. However, the patterns varied widely. Some were tall and narrow, some broad and flat, and some were roughly circular with a shot or two thrown wide. Besides its use at close quarters when flanking barricades, as Cox reported, it would also have been devastating during boarding actions, both during the boarding process when defenders remained on deck, as well as by defenders making a sally against boarders. See [Cox], *Adventures of Capt. Barth. Sharp*, 56. See also *The Buccaneer's Realm*, chapter 18, for additional details on buccaneer land warfare. My test firings are cited in note 36 to chapter 18.

Page 63, fourth paragraph, types of musket shot. According to the sieur de Gaya writing circa 1678, a projectile called a “*balle ramée*”—two musket balls attached by half an inch of small iron rod—was occasionally used by infantry. Sir Henry Mainwaring hints at another shot, probably similar to a cross-bar shot for a great gun (a round shot with an iron bar through its middle and projecting a few inches out each side). These were “armed” with rope yarn and such so that the exposed leading end of the bar would not catch on “flaws” in the barrel. He writes: “We also use to arm some small shot for muskets, like our cross-bars.” John Smith describes quarter shot (musket balls quartered or quartered then cut in half). Spanish wrecks often produce “split-shot”—large caliber (.80 on average) musket ball halves connected by twisted wires cast in the sprues. The shot would expand to several inches after firing and would be good against men and rigging. See Gaya, *Traité des Armes* (Paris: Sebastien Cramoisy, 1678); Henry Mainwaring, *The Seaman's Dictionary*, s.v. “arm;” and John Smith, *A Sea Grammar*, reprinted in *A General History of Virginia* (Glasgow: James MacLehose and Sons, 1907), vol. 2:294. For information on deformed or “chewed” musket balls used in order to increase injury, see *Buccaneer's Realm*, page 175, 2nd paragraph. On poisoned musket balls, see the same, and also *Buccaneer's Realm* notes and errata, “Page 175.”

Page 64, fourth paragraph, powder charges. Again according to the sieur de Gaya, a musket (matchlock) or fusil (flintlock) of a caliber of 16 balls to the pound is loaded with “*une demie once & un gros de poudre de magazin*” (half an ounce plus one eighth of an ounce) or roughly .67 ounces (US, avoirdupois) of powder. Modern blackpowder arms use a much smaller charge, in large part due to the much higher quality of modern corned blackpowder. A 16 caliber (French system) musket ball, smaller than muzzle diameter, weighs roughly 1.079 ounces (US, avoirdupois), and is roughly .68 to .70 inch in diameter, or even smaller. Gaya also notes the method of powder measuring powder over a musket ball in the palm, described by Father Labat as used by the *boucaniers*.

Page 64, cartridges (cartouches). According to Falconer's *New Universal Dictionary of the Marine* (1815), “The ball-cartridges, for wall-pieces, muskets, carabines, and pistols, are made of whited-brown paper, on formers of wood.”

Page 65, powder quality. Some researchers have suggested that cartridges were made up only immediately prior to use in order to prevent tropical humidity from spoiling the powder, but period documents tend to dispute this, as do tests I ran. Sea rovers at sea or on the march had to have ready cartridges, and thirty was the common number, at least among buccaneers and filibusters. In my tests I exposed corned blackpowder to conditions of high heat and humidity for several weeks, and testing it daily. The powder burned quickly and cleanly each time, as long as a *sharp* flint was used. Powder corns then and now were and are coated with “black lead” (graphite), which not only helps hold the corns together, but also provides some protection from humidity. A 1776 military text notes that after “being made some months,” cartridges should be broken up and replaced, given that “Powder in Cartridges for a

length of time, cakes or moulders into dust, and thereby considerably loses its original strength.” It is possible that cartridges may have been kept in leather bags within some cartouche boxes as means of extra preservation against moisture, as practiced by some eighteenth century military units such as the Prussian army. My tests are cited in *The Buccaneer’s Realm*, note 30 to chapter 4. See also [Capt. Bennet Cuthbertson], *Cuthbertson’s System for the Complete Interior Management and Economy of a Battalion of Infantry*, new ed. (Bristol: Rouths and Nelson for A. Gray, Taunton, 1776), page 117. Unfortunately, the subject of small arms cartridges is discussed little in period documents.

Regarding moisture and gunpowder, eighteenth century research suggested that damp powder burned twice as slow as dry, and that dry powder would shoot a ball twice as far as damp. If powder gets too damp, its corns will fall apart, as they will if too battered or “bruised,” as was well-noted during the period at hand. The latter was probably a greater concern than mere humidity. That being said, there was serious concern aboard ships about damaged cartridges and powder aboard ship. Ships needed ready cartridges, but struck a balance between having too many on hand, given that powder was better preserved in barrels. See Anon., *Miscellanies, or a Miscellaneous Treatise, Containing Several Mathematical Subjects* (London: J. Nourse, 1776), pages 283-284.

Page 65, powder charges. Using Gaya’s description above of a half-ounce plus an eighth ounce of powder for a musket of 16 balls to the pound, a *boucanier* would get roughly only 512 shots out of twenty pounds of powder. Using a powder charge of half the ball’s weight would give 640 shots. Using his and Labat’s rough measure in the palm, as few as 500 or as many as 800 or more charges might be made from 20 pounds of powder. Powder would go farther with smaller calibers as well, for example 720 or more for a gun of 18 balls to the pound. High quality powder would also require a smaller charge. Some 18th and early 19th century references provide for smaller charges, for example “6 drachms” (6 drams, or 6 16ths of an ounce) for an English .75 bore with a 1.06 ounce (avoirdupois) ball. This would give roughly 850 charges per 20 pounds.

