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NAVAL DOCTRINE COMMAND

Norfolk, Virginia



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Navy and Military Doctrine in France

by

Dr. James J. Tritten

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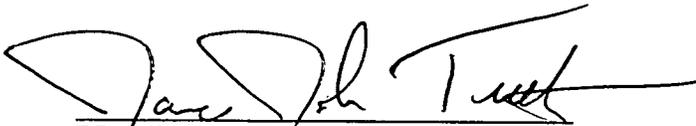
NAVAL DOCTRINE COMMAND
Norfolk Virginia

Rear Admiral F.L. Lewis
Commander

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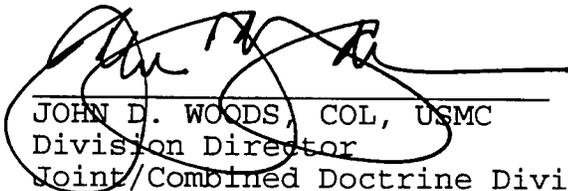
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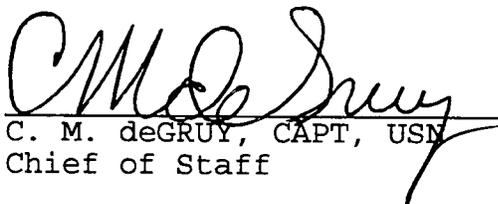
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<p>HISTORY OF DOCTRINE IN THE FRENCH NAVY 1300-1994 AND CONTRAST WITH MILITARY DOCTRINE. NAVY DOCTRINE WAS PRIMARILY DEFENSIVE AND ATTRITION-ORIENTED. WITH THIS DOCTRINE, ROYAL FRENCH NAVY ACHIEVED HIGH LEVELS OF COMBAT SUCCESS. AFTER THE REVOLUTION, DOCTRINAL DEVELOPMENT AND COMBAT SUCCESS WERE AFFECTED NEGATIVELY. UNLIKE IN THE FRENCH ARMY, THERE HAVE NOT BEEN MAJOR DEBATES OVER DOCTRINE DID NOT ROUTINELY OCCUR IN THE FRENCH NAVY. ONE MAJOR EXCEPTION IS THE PERIOD OF DISSUSSION OVER THE JEUNE ECOLE (NEW SCHOOL). FRANCE HAD A WELL-DEVELOPED NAVY DOCTRINE FOR MULTINATIONAL OPERATIONS. THEY ALSO EXPERIMENTED WITH NEW DOCTRINAL CONCEPTS AT SEA. THE FRENCH NAVY DID NOT CONFUSE INITIATIVE WITH ONLY OFFENSIVE WARFARE-THERE IS A HISTORY OF INITIATIVE BEING AN INTEGRAL PART OF DEFENSIVE WARFARE AT SEA. DOCTRINE CHANGED MOST OFTEN WITH CHANGES IN GOVERNMENT RATHER THAN CHANGES IN MILITARY TECHNOLOGY. MANY EXTREMELY VALUABLE LESSONS CAN BE LEARNED FROM A REVIEW OF DOCTRINAL HISTORY IN THE FRENCH NAVY AND MOST OF THESE LESSONS ARE VALID TODAY.</p>					
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NAVY AND MILITARY DOCTRINE IN FRANCE

by
James J. Tritten¹

In a major regional contingency fought some years ago, indigenous ground forces converged on a narrow peninsula in the southern part of their country where they cut off part of a foreign army of occupation. This foreign army had occupied a small seaport from which the commander planned to disrupt indigenous transportation. The enemy commander anticipated being supported, or if necessary evacuated, by sea. The enemy navy was one of the best in the world. The indigenous country had no navy of its own to speak of and had sought an arrangement with a major world seapower, France, to remedy this deficiency.

France had already provided the indigenous forces with combat-experienced ground officers and modern military equipment. France now landed a major ground force in the northern part of the country and a French fleet sailed in support from a forward-deployed location. The French Navy commander detached a small portion of this fleet to land additional troops and to also blockade the occupied seaport. Enemy navy forces soon arrived and were surprised to find the numerically superior French. The enemy admiral had recently assumed command without the benefit of having met with his subordinates to outline his personal doctrine and without having any work-up exercises.

The French fleet commander, operating within an established navy doctrine, knew that if he remained in a defensive posture near the seaport, he would doom another French squadron soon to arrive with additional troops, artillery, and other supplies. Keeping in mind his main objective, the French fleet commander seized the initiative and tactically maneuvered his forces to offensively meet the enemy fleet far enough out to sea to permit the safe arrival of the resupply squadron. The enemy met the French challenge but were unable to gain any advantage. The French fleet commander engaged the enemy but husbanded his assets without a serious decisive engagement, keeping the enemy fleet in play for four days.

Ships from the French resupply squadron safely landed their troops and equipment and then sailed north, embarked coalition ground forces, and brought them to the area of the occupied seaport. Coalition forces massed around the seaport and engaged in bloody but successful warfare against an entrenched enemy. The enemy capitulated in the face of the

¹ The views expressed by the author are his alone and do not necessarily represent those of the U.S. government, Department of Defense, or the U.S. Navy. The author would also like to acknowledge the contributions of Hervé Coutau-Bégarie, Professor André Delaporte, former *Chef de la Section Historique du Service Historique de la Marine*; Commander Charles Allen, USN, and the research and translation services of Lawrence Holder of the Naval Doctrine Command. The author is indebted to Captain Alain Delbury, FN, French Military Mission to the Supreme Allied Commander, Atlantic, for his assistance in obtaining source materials and for comments on this paper.

repeated assaults, no possible escape, and the lack of reinforcement. The French fleet maintained station and provided security for the victorious coalition forces by deterring a second but belated attempt by the enemy to reinforce, resupply, or evacuate enemy forces at the seaport.

The above example describes, in reality, the actions taken by the French, British (the enemy), and Americans (indigenous forces) off the Virginia Capes and at Yorktown in 1781. Owing a great deal to the French Navy for the military victory over Great Britain, which resulted in the independence of the United States, it is appropriate that we review the legacy of the defensive navy and the military doctrine in France employed at these decisive battles to see if there is something that we can benefit from today as well.

Doctrine of the *plume*¹

Although most histories of French Navy thought start in the 17th Century, there is at least some record of prior activities.² Gilles de Rome, an advisor to King Philip IV (The Fair) who ruled from 1285-1314, proposed some novel tactical ideas in a book entitled *De regimine principum*. Much later, we have recorded the book *Débat sur le héraut d'armes* (1455) which responds to English claims to control of the seas. A few decades later, Philippe de Cleves published his *Instructions sur le fait de la guerre* which addressed the potential of artillery tempo dominating tactics the way that speed affects strategy and recommended maneuvering to harass the enemy and repel his attack. In 1516 (or 1520), Antoine de Conflans published *Les faiz de la marine et de la navigaie*. During the reign of Henry II, who ruled from 1547-1559, there appeared *Stolonome* or *Traité contenant la manière de dresser, fournir équiper et entretenir en tout temps en bon ordre une armée de mer consacrée aux galères*. It is, however, with the final expulsion of England from the continent that France begins to seriously address its Navy.

One cannot overlook the influence of events ashore on the development of French Navy doctrine. During the Thirty Years War (1618-1648), in which France became the dominant power on the continent of Europe, Marshal Henri de la Tour d'Auvergne, Vicomte de Turenne, achieved the withdrawal of Holy Roman Empire forces from a city and then chose to not exploit the victory with a pursuit. In a subsequent encounter, Turenne maneuvered William Frederick, the Great Elector of Brandenburg, out of Alsace without engaging him in battle.³ Thus we saw the adoption of elements of a maneuver warfare philosophy in Europe with the French military clearly influenced. We will find the same influence on navy doctrine.

Armand Jean du Plessis, Cardinal de Richelieu, the all-powerful Chief Minister as of 1624, was the founder of the permanent navy of France and author of an embryonic doctrinal book--*Testament politique*.⁴ He had himself appointed in 1626 as *Grand maître, chef et surintendant général de la navigation et commerce de France*. Richelieu organized a centralized navy from the surviving remnants of feudal France--four independent admiralties whose admirals rarely went to sea. The result of Richelieu's efforts was to create a strong

corps of administrative officers, the *plume*, who had more power and influence than the actual warfighting seamen, the *épée*, or the sword. The tension between these two types of officers would become a theme around which we can study French Navy doctrine.⁵

The French were one of the first modern sea powers to examine past sea battles in order to garner lessons learned in a formal fashion. Jean-Baptiste Colbert, under Louis XIV, instituted a naval program that included taking advantage of the lessons learned by the Royal Navy in their wars with the Dutch (1652-1674). The French quickly changed their preferred tactical formations to capitalize on the lessons learned by the English in combat.

Credit for doctrinal development in the French Navy belongs to Admiral Anne-Hilarion de Costentin, Comte de Tourville. Tourville was a proven charismatic⁶ combat commander against the combined English and Dutch fleets at Bévéziers [Beachy Head] (1690) and against the large multinational Smyrna convoy (1693).⁷ He was the driving force behind the development of the French Navy into a modern fighting force. Tourville drilled his fleet into a disciplined force which would respond to his command. His *Signals and Instructions*, issued before Bévéziers, were the first such written French Navy doctrine and were credited, in part, for his victories. These instructions were reissued and revised between 1691-1693.

The French sailing and fighting instructions, signals, and orders of sailing issued by Tourville showed superiority over the English in the area of fleet organization and signalling. A strength of the French system was to retain separate books for fighting and sailing instructions so that advances in one area were not hostage to the other. Tourville's 1690 instructions included an innovative pocket indexed signal book. Some of the French sailing formations of this era were later copied by successful English and British commanders.

The War of the League of Augsburg (1688-1697) exhausted the French treasury. With a dearth of resources available for the fleet, doctrinal development was given to conservation of assets. In addition to the need to husband resources, the general respect for the fleet suffered tremendously following its defeat at the Battle of La Hougue (1692) and subsequent destruction of remaining survivors in full view of the French army watching from the shore.

As a consequence of their inability to invade England, the French turned to *guerre de course* as their preferred strategy for fleet employment. *Guerre de course* had been favored by two successive ministers of the navy under Louis XIV and Louis XV as well as the subject of an influential pamphlet *Mémoire de la course* [also known as *Mémoire sur la caprerie*] by the famous engineer Sébastien Le Prestre, Marquis de Vauban. Vauban, a *Maréchal de France*--a reward for his work with coastal and northeastern frontier fortifications--advocated small squadrons raiding the rich commercial sea lines of communication as a way to replenish the national treasury. His recommendations carried great weight due to the stature in which he was held in France.⁸ Vauban, however, had no vision of control of the seas nor of contesting control. To a large degree, war at sea was turned over to privateers, such as the famous Jean Bart, who operated successfully under Vauban's doctrine for *guerre de course*--commerce warfare.

Père Paul Hoste, a professor of mathematics at the Royal Naval College at Toulon, was influenced by Tourville to write the first major French scholarly book on naval tactics, *L'Art des armées navales ou traité des évolutions navales* (1697). This work codified geometric form for fleet formations, such as the line-ahead, the line-abreast, and the line-of-bearing. Although Hoste's emphasis was on precision and control, his book also demonstrated to the officer corps what was possible with strict control of their limited assets. Hoste addressed the respective advantages of fighting from windward and leeward, whether a fleet of inferior strength should or could fight, and he tried to compare the doctrine of warfare at sea to that of warfare ashore. Hoste praises Tourville for his ability to prevent engagements. *The Art of Evolutions* was republished in 1727 and still used as a text toward the end of the 18th century. It was translated into Dutch, Greek, and twice in English--being published in London in 1762 and 1834. Incidentally, Hoste was a Jesuit priest with twelve years of sea duty and service as a chaplain to Tourville.⁹

Although these early French doctrinal efforts reduced the chaos of the battlespace and allowed for the fleet to fight as a disciplined whole, administrative officers, known as the *plume*, or the pen, biased navy doctrinal development in favor of the more controllable defensive. Warfare ashore was influenced by the maneuver warfare philosophy and the science of fortifications advanced by Vauban. Warfare at sea was similarly geometric and precise. Chance would be eliminated by control. Warfighting seamen with an opposing view were known as the *épée*, or the sword. There had been a tension between these two types of officers from the very foundation of the French Navy. Generally during this period, the *plume* was more dominant.

Defense and control, rather than offense and the *mêlée*, were stressed although Hoste did address breaking the enemy's line. The performance of the English against the combined Franco-Spanish fleet off Malaga in 1704 reaffirmed the defensive navy doctrine favoring control advocated by Hoste. The English maintained a strict battle line. Facing an economic crisis and invasion from the northeast, the larger ships of the navy were laid up and France returned to *guerre de course*. In a larger sense, *guerre de course* was a form of attrition warfare, in which the application of pain was to be felt over time rather than as the result of one decisive battle--war of annihilation. In this form of warfare, a major decision is not sought.

These early doctrinal endeavors had the unintended consequences of a resulting a loss of initiative on the part of the individual commanders and their inability to attempt to profit from unexpected opportunities. The French Navy continued to use Tourville's signal book and doctrine until the Seven Years War (1756-1763). During this war, individual fleet commanders began to issue their own local instructions to supplement their centralized doctrine.

When sailing against a convoy on the offensive, French Navy commanders were obligated to capture merchants rather than attempt to sink enemy warships. In a major convoy action in October 1707, a French squadron of privateers, under René Duguay-Trouin,

ignored this doctrinal principal and instead concentrated its attack on the five defending British escorts under Commodore Richard Edwards.

In the Battle off Toulon (1744) a French fleet, under Admiral La Bruyère de Court, successfully escorted a Spanish squadron under Don José Navarro through a blockading English fleet under Admiral Thomas Mathews. De Court was under orders not to fire unless attacked and offered to intermix his ships amongst the Spanish. Navarro refused and, although the subsequent tactical engagement was indecisive, the Spanish squadron made its way to Cartagena where Navarro was decorated with the title of Marqués de la Victoria. The elderly (78 years old) de Court, on the other hand, was relieved of command for leaving the deck with only superficial wounds.

French Navy doctrine also covered defensive interactions with merchantmen. French convoy escort commanders were subject to severe penalties for deserting a convoy that they were to protect and merchant ship masters could be heavily fined for failing to sail in a convoy. If a friendly convoy could be protected with a maneuver rather than firepower, this would be done. In battles where the French Navy fought to defend convoys, escort commanders and captains often fought gallantly. For example, during the Second Battle off Cape Finisterre (1747), a significantly smaller escort force under Commodore Desherbiers, Marquis de Létenduère was defeated under Rear Admiral Edward Hawke's attack, but the convoy of 250 merchants escaped.

The French escort under Létenduère had damaged the British to such a degree they could not pursue the merchants. Létenduère thus distinguished himself as an inspirational combat leader against one of the most aggressive and successful of English commanders, even though he did not precisely follow French Navy doctrine. Unfortunately, the loss of Létenduère's force was also the loss of France's last combat-experienced convoy escort squadron and this had an impact on France's ability to ensure further safe delivery of seaborne shipments. Hence Létenduère's selection of aggressive tactics, not in conformance with doctrine, illustrates the point that such decisions might not necessarily be in the best interests of the nation as a whole, although it makes excellent copy for history books.

In an interesting interpretation of international law, France was obligated by a defensive alliance with Spain to provide warships to Spain during the latter's War of Jenkins's Ear (1739-1741) with England. A French squadron of twenty-two ships essentially operated as a part of the Spanish fleet and convoyed a division of Spanish ships to North American waters. The massing of forces and the presence of French warships deterred a British attack on the Spanish. Otherwise during this war, France claimed the rights and privileges of a neutral. Cooperative interaction between the French and Spanish fleets over the years would eventually lead to the development of multinational navy doctrine.

The French fleet at Minorca in 1756 operated in accordance with a defensive doctrine for maritime support of ground forces in which the object of the tactical action between fleets was to protect the beachhead and not necessarily to attempt to sink enemy ships. The French

victory under *Lieutenant-général* Roland-Michel Barrin, Marquis de La Galissonnière, was not only a great victory for France but resulted in major problems for the defeated Royal Navy commander. As a result of the campaign for Minorca, 150 transports carrying some 15,000 troops were successfully landed and eventually took the island. Unfortunately, the subsequent disaster at Quiberon Bay (1759) again ended France's dreams of an invasion of England and forced her to fight the remainder of the Seven Years War at sea off her own shores on the defensive.

Doctrine of the *épée*

Under Louis XV's Minister of Marine, Étienne François, Duc de Choiseul, navy doctrine was removed from the province of the *plume* (the pen--administrators, mathematicians and scientists) and brought more directly under the control of the *épée* (the sword--fighting fleet officers). After assuming the ministry in 1761, Choiseul issued formal fighting instructions, and created a training squadron and a formal marine corps on the British model. Despite many reform efforts and excellent theories for navy development, Choiseul served a reluctant sovereign who had competing financial and political needs and chose not to bolster the fleet.¹⁰ In the absence of a vast overseas empire, France turned her attentions elsewhere and the fleet was destined to be considered a force for coastal defense and war by attrition; raiding was once again turned over to privateers.

The two leading figures of the reforms instituted under Choiseul were then-Captain Sébastien François de Bigot, Vicomte de Morogues and Jean François de Cheyron, Chevalier du Pavillon.¹¹ Neither of these officers altered the fundamentally defensive nature of French Navy doctrine of war by attrition and both sought to minimize risk. Morogues also believed that warfare at sea would hardly be decisive in war as a whole. For France and her particular geographical position, this was true at the time. Morogues' bias, however, tended to further drive navy doctrine towards the defensive and escape as an honorable alternative to battle.