Page 66, last paragraph, accuracy: The Spanish “pirate”—actually a seaman of the Armada de Barlovento—who attacked Father Labat shoved his pistol into the priest’s ribs, ensuring he would not miss. Fortunately, the pistol misfired. In my own tests, I was able to keep pistol shots within a ten inch square from seven yards with only a brief hesitation for aiming. The pistol was a replica late 17th century doglock, 24 period French caliber or 24 balls to the pound (.62 caliber barrel in modern terms), a common French caliber of the period, loaded with a paper cartridge with a .595 ball. No patch was used, per period practice. This being said, shoving a pistol into someone’s ribs is an excellent way to ensure that the pistol will not miss, and the pistol ball will hit with maximum velocity.

Pages 66-69, swordplay at sea: see also chapter 19 in *Buccaneer’s Realm* and the chapter on the myth of dueling for command in the (hopefully) forthcoming *The Great Pirate Legends Debunked* (title may change) by Benerson Little.

Page 68, 2nd paragraph, McBane’s criticism of the cutlass might also have been due to the fact that it is most effective at close distance and often gives rise to grappling and “handy grips,” providing little opportunity to display one’s swordsmanship.

Page 69, last paragraph. Although Spanish and Portuguese soldiers and sailors had an affinity for the rapier, Spanish seamen, including sea rovers, are also noted in primary sources as using cutlasses as well. See *The Buccaneer’s Realm*, chapter 19, for additional details on period swordplay.

Page 72, 4th paragraph, slow match. Match for lighting grenades could also be carried in one’s hat, typically with the burning end encased in a metal match box or case. Sticking it under one’s hat, as Blackbeard reportedly did (although there are no eyewitness accounts of this), would have been a good way of setting his beard on fire. See Jacques Bourd  de Villehuet, *Le Manœuvrier, ou essai sur la th orie et la pratique de mouvements du navire et des  volutions navales* (Paris: H. L. Guerin and L. F. Delatour, 1765), page 236.

Pages 72-73, fireworks. Subsequent research into grenades and firepots, as well as practical work with the Middlealdercentret (Medieval Center) in Nyk bing, Denmark, provides additional detail. In the Age of Sail, clay pots were used as fragmentation grenades, as smoke pots, and as true firepots designed to set vessels aflame. Some firepots had both an iron grenade and blackpowder inside. Fusing was typically slow match, or a wooden tube filled with a fuse mixture, or both. In some cases, quick match was used. For example, see Johnson, *History of the Pirates*,

page 54. In a test, a firepot with a typical two pound charge of blackpowder, broken as it would be if tossed on deck, appeared to explode, in spite of not being entirely contained, and produced significant flame as well as some probably non-deadly fragmentation. Anyone within ten feet would certainly have been severely burned, and any cannon cartridges or musket cartouche boxes would likely have ignited. Father Labat describes the use of one such firepot: it “grilled seven or eight Englishmen in such a horrible fashion that they immediately asked for quarter.” See Labat, *Voyages aux isles*, vol. 1:99. Park, however, in his *Defensive War by Sea* (London: 1704), notes grenades and stinkpots smothered by wet port sails (heavy canvas tarpaulins), and notes that two port sails could stop the fragmentation of an iron grenade.

Several firepots armed with a hot-burning mixture were also tested, and would easily have set fire to anything combustible—and did. Indeed, the fire’s brightness reminded me of thermite. We also considered the question as to whether some firepots may have been lit with a central fuse and thrown with line attached to the “ears.” The answer, as I later discovered, is both. The cords were indeed both match and a sling of sorts: “This pot being thrown by a handle of match...” notes *A Military Dictionary* published in 1778 in London for G. Robinson, sv. “firepot.” Further research located a seventeenth century description: “Two lengths of match are crossed over the top and lit, then the pot is thrown with a handle made of match.” Although the crossed match, tied to the “ears” of the pot as shown in the illustration, could probably serve as a handle, a period illustration shows an additional length of match tied to the firepot in the manner of a simple basket handle, most likely from an ear to its opposite. No mention is made as to whether this match was also lit, but there would be no reason for it not to be. See Mallet, *Les travaux de Mars* (Paris, 1691), vol 3:164-167. It is also certain that some of these grenades were “double primed” (to use a modern term) with attached matches as well as a fuse set in the cover. The latter would ensure that the grenade still detonated in case it did not break. An empty firepot recovered from La Salle’s late 17th century *La Belle* has both ears for match as well as a central fuse, making it likely that these were double-primed with both match attached to the ears to light the powder when the device broke on impact, and with a central fuse in case the it failed to break. My thanks to Jens Christiansen and Peter Vemming Hansen of the Middlealdercentret for the opportunity to have hands-on experience with these devices.

Pages 72-73, fireworks. *Saucissons* or “sausages,” mentioned by Esquemelin as being thrown by Spaniards defending against L’Ollonois’s attack on the Hulk (the “Honduras ship”), were “pipes made of tarred cloth, filled with powder, and rolled up in the form of a gut, about 2 inches in diameter.” They were normally used as large fuses to fire mines under fortifications in siege warfare, but could also be used as an incendiary against an enemy. “Torches,” also mentioned, were probably exactly that, torches lit and thrown upon the attackers decks in hopes of setting fire to their vessel, or of igniting great gun and small arms cartridges. See Anon. *Miscellanies*, 280, cited above, and Esquemelin, *Flibustiers*, 139.

Page 73-74, last/first paragraph, pistols: pistols at sea often had belt hooks, and an illustration of Jean Bart circa 1701-1702 shows a pistol under his sash, belt hook *out*. This may have protected the lock, preventing the hammer from being accidentally pulled to full cock or more likely, the battery from opening and spilling powder from the pan. However, the illustration mistakenly shows the cock and battery on the left side—the same side as the belt hook, an obvious, gross error. The cock and battery are somewhat poorly depicted as well. The pistol is placed with its butt toward the body, making it easy to draw with the left hand. Note that it is difficult to judge the accuracy of period illustrations, even those that appear well-detailed.