Morogues published a textbook for cadets of the academy at Brest, *Tactique navale ou traité des évolutions et des signaux* (1763). This book appeared after the end of the Seven Years War, putting into complete book form ideas which had been in circulation amongst the officer corps for some time. Although somewhat modeled upon Hoste's work, Morogues wrote as a navy officer for navy officers and his tactical ideas tended to be more practical than theoretical. Morogues' signalling system was far more complete than any in previous practice. Interestingly, he accepted the role of *élan*, bravery and experience as necessary ingredients for success when a smaller force faced a larger one. He even accepted the concept of outflanking and breaking the enemy battle line, although only in special cases where one had a superior force or it was necessary to seize easy targets or to exploit a break in the line created by the enemy.

Morogues' combat experiences at Quiberon Bay (1759) reinforced his strong bias in favor of the defensive form of warfare and control as well as the futility of actions between forces of equal strength. Instead, Morogues argued, one should mass strength against

weakness. Unfortunately, for a variety of political, economic, and cultural reasons, French governments did not normally see themselves supporting a fleet which would be able to regularly face the Royal Navy as equals.

Tactique navale ou traité des évolutions et des signaux was privately published and not in conformance with the official French Navy signals book. As such, it is difficult to establish how much impact it had on combat in the fleet. It was reprinted once, translated by the British, and a Dutch edition was published in 1779. Yet Morogues' book must have had influence in the fleet since it was a textbook at the academy, was widely read and reinforced the idea that control and defense were the answers to the British offense and an emerging appreciation for innovation during battle.

Captain Jacques Bourdé de Villehuet, an officer in the service of the French East India Company, wrote *Le manoeuvrier ou essai sur la théorie et la pratique des mouvements du navire et des évolutions navales* (1765). This book included sections on the preparation of the crew for battle, boarding tactics, doctrine for engaging enemy ships, and how to shift from sailing formations used during transit to those used in battle.¹² It was published in several editions and was translated into English and Dutch. Another 1765 publication, *Ordonnance du roi*, also emphasized control over local freedom of action.

The second leading figure during the Choiseul reforms was Jean François du Cheyron, Chevalier du Pavillon. Pavillon developed a set of signals which were accepted by the French Navy following a series of two meetings of flag officers in 1773 and 1775. The signals were given trial during fleet exercises and published in 1776. They were authorized for fleet use in 1778, but individual commanders apparently were given the option to adopt them, as in the Royal Navy.

French Navy doctrine was to "exercise rigid tactical control over their fleets throughout the whole action, by means of an excellent system of signals. The French used one particular flag to represent each digit, and by hoisting combinations of flags could quickly indicate any signal in the numbered signal book."¹³ The French made a science of naval warfare and created an incredibly complex system of manuals and accompanying signal books that was retained until after the end of the Napoleonic Wars. Unfortunately, the direction of the battle signals available were not towards the actual defeat of the enemy fleet.

The French victory by Admiral Louis Guillouet, Comte d'Orvilliers, at Ushant (1778) over Admiral Augustus Keppel, provides an excellent opportunity to review the effectiveness of existing doctrine in both navies. Keppel operated under both the centralized Royal Navy fighting instructions and his own additional instructions. D'Orvilliers operated under his own instructions prepared and influenced by his chief of staff, the Chevalier du Pavillon. Keppel engaged d'Orvilliers without first having properly formed a battle line and the resulting attack was ragged. The French fought generally on the defensive and their immediate objective was to impair enemy mobility by damaging masts and sails rather than to take prizes. D'Orvilliers achieved this; generally getting the better of the British. Keppel and one

of his subordinates were court-martialed after the battle, essentially for failing to do their utmost, but both were found innocent. The same complaint could have been lodged against d'Orvilliers since French mobility was impaired to a much lesser extent, but the French seemed less inclined than the British to initiate legal proceedings following lost or indecisive battles.

A Combined French and Spanish fleet operated during 1779 to gain control of the English Channel. Overall command was exercised by d'Orvilliers who issued a newly revised set of his signals and instructions for use in both fleets--multinational navy doctrine. Although the fleets had not operated together before this, some Spanish ships were eventually able to successfully act as integral parts of French squadrons in addition to forming their own national Squadron of Observation which would join the battle once the enemy was engaged. Other attempts to combine assets, such as in the Caribbean, were less successful.

French naval command, at times, was given to army officers. Jean-Baptiste Charles Henri Hector Théodat, Comte d'Estaing, an infantry officer during the Seven Years War, when he was promoted to *lieutenant-général*, was subsequently appointed governor-general of San Domingo and simultaneously first *Chef d'Escadre des Armées Navales* (Commodore). At the Battle of Grenada (1779), his opponent, Vice Admiral the Honorable John Byron, failed in an offensive attack leaving himself vulnerable to counter-attack or destruction of his convoy. The Comte d'Estaing, in turn, failed to use his superiority and seize upon the opportunity, being content that he had prevented the British from landing troops ashore. Regular French Navy officers, such as then-Captain Pierre André, Bailli de Suffren-Saint Tropez, criticized this decision and inaction.

The failure to capitalize on their superior ability to control their forces and to have them promptly respond to signals was demonstrated during Commodore Destouches victory over Admiral Mariott Arbuthnot off the Virginia Capes in March 1781. After blunting a British attack on his ships, Destouches broke off and withdrew from the shores of Virginia rather than either fully exploiting the victory or continuing on to land troops destined to support Major General Marie Paul Roch Yves Gilbert Motier, Marquis de Lafayette. Destouches was subsequently criticized at court and by some of his officers although at the end of the battle, Arbuthnot's forces remained between the French ships and Virginia.

The same criticism can be levied against Rear Admiral François Joseph Paul, Comte de Grasse-Tilly (another former Army officer), who having acted boldly in his maneuver from the Caribbean to the Virginia Capes (September 1781) and his subsequent victory over Admiral Lord Thomas Graves, failed to act in a daring manner during the first day of the Battle of the Saints (1782). Of course Admiral Lord George Brydges Rodney's failure to exploit the victory over de Grasse on the second day of the battle is the subject of controversy and proof that this problem was not limited to only one navy. Despite his subsequent humiliation due to his losses and capture at the Battle of the Saints, Admiral de Grasse is remembered by a grateful America for his support and success off the Virginia Capes and its resulting impact on coalition military operations ashore at Yorktown.

The one French Navy officer to whom both sides acknowledge an innovative offensive fighting spirit was Pierre André, Bailli de Suffren-Saint Tropez. Then-Commodore Suffren engaged in a series of five battles against Admiral Sir Edward Hughes in the East Indies between 1782-83. Suffren is admired as one of the greatest tactical innovators ever. He is generally credited by most sources as being the first to order his captains to attempt to break the enemy's battle line, although this was in fact also done earlier by de Grasse, under whom the Bailli served. Suffren issued plans before each battle in both written and verbal form--even exhorting his captains to do the best that they could under the circumstances. His personality, however, lacked the magnetism of Admiral Lord Horatio Nelson and he did not command the devotion of his men as did Tourville. When necessary, Suffren replaced less effective captains with those who were more bold. There is also no indication that he devoted a great deal of time to the preparation of formal standing fighting instructions.

Suffren was forced to be contented with the immediate tactical victory since his Indian Ocean squadron was of limited size and was essentially on its own without the ability to count on reinforcements or replacements of its battle losses. Hence Suffren was forced to forgo the exploitation phase of battle in order to conserve assets.¹⁴ Upon returning to France, Suffren was rightly promoted to Vice Admiral, but one should recall that he never commanded a great battle fleet.

With their major victories over the British at Ushant and the outcome of the American War of Independence, France rested comfortably on the success of their navy doctrine and signals. Essentially, Pavillon's system was viewed as being vindicated and doctrinal development slowed considerably. Subsequent signals books were all further adaptations of the existing system. Naval commissions were formed to study the question of signals and they reported that there was no need for further development. Two tactical books that appeared in 1787, *Mémoire sur la tactique navale* by Commodore Verdun de la Crenne, and *Tactique navale* by Captain Buor de la Charouliere, advanced no new ideas in doctrine.

There were a few exceptions to this general rule. Another short book about navy tactics to appear in 1787, *L'art de la guerre sur mer, ou tactique navale*, by *Chef de Division* (Commodore) Jurien, Vicomte de Grenier, did advance some new concepts.¹⁵ This succinct work is based upon combat experience and is very much oriented towards battle and not control. Grenier stressed massing strength against weakness much as did Morogues. He exposed the weaknesses of the French close-hauled line-ahead battle plan, attributing the successes that it had attained in combat to British ineptitude rather than any virtue of this formation. Despite some rather innovative suggestions for tactical disposition of the fleet, *L'art de la guerre sur mer, ou tactique navale* was still essentially biased in the favor of the defense and wars of attrition. Although this book was written by a serving admiral, it had little impact on the French Navy. It was translated within a year into English, into Dutch in 1799, and apparently used by the Spanish.

Another exception was Admiral Clause François, Comte d'Amblimont's *Tactique navale, ou traité sur les évolutions, sur les signaux et sur les mouvemens de guerre* (1788). *Tactique*

Navale was also based upon combat experience but more stressed innovation; d'Amblimont advancing the idea of breaking the fleet into separate *pelotons*, or tactical groups with different functions. Subsequently Nelson used this device successfully at Trafalgar (1805). *Tactique Navale* advocated the unrestricted offensive, but this opinion was not shared by the fleet officers.

Generally, French Navy doctrine during the years of war with Great Britain was such that the planned result of an engagement with enemy ships was to cripple their mobility.¹⁶ Although this doctrine would result in, perhaps, fewer shots per engagement (economy of force) it usually did not result in the elimination of the subsequent threat. British warships were not taken prize nor sunk, thus allowing their subsequent refitting and eventual reinstatement into the battlespace. According to French doctrine, the ultimate purpose of naval warfare was not necessarily to engage enemy ships. Indeed, a leeward escape to fight another day was an honorable alternative to battle. French overall strategy was to expand control over new areas of the globe rather than to contest other European powers in battles at sea.

There were obvious exceptions to the rule and in fact some British commanders used the French model rather than attempting to capture or destroy the enemy. French tactics were to fight on the leeward side and fire their cannon on the upswell so as to maximize the opportunities for defense and mobility kills. This French Navy doctrine of avoidance and warfare of attrition, however, when coupled with generally better built ships than the British, sound training, and a well-formed tactical line frequently bettered the offensive Royal Navy who sought the decisive engagement. For the most part, except when led by Suffren, the French Navy fought from the defensive when engaging a fleet of equal strength.

French naval writings during the years of war with Britain included many sophisticated doctrinal issues being debated in all navies. One of these issues was the correct placement of the fleet commander. Should the admiral ride at the van, at the center, in a heavily armed ship-of-the-line or in a fast frigate? Shifting the flag to a frigate had been tried by British Admiral Lord Richard Howe off Rhode Island in 1778 and Admiral Sir George Rodney did the same off Martinique in 1780. Following de Grasse capture at the Saints (1782), French Navy doctrine changed to require that commanders-in-chief fight from frigates. A flag officer embarked in a frigate could see better and his signals could be seen better. On the other hand, it resembled the role of the general officer in most battles and the policy was later abandoned by the new government.

Navy doctrine under the French monarchy was extremely thorough but biased by factors beyond the control of navy officers. Technology remained essentially the same during this era and the major input to navy doctrine was geography, strategic culture, available resources, and government policy. The impending change in type of government was to have a dramatic impact on navy doctrine and the loss of the rich history and lessons learned by monarchist navy officers who had paid for their lessons in blood.

Doctrinal Collapse with the First Republic

As the French became internally preoccupied in 1789 with their own Revolution and its aftermath, neither the aristocratic officer corps, *le grand corps*, nor the new Republican leadership were overly concerned with the finer points of advancing navy doctrine. Many of the good ideas advanced by Grenier and d'Amblimont had simply arrived at the wrong time and many of the valuable lessons learned went the way of the *guillotine*. Instead, the navy of the Republic went to war in 1793 using the basic navy doctrine of the *ancien régime* against the British who had been experimenting and exercising their new tactical doctrine based, in part, on the innovations advanced in the dying days of the French monarchy. Similarly, doctrinal development ashore stagnated and the French Army kept the same drill regulations until 1831. Even when Napoleon Bonaparte's army trained, they did so using the regulations of 1791.¹⁷

What the navy of the Republic lacked in doctrinal development, they made up for in spirit. The Battle of the Thirteenth Prairial [known in Britain as the Glorious First of June] (1794) was one of the greatest convoy battles in navy history. Rear Admiral Louis Thomas, Comte de Villaret de Joyeuse, commanded the Brest fleet in an engagement some 400 miles out at sea. Villaret de Joyeuse's objectives were to ensure the safe arrival of a 130 ship convoy with supplies from America. The loss of the Brest fleet was an acceptable price to pay for the safe arrival of this convoy. To his credit, Villaret de Joyeuse accepted combat against the well-trained and recently exercised Channel Fleet under Lord Howe, one of the most skillful tacticians then in command. Although the Brest fleet was severely mauled during the battle, they succeeded in their overall objective and gave an extremely good accounting for themselves. Despite this defeat, and despite his being of noble birth, Villaret de Joyeuse was not court-martialed nor otherwise sent to the *guillotine*.¹⁸

On the other hand, in one of his subsequent engagements with the British, Villaret de Joyeuse off *Belle Île* (1795) failed to capitalize on a clear advantage over a British squadron with the bulk of the Brest fleet. Villaret de Joyeuse allowed himself to be bluffed by the bravado of the British commander, Rear Admiral Sir William Cornwallis. Within one week, Villaret de Joyeuse suffered a humiliating defeat, the *débandade de Groix* off the *Île de Groix*. Clearly the French Navy was to pay a heavy price for the loss of its institutional ability to advance how it would fight in war. This era marks the low point of the French Navy.

By the end of 1795, the Committee of Public Safety resolved that the navy would henceforth only send out small divisions whose goal was *guerre de course* and raiding distant colonies. With this as official government policy, accepted subsequently even by Napoleon, doctrinal development could not help but be affected. Navy reforms were initiated under a formal Royalist lieutenant, now Minister of Marine Vice Admiral Jean François Truguet, but reforms were all within the context of the assumed role of raiding and not major fleet engagements.

Napoleonic Era

Much has been written about the French loss at the Battle of Aboukir Bay, also known as the Battle of the Nile (1798). Suffice it to say that Vice Admiral François Paul Brueys d'Aiguilliers demonstrated a lack of knowledge of how to fight at anchor; thus indicating a basic failure in doctrinal understanding and/or development. In his correspondence with Napoleon, Brueys expressed indecision over whether to fight at anchor or under sail if attacked. Brueys' ships could have: (1), been formed into a stronger defensive position and amass their firepower against the attack; (2), been anchored closer together; (3), had loaded their guns on both sides; and (4), opened fire at maximum rather than minimum range.

A former navy officer, Audibert Ramatuelle, published a major book on navy tactics in 1802, *Cours élémentaire de tactique navale, dédié a Bonaparte*.¹⁹ To his credit, Ramatuelle did analyze Nelson's success at Aboukir. Unfortunately, he did not take advantage of the lessons of the d'Orvilliers at Ushant and Suffren in the East Indies nor the writings of Grenier and d'Amblimont (although he did embrace d'Amblimont's concept of the *peloton*). Ramatuelle stated that the central point of war was the holding of land ashore rather than the capture of enemy ships. This reflected the strategic culture of France and their inability to come to grips with how to defeat Great Britain. Napoleon saw victory as the result of the defeat of the enemy's army rather than the defeat of the enemy's centers of gravity.

A major result of the French Revolution was that men could be motivated to fight because of an idea and that such men could be fielded into armies in numbers never before seen. With such numbers, commanders had now had new tactical, operational, and strategic opportunities.²⁰ Although this was clearly seen in warfare ashore, it was not so obvious at sea.

Napoleon's expertise in naval matters certainly is subject to question. His ill-fated attempt to invade England in 1801 would have probably proved disastrous if actually attempted. There had obviously been no serious doctrinal development for such an undertaking since there had been no effort to even build a force that could contest control of the Channel from the Royal Navy. Even the type of craft selected for the invasion crossing were not the most seaworthy. The subsequent expedition to San Domingo was a success from the perspective of the navy covering force, but a military disaster ashore. When Napoleon became aware of the crude submarine that had been designed by the American Robert Fulton, his admirals dismissed it as uncivilized.

By August 1805, Napoleon had apparently learned what was required. He ordered his various fleets to sea and ordered them to join together but to avoid combat until they had massed--keeping in mind the ultimate objective. The renewed plans to invade England were foiled by the actions of Vice Admiral Pierre Charles Jean-Baptiste Silvestre, Comte de Villeneuve, commander of the largest fleet that was to support the transport force. Villeneuve had been engaged in extensive operations in which he sought to avoid engaging the British while he sought union with the rest of the French fleet. The British had maneuvered a large

force in the Channel. Villeneuve felt that he could not possibly succeed in contesting control of the Channel and was less than timely in his response to support the *Grande Armée*. When presented with false information about the location and strength of the British, Villeneuve abandoned the field and sailed to Cádiz. Without navy support, Napoleon turned his attention again to continental enemies and his back on the sea.

To understand the subsequent actions of the Combined Franco-Spanish Fleet at the Battle of Trafalgar (1805), we must keep in mind the objective of its commander. Villeneuve was under orders to sortie from Cádiz, join with ships at Cartagena, and transport embarked troops to support an attack on Naples--Napoleon having now abandoned his invasion of England. Villeneuve knew that Nelson awaited him but nothing in his orders said that he was to engage or defeat the British fleet. Nelson was viewed an obstacle to be overcome rather than an object with which he had to deal.