Page 88, 1st paragraph, clothing. There are some distinct period references to “white shirts” worn by the early 18th century Anglo-American pirates, for example: “who obliged all the prisoners to come upon deck in white shirts, to make a show of force [as if they were pirates],” and “most of them with white shirts.” This may have been the preferred shirt of the pirates, as opposed to the checked shirts of seamen. See Johnson, *History of the Pirates*, 145, 209.

Page 91, second paragraph, superstition. Educated buccaneer-surgeon Lionel Wafer writes that the Native American mummified remains he took aboard the buccaneer ship *Batchelors Delight*, commanded by Edward Davis, in 1686 at Huarmey, Peru, caused an uproar among some of the crew, who forced him to leave it behind. They did not want a dead body—and one they likely thought might be a devil of some sort—aboard, believing the compass would not read right. See Lionel Wafer, *A New Voyage & Description of the Isthmus of America*, 1699, (reprint, London: Oxford, for the Hakluyt Society, 1934), page 123.

Page 92, gambling. Gambling among buccaneers was apparently restricted to shore and, probably, when at anchor. It appears to have been prohibited at sea. In general, see the journals of Ringrose, Cox, and Povey.

Page 105, second paragraph, language upon sighting a vessel at sea. Another authentic cry from aloft is the example of “A sail upon our weather quarter! She lays her head to us!” See Francis Povey, *The Sea-Gunners Companion* (London: Richard Mount, 1702), page 44.

Page 114, buccaneer and filibuster flags. Filibusters in the South Sea under (probably) Pierre Lagarde or (possibly) François Massertie at least once flew the skull and bones. This is the only reference, other than among the Barbary corsairs, of pirates flying this flag in the seventeenth century. The filibusters flew a skull with crossed bones underneath, in white, on a red flag ashore on an attack on Acaponeta, Mexico. See *Journal de Bord d'un Flibustier (1686-1693)*, edited by Edward Ducéré in the “Bulletin of the Société des Sciences et Arts de Bayonne,” years/editions 1894 and 1895. See also Benerson Little, “The Origin of the Dread Pirate Banner, the Jolly Roger” in *Pirates Magazine* 12 (April 2010), 9-14.

Page 114, pirate flags, skull and bones. We can almost certainly discount theories that the “Jolly Roger” originated from “*joli rouge*,” for there are no period references. See Little, *Pirate Hunting* (Washington DC: Potomac Books, 2010) and Benerson Little, “The Origin of the Dread Pirate Banner, the Jolly Roger” in *Pirates Magazine* 12 (April 2010), 9-14.

Page 114, fabric of colors. A reader inquired as to the source of the statement that most ensigns were made of wool: see Wilson, *Flags at Sea*, 85. Typically, ensigns, jacks, and pendants during the period under study were made of a loose, coarse wool fabric called “bewpers” or “bunting.” Linen was used in some navies, such as Spain’s, whose ensigns were elaborately painted.

Page 121, 2nd paragraph. The *Mocha* Frigate, a pirate, in 1697 had taken down her galleries, probably to disguise the ship at long range (a ship without galleries would appear to be a smaller one at long distance, small vessels did not have galleries), and also to aid in the use of great guns aft. See William Reynolds’s account of the *Mocha* Frigate in *Pirates of the Eastern Seas, 1618–1723: A Lurid Page of History* by Charles Grey, edited by George MacMunn (London: Sampson Low, Marston, & Co., [1933]), pages 139, 146.

Page 126, 4th paragraph, rowing in a chase. At close ranges—“half a ship’s length of us,” for example—the chase might be able to shoot “all her [the pursuer’s] oars to pieces” and escape. See Johnson, *History of the Pirates*, 89.

Pages 136, 252, the ranges of “musket shot” and “pistol shot.” In general, “musket shot” as I determined it was a rough or general range of 600 to 800 feet. However, based on subsequent research, seven to eight hundred feet might be a more accurate assessment of “musket shot” range among the English, and 700 to 1000 feet among the French, with the higher end probably “*portée de fusil boucanier*.” Originally I had thought pistol and half-musket to be equivalent, given that I found several instances that seemed to equate them. In fact, the instances appear to have been used together as a rough range. Gaya in his *Traité des Armes* (see below) gives “40 pas [paces]” as pistol *portée*. A *pas geometrique* is equal to five French feet, thus pistol shot is roughly 213 feet or 71 yards. However, if a *pas commun* is used, “pistol shot” is half that. (See James, sv. “pas,” below. A *pas commun* is only 2.5 French feet.) “Carbine shot” or “caliver shot” would logically lay between pistol and musket shot distances. Research into the question is detailed in the next paragraph.

Research details on firearm ranges used as an indication of distance. Locating specific period documentation of ranges was difficult, and early on I had to rely to some degree on inferences. For example, in 1669 Philip Staynred in *A Compendium of Fortification* noted that 720 feet was *within* musket shot. William Hutchinson writing of mid-eighteenth century privateer tactics in *A Treatise of Naval Architecture* describes half-musket shot or “half a cables length,” that is, sixty fathoms (360 feet) in his day according to *Falconer’s Dictionary of the Marine*, 1780, making musket shot range 720 feet if it is equivalent to a half cable. However, there are period references to cables as being of 100 fathoms in the seventeenth century, which would make musket shot roughly 600 feet if it were described as a half cable’s length. See for example “E. S.,” *Britain’s Buss* (London: Nicholas Bourne, 1615), page 279. A footnote in *An Essay of Naval Tactics* (3rd ed., John Clerk, 1827) defines pistol shot or half-musket shot as 400 yards, an apparent typo for 400 feet, making musket shot a distance of 800 feet. Later on I found other specific references. Blondel, quoted in Charles James’s *A New and Enlarged Military Dictionary* (2nd ed., 1805), gives 140 *toises* as the