Villeneuve was himself a brave man but he also understood the limitations of the Combined Fleet in training and quality of their ships.²¹ His misgivings were shared by officers in both fleets as they met in a pre-battle council of war. Villeneuve had the advantage of visual observation of the blockading Nelson and chose his moment to emerge from the harbor; while a squadron of British ships had been detached for logistical duties. The Combined Fleet commander incorrectly thought he had numerical advantage over Nelson and had even organized a separate Squadron of Observation with what he calculated was the excess. Villeneuve's final instructions, issued on the day of the battle, accurately foretold Nelson's tactics, but provided no advice on how to combat it.²² In short, French Navy doctrine had nothing serious to offer him for guidance.

Once at sea, Villeneuve failed to provide for tactical reconnaissance and essentially gained no significant information on Nelson's actual strength until the morning of the battle when he hastily reintegrated the Observation Squadron back into the main fleet. A series of poorly executed signals and missed opportunities doomed the Combined Fleet to fight on the defensive. Villeneuve even issued a general signal: "every ship which by her present position was not engaging, to take any such steps as would bring her as promptly as possible into action." In the hands of Nelson's captains, such a signal would have had meaning. For the Combined Fleet, the lack of combined doctrine, training, and sound ships make the signal an interesting footnote to history. The footnote is more curious because, since the signal was addressed to no one in particular, neither the French nor Spanish captains took any action based upon it. There is no question of the bravery of the men of the Combined Fleet, who fought at Trafalgar with honor.

The End of the Age of Sail

Following the defeat at Trafalgar, Napoleon ordered the fleet to resume *guerre de course* and overseas raiding. Privateers initially supplemented the standing fleet, which did attempt to engage the British in distant operations fought over colonies and occasionally fought the Royal Navy in home waters. A few tactical-level defensive victories did little to stem the tide

of ruin under Napoleon. Sailors from the Brest Fleet were landed ashore to serve with the army. Even their commerce raiding efforts lacked success. Despite Napoleon's dismissal of the Battle at Trafalgar, he ordered the following words to be painted prominently on surviving French men-of-war: "France expects that every man will do his duty."²³

The French introduced their own version of the British telegraph system in 1813 as a supplement to the official signal book. In 1819, the newly restored monarchy published a new signal book restoring the traditional signals of Pavillon and Morogues. In 1815, a French Navy lieutenant, the Chevalier de la Rouvraye, published the *Traité sur l'art des combats de mer*, advocating a true offensive spirit and stressing the responsibilities of the individual captain to carry on the battle even if outnumbered. Unfortunately, the book arrived in an era when the new governments questioned even the need for a navy. In 1819, Father de Pradt published an *Appel à la nation française au sujet de sa marine* in which he concluded that the downfall of the French empire was due to wasting resources on the Navy. In 1819 the government decided to support a navy--but the overall employment of the fleet would be *guerre de course*.

In 1821, a French artillery officer, General Henri Joseph Paixhans, published *Idées pour le blindage du batteries flottantes*, advocating modern ironclads mounting only a few large guns. In 1822, he authored *Nouvelle force maritime*, which advocated a competitive strategy vis-a-vis Britain by making her existing fleet irrelevant by the quick building of a modern steam Navy. A series of articles in the *Journal des sciences militaires* by a Navy officer by the name of de Montgéry advocated ships of iron with watertight compartments as well as mines, torpedoes, and submarines. These ideas were well ahead of their time but they had no affect on fleet building programs.

Some twelve years after Waterloo, a French squadron fought side-by-side with British and Russian squadrons to an overwhelming and decisive defeat of the Turks at Navarino (1827). The Turkish fleet operated under the recommendations of a group of French Navy officers, led by Captain Letellier. The Turkish ships, under Admiral Ibrahim Pasha were anchored in fixed semicircular defensive formation. The Europeans fought a mobile offensive under written orders that were identical to Nelson's at Trafalgar. At the end of the battle, sixty Turkish ships had been destroyed without the loss of a single European ship.

Rear Admiral Grivel explained his concepts for fleet doctrine in his 1832 *Considérations navales en réponse à la brochure de Monsieur de Pradt*. Grivel was one of the first to attempt to deal with the overall concept of maritime power. His recommendations, however, followed existing government policies--*guerre de course*. Grivel stated that this would strike to the heart of British power. It was a doctrine of necessity since it was obviously impossible to meet the Royal Navy head on in a decisive battle. Then-Lieutenant Chopart prepared a tactical textbook for sailing ships in 1839 which was translated in 1859 into English and used at the U.S. Naval Academy.

The French military, in general, has always considered *élan* as one of their national strengths. Despite the incorporation of warfighting spirit into military and navy doctrine, the wars of the age of sail indicate that spirit alone is unable to make up for material and training deficiencies. Early doctrinal decisions to fight at sea reflected disdain for the crude broadside employed by the British. Unfortunately, the alternative method of more specific attacks and attempts at mobility kills did not always yield the desired results. On the other hand, a doctrine which included escape as an option allowed for some advantages over the British whose formal doctrine was biased in favor of avoiding defeat.

Doctrine in the Age of Innovation and the Ironclad

The pioneering work of Stanislas Dupuy de Lôme in the 1840s served to introduce the ironclad into the world's navies. The first screw-driven ship of the line participated in the multinational naval operations in the Black Sea during the Crimean War (1853-1856). This war also stimulated French development of rifled artillery. Navy warfare returned to concern over fleet engagements due to the Peace of Paris which outlawed privateering, thereby turning French Navy attention away from *guerre de course*. After much effort, *La Gloire*, an open ocean steam battleship, was launched in 1859.

Admiral Bouët-Willaumez wrote a series of publications which pioneered advances to French Navy doctrine. His *Batailles de terre et de mer* (1855) was attached to a *Project de tactique navale*--outlining provisional tactics for screw propelled steamships. This doctrine included ensuring a superior force with a combined effort at the decisive point. Willaumez annexed to his book a plan of attack with eight main orders.

Willaumez's work was then adopted by the Ministry of Marine in the form of their own doctrinal book *Provisory tactics* (1857). The Ministry also published *Tactique navale* that same year, outlining doctrine for ships of sail and steam. *Tactique navale* was an official navy doctrinal publication whose contents junior officers were expected to master for promotion examinations. Bouët-Willaumez's new navy doctrine was tested in the fleet, reviewed by the Ministry of Marine, and officially sanctioned by a new signal book in 1861. Admiral Bouët-Willaumez was an officer well-experienced with the fleet--he finished his service as Commander-in-Chief.

These early doctrinal writings followed, rather than led, the introduction of new technologies. They were paralleled by the Second Empire, under Napoleon III, in which the emperor kept his naval programs in check so as to not irritate British domination of the sea. In 1863, an experimental submarine was developed but abandoned due to technical difficulties. In 1864, Russian Admiral Gregoire Boutakov published *Nouvelle bases de tactique navale*, which was translated by a French Navy officer and then published by the French Ministry of Marine for use by French Navy officers. In 1866, the *Revue Maritime et Coloniale* provided an unofficial forum for the discussion of new doctrine and other navy matters outside of official navy circles.

Bouët-Willaumez's writings, such as his *Tactique supplémentaire à l'usage d'une flotte cuirassée* (1865) had an impact outside of the French Navy.²⁴ Similarly, the offensive tactics of Austrian Rear Admiral Wilhelm von Tegetthoff in 1866 off the island of Lissa (now Vis) in the Adriatic in the first battle between armored fleets had an impact on the doctrinal development of the French Navy. Admirals Jurien de la Gravière took command of the squadron of evolution (charged with tactical development) in 1868 and after studying the Lissa battle, he embraced the ram, the *mêlée*, as well as the "charge" employed by Nelson at Trafalgar and by Tegetthoff at Lissa. There was a world-wide debate on the supremacy of either the ram or the gun with virtually every major navy embracing the ram.

Naval operations in support of other overseas major regional contingencies generally followed the pattern of the Crimean War.²⁵ The Navy's role was to transport troops to foreign locations, ensure their resupply, and participate in blockades and attacks on fortifications. With no enemy at sea, and operations confined to the littoral, there was little glory in duty with the fleet, although the fleet in 1870 was the second most powerful in the world. Defeat during the Franco-Prussian War (1870-1871) turned French military concerns again toward land warfare. After all, how could the fleet obtain the return of the lost provinces? During the Franco-Prussian War, sailors again served ashore as ground forces--receiving national recognition for their contributions.