longest range of musket shot (a *toise* is equal to 6 old French feet or 1.949 meters, roughly 6.4 feet), equal to 895 feet. James also defines *portée de fusil* (range of a musket) as a various distance ranging from 120 to 150 *toises* (767 to 960 feet). The most specific references I eventually located, unfortunately after publication, were Gaya, *Traité des Armes* (Paris: Sebastien Cramoisy, 1678), which gives 120 *toises* for a regular musket or fusil, and 140 to 150 for those “*renforcé*”; St. Remy, *Memoires d’Artillerie* (1697), 120 to 150 *toises*; and *A Military Dictionary* published in 1778 in London for G. Robinson, in which musket shot is defined as “about 120 fathom (720 feet, 240 yards) and almost all the military architecture is regulated by this rule.” Major Frances J. Day, describing ranges of past centuries, concluded in 1887 that musket shot was approximately 250 yards, pistol shot 120 to 150 yards, half-musket 150 to 200 yards, and half-pistol 60 to 80 yards. However, I am not sure how well these estimates apply to the late 17th and early 18th centuries. See Frances J. Day, *Professional Papers of the Corps of Royal Engineers*, vol. 13 (Chatham: W. & J. Mackay & Co., 1888). This being noted, I prefer the period sources.

Page 136, great guns. The filibusters who entered the South Sea and raided from 1686 to 1693 under Pierre Lagarde (or perhaps François Massertie) carried spare great guns in the hold specifically for the purpose of outfitting prizes. See *Journal de Bord d’un Flibustier (1686-1693)*, edited by Edward Ducéré in the “Bulletin of the Société des Sciences et Arts de Bayonne,” years 1894 and 1895.

Page 137, grapeshot. As a term, grapeshot does not seem to have appeared in common use until the early eighteenth century. Povey in his *Sea-Gunners Companion* (London: Richard Mount, 1702) does not describe it by name, and Park in his *Defensive War By Sea* (London: Richard Mount and Thomas Page, 1704) does not mention it at all. Povey on pages 15 and 41-42 does describe “small Iron-shot of a pound weight” fired in quantities of 20 or 30, which is doubtless grapeshot. Twenty or more may be fired out of a demi-cannon (a 32 pounder), and fewer by proportion in smaller guns. He does not describe how it was loaded. In the early 18th century, grapeshot apparently consisted of either lead shot (probably very large musket balls) or iron shot placed in a canvas bag and wrapped with a pattern of marline to make it cylindrical and better fit the barrel, as opposed to shot simply stuffed in a canvas bag, then stuffed into the barrel. It does not appear to have been supported by a spindle or wooden base, as was later the case. Burrel may have been similarly wrapped, and thus have been the term for what amounted to late 17th century grapeshot. However, Povey (page 15) describes “Bur-Shot” as made of the iron sprues cut from roundshot when they were taken from the mold.

Page 137, canister and other small shot such as burrel. Povey, page 42 (see above), recommends not firing case shot beyond sixty yards, given the dispersion pattern. This confirms tests I helped conduct in Denmark, in which a paterero’s dispersion pattern at 60 yards was six feet.

Page 137, other small shot used in great guns. The *Mocha* Frigate fired shot of tin and pewter (probably from captured cargoes), as well as shards from broken bottles and teapots, plus chain, stones, and so forth, doubtless because they lacked proper small shot. See the firsthand account in *Pirates of the Eastern Seas, 1618–1723: A Lurid Page of History* by Charles Grey, edited by George MacMunn (London: Sampson Low, Marston, & Co., [1933]), page 142.

Page 141, quarter bill: in *A Faithful Narrative of the Capture of the Ship Derby* by “Philoleutherus” (London: S. Osborne, 1738), page 21, the vessel’s captain posts quarter bills over the guns (lists of names and duties for each gun), and “Rewards and Close-quarters &c. at the Mizen-mast.”

Pages 141 to 145, making a ship clear for engaging. Villehuet, writing in the mid-18th century, provides other details. Woven plattings or mats should be nailed between the gunports to help prevent splinters from striking the gun crews. This should be done at the beginning of a cruise and appears to be primarily a French practice. Spare sails should be on hand below, made up and ready to be sent aloft as necessary. Spare stoppers, blocks, tarred marline, and other cordage and rigging should be on hand on deck. Booms should be laid out for defending against fireships or boarding. Sails not intended for use during the action could be secured with rope yarns instead of gaskets, so that they could be set quickly. See also below, 182-83. Water for fighting fires must be available, as well as to wet the sails if the breeze is light, and two pumps should be available as well. The master should have all he needs at hand to navigate and keep track of the vessel’s course while engaged. Hatchets or boarding axes should be distributed throughout, and also hung from each mast. Water should be available to quench the crew’s thirst, and should be carried to each gun and other quarters so that the men do not have to leave their stations. See Villehuet, *Le Manœuvrier*, pages 221-27.

Similarly, in *A Faithful Narrative of the Capture of the Ship Derby* by “Philoleutherus” (London: S. Osborne, 1738), pages 20-23, the ship is made ready with powder chests on the quarterdeck, poop, and forecastle; puncheon, hoghead, and barrel in the maintop, foretop, and mizzen, respectively, for fighting fires; chests of grenades in the tops; small arms in readiness; shot-lockers and shot in their proper stations; plugs for shot holes; the two lower yards slung with chain; and eventually the transom in the great cabin and balcony in the roundhouse cut away for traversing the sternchase.

Page 141, 1st paragraph, chambers for chamber-loaded swivel guns. Chambers were *not*, as I stated, loaded with powder and shot, but only with powder and a tompon or wooden cylinder if the powder load did not fill the chamber entirely. The shot, whether round shot or a form of case shot, was pushed into the barrel, then the chamber was loaded into the swivel gun. Breech-loading swivels were considered more dangerous than their muzzle-loading counterparts, given that gases tended to blow back from the breech into the gunner’s face; Sir Henry Mainwaring, the early 17th century pirate, notes in his dictionary that he has seen many men hurt with them, and that they are dangerous to the eyes, which probably made them less accurate if the gunner turned away to shield his eyes. In test shots, at sixty yards a wrought iron breech-loading swivel gun with a three inch bore shot a pattern six feet in diameter, of scrap metal bits roughly one half to three quarters of an inch square. This validates Povey’s admonition against firing guns loaded with case shot beyond 60 yards. See Povey, *The Sea-Gunners Companion* (London: Richard Mount, 1702), page 42. By projection, the pattern would be an estimated diameter of ten feet at 100 yards. My thanks to Jens Christiansen of the Middlealdercentret (Medieval Center) in Nykøbing, Denmark, for demonstrating the loading and firing with shot of a hand-forged iron swivel gun. This and other information on swivel guns is noted in *The Buccaneer’s Realm*, pages 266-267. See also Mallet, *Les travaux de Mars* (Paris, 1691), vol 3:133, 154-155, and “Page 251” below.

Pages 141 to 145, making a ship clear for engaging. Covil’s diary notes that seamen’s “chests and lumber” were stowed in the ship’s boat or by the main chains “or elsewhere” out of the way in time of action. See Covil’s diary in *Early Voyages and Travels in the Levant*, edited by J. Theodore Bent (London: Hackluyt Society, 1893).

Page 142, 2nd paragraph, making a ship clear for engaging. “Seaman’s bedding” (hammocks and blankets) was noted in 1686 as being used by a merchant crew to fortify the quarterdeck in action. This was common in the 18th century, but references to this practice in the 17th century are few. See Edmond Wright, *A True & Exact account of an Engagement maintained by the Ship Caesar, Capt. Edmd. Wright Comandr. Against Five Shippes (being Pyrates) in sight of ye Isleand St. Iago on Sunday, The Last Day of Octobr 1686*, reprinted in *Medals and Decorations of the British Army and Navy* by John Mayo Horsley (Westminster: Archibald Constable and Co., 1897), page 63.

Page 142, 3rd paragraph, cartridges and budge barrels. Great gun cartridges were often carried individually in “latten” (brass) cases. (Mainwaring, *The Seaman’s Dictionary*, sv. “cartridge,” and Mountaine, *Boteler’s Dialogues*, 202.) Only as many cartridges as were needed at the moment were carried on deck. Some cartridge cases were made of latten (brass) as well. (Mainwaring, sv. “budge barrel.”)

Page 144, quarter bill. Robert Park provides a quarter bill for a small crew, including an officer in each quarter “to encourage the Men,” the master (captain) in the roundhouse with a few hands (3 if a crew of 14, 2 if only 12, and notes that if smaller the master may have to help serve the guns), the gunner in the steerage, the mate at the forecastle to among other duties manage the fore braces, a boy in each quarter to carry powder, the carpenter to look after the gunports and look for shot holes, and two men to a gun on each side (that is, four men to a gun on a single side). See Robert Park’s *Defensive War by Sea* (London: 1704), page 130.

Page 144, gun crews and quarter bills. Guns up to sakers (slightly more than five pound shot) and six pounders were often managed with four men per gun, although a crew of six was probably preferred, if the vessel’s crew were large enough. In the late 17th century the English Navy provided for two men per each 3 pounder, three men per each minion (sometimes only two), saker, and demi-culverin (9 pound shot), and four per each 12 pounder and culverin (18 pound shot). In other words, a 3 pounder would have a crew of four, and a saker a crew of six when fighting only one side. The late 17th century sixth rate *Lark* of 18 guns (16 sakers, 2 minions), roughly the size of a typical three-masted pirate or privateer of the period, had a crew of eighty-five. In battle, fifty-two would serve the guns (forty-eight for the sakers, four for the minions), four boys would carry powder, two men would fill and pass powder, the surgeon and two assistants would be in the hold, the carpenter (no mates) would be prepared to stop holes and make repairs as necessary, eleven men would be tasked for “small shot” (muskets and swivels), and a

dozen would sail the ship, including the captain, master, and other officers. See J. R. Tanner, ed., *A Descriptive Catalogue of The Naval Manuscripts in the Pepysian Library at Magdalene College, Cambridge* (London: Navy Records Society, 1903), vol. 1:239, and Hutchinson, *Treatise on Naval Architecture*, 224-26.