La grande guerre versus jeune école

French doctrinal development during the mid to late 1800s continued with ways to include the *peloton* and other ways to form tactical groups as part of larger fleets. France led the world in 1890s in the development of the submarine as a practical weapon of war. The naval ministry supported research into alternative methods of contesting British domination of the seas. The submarine *Narval* was launched in 1899, whereas the British Admiralty did not place orders for submarines until 1901. On the other hand, although the submarine was developed in France, its full potential was not recognized. At first, it was thought of as a submerging torpedo boat suitable for coastal defense. French Navy matters turned to expansion of empire and to military operations other than war.

French Navy thought again flourished at the end of the nineteenth and beginning of the twentieth centuries.²⁶ After years of defeat by the British, the legacy of a defensive navy doctrine, and preference to *guerre de course* and attrition warfare over warfare of annihilation and the decisive battle, the French Navy considered some different ideas. Their *École supérieure de guerre de la Marine* was founded in 1895. *La grande guerre* favoring the decisive battle and deep sea warfare (*guerre de haute mer*) in order to achieve command of the sea occupied the centerpiece of the writings of a number of French Navy officers in the late 19th and early 20th centuries.

Writings supporting *la grande guerre* primarily included: Admirals Jurien de la Gravière, "*La marine aujourd'hui*," *Journal of the RUSI [Royal United Services Institute for Defence Studies]* (1874); Vice Admiral Gabriel Darrieus, *La guerre sur mer* (1907);²⁷ and then-

Commander René Daveluy, *Etude sur la stratégie navale* (1905), *Leçons de la guerre russo-japonaise*, *La lutte pour l'empire de la mer* (1906), and *L'esprit de la guerre navale* in three volumes (1909-1910).²⁸ These writings paralleled those of the American Rear Admiral Alfred Thayer Mahan. As such, they are themselves not official doctrine, but formed a point of departure for official debates over navy doctrine and programming. The mainstream of French Navy thought by the officer corps was in support of concepts found in these writings.

The 1910 *The Naval Battle: Studies of the Tactical Factors*, by Lieutenant Adrien Edouard Baudry, was translated into English for use by American and Royal Navy officers. Indeed, the writings of Darrieus, Daveluy, and Baudry were provided to ships' libraries by the U.S. Navy Department. Unfortunately, *la grande guerre* and *la guerre de haute mer* had a difficult audience following the defeat of France in 1870-1871 in a war in which sea power was clearly secondary.

The alternative view was championed by another group of officers and civilian thinkers whose movement became known as the *jeune école*. These were primarily: Vice Admiral Baron Richild Grivel [son of the previous Rear Admiral Grivel], *De la guerre maritime avant et depuis les nouvelles inventions, Etude historique et stratégique* (1869); Admiral Hyacinthe-Laurent-Théophile Aube, *La guerre maritime et les ports française* (1882), *A terre et à bord, notes d'un marin* (1884), and *De la guerre navale* (1885); as well as the journalist Gabriel Charmes, *La réforme de la marine* (1886); Commander Gabriel Fontin (pseudonym H. Montéchant) and Lieutenant Paul Vignot (pseudonym *Commandant Z*), *Essai de stratégie navale* (1893). The *jeune école* did not represent mainstream naval thought and should be interpreted as a temporary sidetrack resulting from the introduction and opportunities afforded by new technologies in an austere fiscal environment.

The *jeune école* argued that capital ships were becoming more vulnerable to advances in technology and that a well-designed fleet of inexpensive commerce raiders, *guerre de course*, could strike at the heart of British prosperity (an assumed enemy) and cause British shippers and manufacturers to demand peace from their government. Emphasis should also be placed on coastal defenses. Historical navy battles were offered as proof of the inadvisability of contesting a superior force at sea in *la grande guerre* and *la guerre de haute mer*. Grivel in particular argued that naval battle at sea was rarely decisive for the overall war effort as was many ground battles.

The *jeune école* must also be understood in the context of the political and economic situation at the time. French governments lacked the political imperative to devote significant resources to the fleet. Professional officers, such as Aube and Grivel, were trying to develop concepts of operations based upon these political and fiscal realities.²⁹ Grivel especially understood that his government would be unwilling to compete with the British in navy force structure and was looking for an alternative theory for support for the fleet.³⁰ Naturally governments were attracted to doctrinal developments that promised the required political objectives at a lesser cost.

The doctrine of the *jeune école* was offensive (at the tactical-level) but the associated force structure was much less capable than that required for *guerre de haute mer*. The new high speed torpedo boat was the epitome of the type of ship conceived of by the *jeune école*. As Minister of Marine, Aube argued that these torpedo boats could sortie from port and attack British ships in their harbor thus making squadron engagements between main battle forces more successful. These smaller ships were also to be used in coastal defense (*guerre de côte*)--indeed defense of France from blockade by the Royal Navy was the major objective in fleet engagements. Aube also had great hopes for *guerre de course* to both scatter the Royal Navy, making possible squadron-sized engagements nearer to France, and strike at the heart of British power. Essentially Aube argued that France should take advantage of new technologies and that the fleet's doctrine should be based upon a division of labor.³¹

With such a less capable force, an offensive capability at the operational or strategic-levels of warfare were impossible. If France was to fight a war of revenge against Germany (another assumed enemy), it would be fought primarily on land. France began to build torpedo boats and a system of bases on the northern and southern shores of the western Mediterranean. Admiral Aube's vision was that of a far-flung network of French bases, all linked by the Panama Canal being built by French engineers.³² Since the French Navy had been the administrator of most overseas colonies, the views of the *jeune école* were thus entirely consistent with existing government policy. At the height of the influence of the *jeune école*, France, Germany, Austria-Hungary, and Russia abandoned their battleship building programs and even the British Admiralty appeared embarrassed by their continued development of large naval surface vessels.

During the thirty years between 1871 and 1901, France had thirty ministers of marine. With such changes in government, consensus on a coherent naval program was extremely difficult as was agreement on how to fight--doctrine. After some thirty years of debate, wild oscillations in government policies, and a shift in the threat from the British to the Germans, Italians, or Russians, the French government settled on the need to contest command of the sea by engaging an enemy battle fleet, and then conducting operations against the enemy shoreline.

The German naval building program, France's embarrassment during the Fashoda Incident (1898), the unreliability and vulnerability of the less expensive forces demonstrated in fleet maneuvers, and the experiences of Russia and Japan at the Battle of Tsushima (1905) had validated the need for a high seas fleet. In addition, the less expensive option was totally coupled to a single scenario that fell apart in the face of a multitude of possible enemies and missions. Admiral Fournier dissented with this decision and published *La marine nécessaire* (1899), arguing that the battleship itself need not be built to obtain sea control, but that larger torpedo boats and armored cruisers would suffice. Official navy doctrine soon returned under the influence of Admiral Darrieus and professional officers attached to the *École supérieure de guerre de la Marine* but the ideas of the *jeune école* still surface again in France and in other nations from time to time.

Some government ministers were thoroughly sick of the years of debate and the impotency of the nation during the Fashoda Incident, hence the Ministry of Marine ordered the wholesale retirement of active flag officers. This second "decapitation" of the Navy's leadership had a disastrous affect on the navy. Future Admiral Raoul Victor Patrice Castex lamented in 1908 that the navy lacked a general staff which was charged with the development of definitive navy doctrine.³³

The new Minister of Marine, Vice Admiral Augustin Boué de Lapeyrère in 1909, ordered a new building program which was to be completed in 1919.³⁴ Unfortunately, due to their desire to save money over the years and their preoccupation with a vulnerable border with Germany, the French government had failed to pay sufficient attention to the navy before World War I. The French fleet slipped in ranking from second to fifth place in the world.³⁵ How much of this result is due to the debate over doctrine is open to speculation.

20th Century World Wars

During the First World War, the fleet's primary task was to at first maintain the sea lines of communication (SLOCs) with Algeria, and then to patrol their maritime frontiers. The SLOCs were the vehicle for a half-million colonial soldiers and two hundred thousand workers to come to the aid of France in her hour of need. Hence the navy's contributions were strategic in nature, although it did not engage in decisive battle with the German High Sea Fleet. Without a major *guerre de haute mer* role, there was no way to validate pre-war decisive battle doctrinal development with actual performance in combat. Due to a lack of compatibility with the Royal Navy and their inability to operate with the Grand and other allied fleets, the Mediterranean theater was split into national zones of responsibility with the French Navy assigned the lion's share.³⁶ The resulting over-commitment of naval resources to the Mediterranean theater was a direct result of the inability to form an allied fleet, although the French Navy did operate with the British in the Dardanelles. Like in previous wars, a naval brigade, the *Brigade des fusiliers marins*, fought ashore.