Page 146, 2nd paragraph, loading great guns. A period account of an encounter in 1686 at the Cape Verde Islands between a merchantman and five pirate ships of twenty to thirty guns each, first under French colors then under the red “*sans quartier*,” notes that “their men lading their great guns wth out board (as is ye custom of these West India Gunn^r Pyrates) were cut of as fast as they appeared to doe their duty, and this was y^e reason they fired but few great guns when they bore down on us for w^{ch} wee are beholden unto o^r small firearmes.” This does not suggest that gunners stood on outboard platforms and loaded as William Dampier scornfully reported some South Sea Spaniards doing in the 1680s (if pirate gunners did this he would not have disdained the Spanish for doing it), but rather that they loaded with their ports open, probably with wooden rammers. The reason these French pirates, purportedly from the West Indies, loaded this way is unknown. The common method, even among merchantmen of the period, was to close the gunport after firing and load behind its protection, using a rope rammer, although wooden rammers were still common. The pirates had crews large enough to man their guns, so there was no need to prevent the guns from recoiling in order manage them with very small crews. Firing guns that are prevented from recoiling also puts great strain on a vessel. Perhaps some of the pirates’ guns were too long to recoil and so were lashed or wedged, but this seems unlikely in the case of all of the guns among the five ships. It may be that the pirates’ prey was usually too weak to put up much of a fight, and the pirates had not so far had reason to load their great guns within board, or even to use them often. In most cases, heavy musket fire, followed by boarding if necessary, was sufficient to capture their prey. See Edmond Wright, *A True & Exact account of an Engagement maintained by the Ship Caesar, Capt. Edmd. Wright Comandr. Against Five Shipps (being Pyrates) in sight of ye Isleand St. Iago on Sunday, The Last Day of Octobr 1686*, reprinted in *Medals and Decorations of the British Army and Navy* by John Mayo Horsley (Westminster: Archibald Constable and Co., 1897), pages 63-64. The issue is discussed without solid conclusion in L. G. Carr Laughton, “Gunnery, Frigates, and the Line of Battle,” *Mariner’s Mirror* 14, no. 4 (1928), 339-363. Two associated notes are printed in *Mariner’s Mirror* 15, no. 1 (1929), 74-75. Dampier’s comment is found in Dampier, *New Voyage*, 135-136.

Page 147, 2nd paragraph, weather versus lee gage. There were drawbacks to the weather gage other than exposed decks, although this was the principal disadvantage. Cannon might roll forward after recoil, and would need to be hauled inboard again for loading, thus slowing the time to load and fire. If the weather vessel were taking a beating, escape to windward was more difficult than escape to leeward—and for the vessel with the weather gage, a lee escape was blocked by the enemy. Breaking off to windward was also dangerous, as it exposed the stern to raking fire longer than would breaking off to leeward. Some recommended fighting close hauled on the weather gage to (1) prevent the enemy from gaining the weather gage, and (2) because “ships being less in the trough of the sea, and steadied more the canvas, roll less, therefore fire with greater accuracy.” See Ward, *Naval Tactics*, page 8. This being said, the minimal sail carried in battle (topsails, perhaps the foresail, mizzen, and a head sail) limited ships to sailing no more than seven points from the wind. On the other hand, some believed that sailing “right afore y^e wind” was “abolutly y^e best man^r soe to ingage.” See Wright, *True & Exact Account*, page 64. This was probably because, as noted in *Sea Rover’s Practice*, vessels steered more easily large, no matter how damaged their sails and rigging were. An advantage of the weather gage I did not note was that the wind might carry burning wads into the rigging and sails of the adversary. The lee gage, however, could be advantageous in single ship actions, particularly if the wind blew strong and the sea ran high. Withdrawing to leeward was also easier. See P. Paul Hoste, *A Treatise on Naval Tactics*, 1691, reprint, translated by J. D. Boswall (Edinburgh: Bell and Bradfute, 1834), pages 21-22, 25-28; Villehuet, *Le Manœuvrier*, 274-278; and James H. Ward, *A Manual of Naval Tactics* (New York, D. Appleton & Company, 1859), page 8.

Page 148, second paragraph, running fight. Commodore Walker notes that in a stern chase the chased vessel often lost way by having to alter its heading slightly in order to bring its chase guns to bear. See [Walker], *Commodore Walker*, 24.

Pages 153-161, note that defenders in closed quarters sometimes made sallies against boarders when they felt they had depleted their numbers sufficiently. See Robert Park, *Defensive War By Sea in Five Parts* (London: Rich. Mount and Tho. Page, 1704), pages 157-59, for example.

Page 153, 4th paragraph, disabling powder chests. Although Father Labat states that powder chests were disabled by piercing them with pistol shots so that they would have little effect if fired, further evaluation indicates that he may have been mistaken. Firing a pistol into a powder chest would do little more than perforate it, leaving it still dangerous, or detonate it (especially via the pistol's hot gases), and the detonation of a powder chest might injure or kill anyone close enough to shoot the chest with a pistol. Rather than "*coups de pistolet*," "*coups de sabre*"—cutlass blows—might have been meant. Fuses, if exposed, could be cut, or the chest could be broken apart. Even so, two or three pounds of loose powder can be deadly if ignited, even if uncontained, and the spark from a cutlass striking iron shrapnel within the chest could ignite it. Cited in *The Buccaneer's Realm*, note 22 to chapter 6.

Page 154, boarding axe. The axe's name doubtless derives from its use in chopping holes in decks and bulkheads during boarding actions when the adversary had retreated to closed quarters. Also note that iron crows (used to elevate gun [cannon] breeches) were also so used. For example, see Park, *Defensive War By Sea*, pages 4-5.

Page 154, 3rd paragraph, grappling hooks. Grappling hooks were not thrown by hand from the ends of yardarms, but were suspended from them via several feet of chain attached to a line, with the line belayed on deck where seamen could ease it or haul on it, as required. It is possible that light grappling hooks could have been thrown from the yard ends, but probably they were not. Grappling hooks were normally thrown from deck into the adversary's shrouds, and also onto his decks in order to catch on the rails when heaved taut. Grappling hooks were also used to tear down boarding nettings. A mid-18th century French privateer, *Le duc de Mazarin* of 150(?) tons and 14 guns, was provisioned with three grappling hooks, for example. See J. Lafay. *Aide-mémoire d'artillerie navale* (Paris: Librairie Militaire, Maritime et Polytechnique, 1850), page 291; R. P. Daniel [Gabriel Daniel], *Histoire de la Milice Française et des Changements qui s'y sont faits depuis l'établissement de la Monarchie dans les Gaules jusqu'à la fin du Règne de Louis le Grand*, 2 vols. (Paris: Jean-Baptiste Coignard, 1721), page 743; Villehuet, *Le Manœuvrier*, pages 132, 223-224; Mainwaring, *The Seaman's Dictionary*, sv. "nettings"; Henri Malo, *Les Corsaires: Mémoires et Documents Inédits* (Paris: Mercure de France, 1908), page 382; and Alonso de Chavez, "Espejo de Navegantes" in Duro, *Armada Española*, vol. 1:383.