Following World War I, the French Navy came under the influence of the writings of Admiral Raoul Castex, whose influence lasts until today. His five volume *Théories stratégiques*³⁷ are perhaps the most complete theoretical survey of maritime strategy to ever appear. A sixth volume, *Mélanges stratégiques*, was published in 1976 after his death. Castex completed an additional eighteen major works and more than fifty journal articles. Castex's *Les idées militaires de la marine du XVIII^{me} siècle: De Ruyter à Suffren* (1911), makes major contributions in the differences between official doctrine and actual tactical practices. The essence of Castex's work can be found in a summary of some 2,600 pages of original text in French translated into 428 pages in English in *Strategic Theories*.³⁸ His conclusions were that decisive battles were rare in history and that the enemy battle fleet was not always the main object of an operation or battle. Castex's personal views were that navy doctrine should be offensive and oriented toward a decisive battle. Suffren was Castex's professional role model. Standing doctrine should be abandoned if warranted by the tactical situation.³⁹

On the other hand, Castex recognized that his task was to provide doctrine for a second-ranking navy and not one that would ever hope to challenge the British. Thus he formulated the concept of *la force organisée*, the main force which could be mustered for a limited counteroffensive against a superior enemy. There is some similarity between this concept and some of the writings of Julian Corbett in Britain.⁴⁰ Castex gave significant attention to commerce raiding, raids, blockade, mine, and amphibious warfare. The centerpiece of his writings are strategic *manoeuvre* and not battle. Castex wrestled with the influences of technology on doctrine but concluded that the aircraft did not signal the end of the surface ship. In the final analysis, Castex is a blend of *la grande guerre* and the *jeune école*.

Castex's writings appeared to have had only modest direct impact on the behavior of French governments.⁴¹ On the other hand, his writings played the same role that did those of Admiral Mahan in the United States and elsewhere in the world--they were used as textbooks and points of departure for internal government position papers--and Castex is credited with saving the battleship. One can also trace ideas from *Théories stratégiques* to the creation of the new *Collège des hautes études de défense nationale* in 1936. The existing *école de guerre navale* was supplemented by the *centre des hautes études navales*. *Théories stratégiques* was fully translated into Japanese and into Spanish by the Argentine Navy. Various sections were translated into Serbo-Croat, Greek, and Russian. It has been widely used in Latin America and Mediterranean countries. The renowned American strategic thinker Bernard Brodie paid Castex homage in his *A Layman's Guide to Naval Strategy* by stating that "the underlying value of the teachings of men like Mahan, Corbett, and Castex is still largely intact."⁴²

A few other French Navy officers had some influence during World War I and the inter-War years. Rear Admiral Degouy wrote a series of illogical articles and books which, nonetheless, demonstrated a fundamental failure of the Navy officer corps to come to grips with the issue of offensive versus defensive warfare. Others wrote articles and books in which the failure of the battleship to obtain a decisive victory at Jutland was, incorrectly, attributed to the submarine and concepts previously advocated by the *jeune école*.

French Navy policy during the inter-War years was also influenced again by Admiral René Daveluy, who along with Naval Minister Georges Leygues (minister from 1925-1933), became concerned with coastal defense and implementing the various naval arms control treaties which would make obsolete large scale battles at sea. On the other hand, for the first time since the Second Empire, France had a coherent navy policy and doctrine.⁴³ Daveluy wrote *Les enseignements maritimes de la guerre anti-germanique* (1919) which pulled no punches and admitted that the battleship had failed to deliver as expected in the previous war. This book had no real influence in France. Eventually Daveluy advocated an all-submarine fleet and advocates a policy of "sea denial" rather than sea control--but his recommendations were ignored.

It was not until 1938, under Fleet Admiral François Darlan, that a navy construction program began in earnest. That program, however, paid insufficient attention to naval aviation, anti-air warfare, and anti-submarine warfare. France had over committed herself

with the promise to defend overseas possessions. Honor prevailed, and resources that could have been devoted to a defense of France herself were squandered on naval forces that did not save colonies nor contribute to the territorial defense of the homeland.

The French Navy participated in a number of short-length multinational operations with the Royal Navy in the very early days of World War II. Those French Navy forces (the fourth largest in the world at the time) that remained loyal to the Vichy government were never put into a position where they would engage in major combat actions against their former allies.⁴⁴ Hence, there was generally no opportunity to validate the pre-war navy doctrine developed from the thoughts and writings of Castex in general warfare with either side. The French *force de raid* at Mers-el-Kébir (Oran), Algeria, refused to sortie in 1940 to allied, neutral, or Caribbean ports and were effectively dealt with in port by the British Force H under Vice Admiral Sir James Somerville. French Vice-Admiral Marcel Gensoul rejected the ultimatum since it would have contravened the conditions of the armistice with Germany. The French *force X* at Alexandria, Egypt under Vice Admiral René Godfroy were demilitarized and those in the West Indies remained out of the war. Vichy French Navy forces fought off a British and Free French invasion of Dakar later that same year. In short, the French fleet was dismantled.⁴⁵

The value of the French fleet, however, can be measured by these efforts by her former allies to ensure that it remained out of Axis hands. These efforts must have been due to a healthy respect for French Navy warfighting capabilities which were, in part, a measure of French Navy doctrine. During the years of Vichy government, all doctrinal development ground to a halt. The French General Staff forbade the updating of any doctrinal manuals, fearing changes would be interpreted by the Germans as directed at them. Doctrinal development was forced to be done in secrecy. The fleet performed no major training exercises nor was it integrated into either the Italian nor German force structure. Germany negotiated for some time to get the use of the French Navy and the bulk of the remaining French fleet at Toulon was scuttled at the end of 1942 when they tried to seize it.

French forces escaping the German occupation and choosing to continue the war operated outside of normal political control. Eventually, most of the Fighting Free French forces operated with the permission of General Charles de Gaulle, but under the operational control and as an integral part of allied forces. With their experiences operating with foreign forces, French military and navy doctrine as it had been known before the war was to be forever altered. Eventually, French Navy forces participated in integrated convoy escorting and amphibious assaults. Fighting Free French forces operated at the same level of combat efficiency as did their allies.

Doctrine During the Cold War

Free French Navy forces had been quick to adapt to allied navy doctrine during the war, but where there was a choice between allies, the French were usually more likely to accept the American way of war instead of the British. Simply put, the bitter aftertaste of Mers-el-

Kébir was to last many years. For example, following World War II, France turned a good deal of its attention to the recovery and defense of overseas colonies. Most of this effort did not require navy forces for fleet versus fleet interaction, yet the French concepts for operations from the sea using aircraft carriers were based upon American navy doctrine rather than the extensive British history.

One of the more interesting authors on navy matters during the 1950s was Vice Admiral Pierre Barjot. Admiral Barjot embraced the American method of antisubmarine defense (offensive striking forces) and not the British (convoys). Admiral Barjot authored a number of substantive documents which were strategic, doctrinal, and programmatic in nature.⁴⁶ He was an unabashed supporter of aircraft carriers and naval aviation. Barjot authored a number of books, including, *Vers la marine de l'âge atomique* (1955)⁴⁷ and *Histoire de la guerre aéronavale* (1961). Admiral Lepotier prepared some excellent articles for publication in the *Revue de la Défense nationale* as well as two books, *Mer contre Terre* and *La guerre dans les trois dimensions*, but these were never followed-up with additional in-depth strategic thought.

On the other hand, France developed her own doctrine for naval diplomacy. Rather than having large numbers of overseas stationed combat forces like the Americans, or the "swing-through" doctrine of the Royal Navy, the French often achieved the same political purpose with station-keeping ships with limited combat potential. Although France still maintains the limited ability to intervene overseas, the formal *Force Amphibie d'Intervention* was disbanded in 1969.⁴⁸

France joined the North Atlantic Treaty Organization, and even though it did not routinely participate in its military command structure during most of the Cold War, the French Navy developed into a serious combat force with the most modern implements of war. Technological innovation continued with the leading place in the West in the development of surface to surface cruise missiles. France did not attempt to challenge the superpower navies of the U.S. or Soviet Union but rested comfortably with its status essentially equivalent to that of Great Britain.

French Navy doctrine was developed for interactions against fleets of minor powers or to deny the full use of the fleet of a major power. Limiting her development of conventional warfighting capability was the commitment by various governments to maintain a navy portion of the *force de frappe*.⁴⁹ The lack of resources preclude both a nuclear and a serious conventional warfighting capability. The aircraft carrier represented a pre-strategic nuclear capable force permitting flexibility. This solution recognizes that conventional warfighting at sea might not be required if nuclear weapons were used--a decision that would probably be reached due to the performance of armies ashore and not concern for forces at sea. With the predominance of the strategic nuclear force, the resulting role for conventional navy forces might be to sweep the seas ahead of a missile-firing submarine to ensure that it would get to its launch position unaffected by enemy anti-submarine forces.⁵⁰

Doctrinal development was enhanced with the introduction by Admiral Marcel Duval of new courses at the *École supérieure de guerre de la Marine*. Then-Commander Michel Tripier completed the *Fondements et principes de stratégie maritime* (1977), but this paper was circulated only amongst Navy circles until an extract appeared in 1990 in the journal *Stratégique*.⁵¹ Rear Admiral Hubert Moineville, FN (Ret.), prepared an excellent book *La guerre navale* (1982) which was translated into English.⁵² Although most of the book is devoted to overall military strategy, the last three chapters deal with choices to be made in advance of navy actions and the problems in conducting them. *La guerre navale* examines many doctrinal issues that were being debated during the Cold War. Among those is this issue of using conventional, or general purpose, navy forces to ensure the combat stability of nuclear missile submarines.