Page 154, 3rd paragraph, grappling hooks: note that vessels were not held together just by grappling hooks, but by lashings as well. See for example *The Boston News-Letter* of January 14, 1705/6, and John Smith's *Seaman's Dictionary*.

Page 155, 2nd paragraph, laying alongside. Flutes were noted as being difficult to board, given their bulging hull and the tumblehome above, making the distance between the attacker's deck and his prey's greater than usual. See Daniel, *Histoire de la Milice Française*, pages 720-721, and Georges Guillet, *Les Arts de L'Homme d'Épée, ou Le Dictionnaire du Gentilhomme* (Paris: Gervais Clouzier, 1678), pages 158-159.

Page 157, 1st paragraph, tactics to prevent boarding. A ship intending to board, or a fireship, might be fended off with booms or, if small, boathooks. See Guillet, *Les Arts de L'Homme*, 743, and Villehuet, *Le Manœuvrier*, 224.

Page 157, second paragraph, number of boarders. Villehuet suggests that no more than three quarters of the crew be assigned to boarding, and that the principal company of boarders be composed of the "most vigorous and most intrepid." Officers leading a boarding action should have "*de l'ardeur & de l'intrépidité*." See Villehuet, *Le Manœuvrier*, 235.

Page 158, 3rd paragraph, boarding arms. Often debated is just exactly what arms boarders carried, and whether they carried cartouche boxes. One period text notes a dead pirate boarder as armed with "a fuzee [a flintlock musket], an axe, a cartouche-box, a stinkpot, a pistol, and a cutlass." See *Buccaneer's Realm*, pages 19-20. Less specific, a newspaper report of a privateer attack lists "3 Fuzees, 3 Swords, and some Axes and Pistols" as left behind by boarders. See *The Boston News-Letter* of January 14, 1705/6.

Page 160, closed quarters. Another tactic to defeat boarders, effective but seldom used because it was extremely dangerous to the boarded ship, was to literally "blow up" a deck, typically the quarterdeck or forecastle, or both. The tactic is mentioned in Smith's *Sea-man's Grammar and Dictionary* (page 57), and Luttrell notes that it was used in 1695 by an English East India ship to defeat a 36 gun French privateer who boarded her three times: "and after several hours dispute, and a 3d boarding, blew up her deck, with 70 French men, and so gott off." See Luttrell, *A Brief Historical Relation of State Affairs* (Oxford: University Press, 1857), vol. 3:505.

Page 160, closed quarters. Broken bottles were sometimes scattered on the deck to help repel boarders, in combination with powder chests and closed quarters. Given that many seamen, pirates included, went barefoot, this would have been fairly effective. See “J. D., a Antigua, to J. A., in London, March 5th, 1710-11” in *Penn and Logan Correspondence*, vol. 2:433.

Page 160, powder chests were made of a board to which two boards were nailed like the roof of a house. A powder cartridge was placed inside, the ends closed up, and a top, sloping like a seaman’s chest was nailed on. Between the “roof” and the top was shrapnel. The chest could be fired by a fuse, or better, via a hole leading below. Powder chests could be nailed to the deck or nailed down—“plated”—via “winding plate,” which is soft metal stripping. Often the bases were nailed to the deck the first time a ship made ready for engaging, and then were left on deck, to be armed when necessary. See Park, *Defensive War By Sea*; Little, *Buccaneer’s Realm*, and *The Wonderful Preservation of the Ship Terra Nova*, page 347, cited in *Buccaneer’s Realm*.

Page 160, placement of powder chests. The *Terra Nova* (see above) mounted seven chests, some on the quarterdeck (four?) and the remainder on the forecastle. The Derby (see above) mounted powder chests on the forecastle, quarterdeck, and poop deck.

Pages 190-195, land warfare: see chapter 18 in *Buccaneer’s Realm* for far more detail.

Page 194, alternating fire. This method of keeping a constant fire was not original with the buccaneers, filibusters, and *boucaniers*. Bernal Díaz del Castillo in his *The Discovery and Conquest of Mexico* describes its use against Aztecs.

Page 208, 1st paragraph, tattoos. The reference to Ned Ward is taken from a secondary source, which may have cited Ward in error. I have been unable to identify the reference to the Jerusalem cross, or tattooing in general. The reference to Dampier, seamen, and the Jerusalem cross is primary, however, and there exist plenty of other period references to “pricking” (tattooing).

Pages 210-211, dueling: see also chapter 19 in *Buccaneer’s Realm* and the chapter on the myth of dueling for command in the forthcoming *The Great Pirate Legends Debunked* by Benerson Little.

Page 223: Insert the following: *boss-loper*: a Dutch *coureur de bois* or ranger.

Page 223. Insert the following: *écumeur de mer*: (Fr.), a pirate or *corsaire*.

Page 224. To *linguister* add: See also *truchman*.

Page 225. Insert the following: *truchman*: an interpreter or *linguister*. See also *linguister*.

Page 226. Add to *grommet*: Also referred to as a *powder monkey*, at least from the mid 17th century.

Page 226, *musician*. The following notes apply: Pirate captains John Banister and Howell Davis also had a trumpeters aboard in 1687 and 1719, respectively; the practice was common for centuries. Everard mentions a drummer aboard ship, as does the trial record of Charles Harris and his crew, whose drummer beat his drum on the roundhouse of the pirate sloop during action. Aboard the pirate ship *Mocha Frigate* in 1697 were “hautboys” (oboes), drums, and trumpets. See Taylor, *Jamaica in 1687*, 49; William Snelgrave, *A New Account of some parts of Guinea and the Slave Trade* (1727, ???); Everard, “Relation of Three Years Suffering,” 289; “Trials of Thirty-Six Persons for Piracy &c” in *Memoirs of the Rhode Island Bar*, edited by Wilkins Updike (Boston: Thomas H. Webb, 1842), page 289; and the firsthand accounts in *Pirates of the Eastern Seas, 1618–1723: A Lurid Page of History* by Charles Grey, edited by George MacMunn (London: Sampson Low, Marston, & Co., [1933]), pages 140, 145.

Page 229. Add the following to *barca longa*: Spanish *barcalongas* were rigged with lug sails.

Page 230. Add the following to *barque longue*: In the French navy of the late seventeenth and early eighteenth centuries, a *barque longue* was also a category of “small frigate” used for coastal transport and lightering duties. Some were three-masted and “ship rigged,” while others were two-masted with square courses, topsails, and

spritsail, with no lateen or gaff mizzen. La Salle's *La Belle*, lost off the Texas coast and recently excavated, was a *barque longue* of three-mast type, as was probably was another *La Belle* lost in 1683 at Petit Goave. A *barque en fagot* was a *barque longue* shipped in pieces and assembled at its destination. In general, see du Pas, *Batimens*.

Page 231. Add the following to *dogger*: (Fr. *dogre*, Dut. *dogger*). Also *doggerboot*, *dogre-bot*.

Page 232. Add the following to *fluyt*: the flute began to be replaced in the last quarter of the 17th century by the *hackboat* or *hagboat* when the narrow upper decks of the flute were no longer required. However, the term *fluyt* remained in use for some time afterward to indicate a moderate to large cargo vessel with round bow and stern.

Page 233. Add the following to *hackboat*, *hagboat*. The *hagboat* is descended from the *fluyt*, and is essentially a flute without the narrow upper deck and sharp tumblehome.

Page 234. Insert the following: *hourcre* (Fr.): an *urca* or *hagboat*.

Page 234. Insert the following: *Hulk*: Also *Hulke*. The English term for the rich Spanish *urca* of 700 to 800 tons which called on Honduras, often as a *navio de registro*. The French referred to it as the *hourque*, *houcre*, or *ourque*, also terms used in the 18th century for *hackboat* or *hagboat* (from the Dutch *hoek-boot*). A *hulk* is also an old ship used as a platform or machine in a shipyard, for example to set up masts or aid in careening.

Page 237. Insert the following: *well boat*: In general, any fishing boat with partitions in the hull for holding catch. The term was often used in the late 17th century in reference to fishing boats, usually French, converted to privateers.

Page 238. Add the following to *yacht*: In the New World, yachts were seen most often at New York and in the Dutch colonies, and occasionally at Jamaica and St. Thomas.

Page 248, black strap beer. The sieur de Dièreville, a traveler to Acadia in the late 17th century, describes this beer as a "decoction" of the tips of fir trees, yeast, and molasses fermented for two or three days. The heavier ingredients settle, and the "light coloured Liquor" at the top is drunk. See de Dièreville, *Relation of the Voyage*, 91, 256. The text is in both French and English.

Page 251, add to *swivel*: maximum range 150 *toises* when charged with 2.5 pounds (French) powder; maximum effective range 150 *pas* (probably *commun*), equivalent to 960 feet/320 yards and 400 feet/133 yards respectively. See Le Blond, *l'Artillerie Raisonnée*. Paris: 1761, 215-218.

Page 251, add to *swivel*: Francis Povey in his *Sea-Gunner's Companion*, page 42, recommended that guns loaded with case shot not be fired beyond 60 yards because the dispersion pattern was too great. This agrees with tests I helped conduct in Denmark with a paterero loaded with burrel or scrap iron, in which the pattern at 60 yards was six feet.

Page 251, modified ranges. Musket shot: 700 to 800 feet (among the English), 700 to 1000 feet (among the French). Buccaneer gun (*fusil boucanier*): 800 to 1000 feet. Pistol shot: poorly defined, may range from half-musket to 210 feet, and possibly only to 105 feet.

Page 251. Add *gunshot range*: equivalent to *point blank range*. See for example Falconer's *Dictionary* and *The British Mariner's Vocabulary* by J. J. Moore (London: 1801).

Page 252, measures and distances. The length of a French cable was 100 *toises* (six French feet) or 120 *brasses* (French fathom of five French feet = 1.62 meters = 5.329 feet), roughly 639.5 English feet.

Page 252, anker: According to *The Merchant's Magazine: or Trades Man's Treasury* by Edward Hatton (1712), an "anchor" in Holland was 10 English wine gallons.

Page 252, add *butt*: "Of Sack 2 Hogsheads. Currants—15 to 22 C." (hundredweight). From Hatton.

Page 252, add *cask*: an uncertain quantity or capacity.

Page 252, add *chest*: of sugar, for example, 10 to 15 hundredweight, of indigo, 1.5 to 2 hundredweight.

Page 252, add *jar*: 18 to 26 gallons liquid measure.

Page 252, add *keg*: 4 or 5 gallons.

Page 252, *rundlett*, add Also a various measure from 3 to 20 gallons. (From Hatton.)

Page 252-53, add *quintal*: of fish, 100 pounds.

Page 253, *serroon*, add A serroon or *serón* typically weighed 1 to 4 hundred pounds depending on the product.