Admiral Moineville correctly concludes that the introduction of long-range nuclear-armed missiles into navies has fundamentally altered the role of first-rank navies. For example, he concludes that there is no longer a place for naval warfare on a grand scale without the threat to use nuclear weapons. His analysis of the potential of nuclear naval warfare was in line with the thinking of most admirals and navies--nuclear war at sea must be deterred since, if it were not, one weapon detonation would result in the loss of one ship. One weakness of Moineville's work is its lack of historical examples.

Old French patterns of interest in *guerre de course* can be found in Moineville's appreciation for the economic vulnerability (oil) of modern nations. In general, Moineville appreciates the widening political role of naval forces but, like most navy officers, fails to get into the doctrine for the use of nuclear weapons when used against shore targets.

Admiral Pierre Lacoste wrote a book *Stratégies navales du présent* (1981) which was well received in France. A more recent work outlining the history of naval thought in France and elsewhere is the edited book of Hervé Coutau-Bégarie, *L'évolution de la pensée navale* (1990-3). Although not directly doctrine, *L'évolution de la pensée navale* provides an excellent source of doctrinal history and should be translated into English for the wider audience that it deserves. Finally, Vice Admiral Michel Tripier completed *Le Royaume d'Archimède* in 1993, just prior to his untimely death.⁵³

Military Doctrine in the French Army

The French model would not be complete without an analysis of doctrine in the French Army.⁵⁴ The Belgian-invented and French-developed Montigny *mitrailleuse* (machine gun) was introduced by the French Army during the Franco-Prussian War of 1870-71.⁵⁵ Although the *mitrailleuse* increased the effective firepower on the battlefield over the rifle by an order of magnitude, its introduction during the war failed to turn the tide of the war in favor of the French. The reasons for this are that the French Army guarded their new capability too well and were caught up in the technical details of development. The Army failed to devise an effective doctrine for the new weapon or to test various tactics. Furthermore, the *mitrailleuse* was assigned to artillery units where it was viewed as a rather short-range weapon that was

extremely vulnerable to counter-battery fire. Although the introduction of the *mitrailleuse* alone might have swung the war in favor of France, its operational employment was disastrously ineffective. The machine gun was rapidly assimilated into the German and Russian ground forces.

At the outbreak of World War I, the French Army was committed to the defense of France which would occur via a decisive engagement fought under an offensive doctrine. The moral superiority of the offensive would yield an *élan* that would be decisive. The defense of France would be obtained by a clash against the German armed forces fought on foreign soil. An offensive war of annihilation was thought to be short, cheap, and more effective. A correct analysis of the technology available at the time would have concluded that the defensive was the more proper doctrine to follow. Of course the same criticism can be made of the Union army during the American Civil War.⁵⁶

When the war did not develop as planned and the defense of France should have been obtained via a defensive doctrine, the army proved incapable of adapting and millions of men died in military operations that had no significant political purpose. The French Army had a virtual inexhaustible supply of troops which it could throw into mindless attacks--a byproduct of the French Revolution.⁵⁷ This same army was governed by a doctrine that did not allow for individual judgment to resolve crucial questions and assumed that preplanned violence was enough to overcome the enemy.⁵⁸

The conduct of the First World War on the ground has led some scholars to conclude that: "military professionals...usually incline toward the offensive."⁵⁹ There is the obvious need to motivate troops in the face of obstacles.⁶⁰ When the political leadership of a nation assumes that the military is an acceptable tool to obtain decisive political results, the military themselves will probably be forced to favor an offensive doctrine from which decisive and positive results will be obtained.⁶¹ Perhaps another lesson from World War I is that *élan* can and should be exhibited at the tactical-level of warfare while fighting on the operational and strategic defensive.

The catastrophic and unexpected failure of the French Army in the early days of World War II can be, in great part, attributable to their strategy and doctrine for war.⁶² In general, the strategy and doctrine were compatible but the French Army doctrine was based upon a fatally flawed strategy and the strategy based upon an obsolete doctrine. Simply put, the French Army attempted to fight an attrition-based war based upon defense, firepower, centralization, and control in a series of sequential methodical battles while the German Army had adopted a doctrine of maneuver warfare of one continuous battle that made the French response inadequate and self-defeating. Unfortunately, due to the nature of French Army doctrine, there was no alternative solution. When the need for change was recognized, after defeats in the first phase of the war, it simply was too late.

Essentially, France created an army that could not cope with the unexpected or respond to limited threats. One of the very few officers who dared to criticize the overall plan for

defense, General Charles de Gaulle, found his opinions subsumed by political necessity. French military doctrine in the inter-war years became too pedantic and too theoretical. It was impractical. French doctrine was more suited for the classroom than the battlefield. Yet, while in the classroom, officers were rewarded for regurgitating huge quantities of rote data rather than for innovation.

The French Army had in fact changed their doctrine to that of attrition from that of the annihilation-based war of World War I but did not do so fast or thoroughly enough. Technological developments in France were not viewed as "revolutions in military affairs" but rather as minor modifications on the existing consensus. Perhaps because the German Army had to divest itself of equipment following World War I, it was better able to view the new technological opportunities for what they were.

French Air Force doctrine was similarly deficient. Not only had they failed to prepare a doctrine for the correct war, but there were significant doctrinal voids to employ existing forces for the war for which the army prepared. France simply did not have the right type or sufficient numbers of aircraft to contest local air superiority. During the inter-war years, the air force and army had been engaged in a bitter struggle over whether the proper role for aviation was annihilation as an independent strategic bombing force or to cooperate tactically with the land forces engaged in attrition warfare. The result of this struggle was a compromise force that was supposed to do it all and simply could not.

Blame for the fall of France can be laid at the feet of the political leadership for their improper preparation of the Army (poor High Command structure, terms of service, and size of active duty officer and non-commissioned officer corps) as well as at the feet of the officer corps itself. The military leadership of France was more concerned with bureaucratic details than the development of warfighting strategy and doctrine and asking the hard questions.

Conclusions

Even this brief review of the 300+ year history of French Navy and military doctrine in France reveals a treasure trove of doctrinal lessons that should have been learned. As with the Royal Navy, the French Navy has given primary emphasis to the development of tactical-level Service-unique doctrine. That is not to say that other forms of military doctrine have been ignored, but this is clearly where emphasis has been placed. There are many interesting lessons to be learned also by contrasting the differences, as well as noting the similarities, between doctrine in the French and British navies.

Contrasting French and British navy doctrine is somewhat unfair--an unfairness compounded if we only rely upon traditional English-language sources that stress Britain's offensive victories. The French monarchy had an extremely sophisticated concept of attrition warfare and a defensive doctrine for its fleet. The royal French fleet achieved levels of success that were appropriate for France's geography, strategic culture, overall strategy, and

available resources. The fact that the French naval doctrine would not have been appropriate for the Royal Navy of Great Britain is immaterial and misleading.

Quite frankly, the hubris displayed by many American officers and scholars in rebuffing French Navy doctrine due to the history of French military doctrine or of the lack of combat victories by the French Navy during the Revolution or under Napoleon is somewhat shocking. We should be looking for the lessons of doctrinal development and not prejudging its value based upon what happened ashore or due to actions taken by Army officers or governments who set policies for the Navy. To disregard the lessons of the French Navy based upon such reasons is extremely poor scholarship and the height of audacity. In the words of a well-respected scholar, "...France has had little just cause to be ashamed of her navy: the navy may have had some just cause to be ashamed of France."⁶³

When the Comte de Grasse came to the aid of an embryonic United States fighting for her independence, his decisions off the Virginia Capes in 1781 were shaped by a defensive doctrine that gave primary importance to the protection and support of actions ashore rather than the prize-taking of enemy ships. It is because of these decisions and actions that de Grasse successfully supported General George Washington and earned that officer's praise. America remembers the strategic and operational-level vision of Admiral de Grasse, a former army officer, rather than his tactical abilities at sea, defeat at the Battle of the Saints, and eventual humiliation.

A review of French Navy doctrine practiced by a variety of commanders reveals the strengths, and weaknesses, of defensive doctrine and warfare by attrition. Similar reviews of French Army warfare by both annihilation and attrition, and offensive and defensive doctrine also demonstrate inherent weaknesses and strengths of these four methods. These positive and negative lessons have value today--most importantly, there is no one correct military doctrine for all times and all places. French soldiers have paid heavily for the search for the one correct doctrine that could ensure victory--"a cult of the correct military doctrine." The search for such enduring and eternal principles can discourage the adaptability and flexibility which is required in successful doctrine. Doctrinal rigidity can also impede appreciation of potential technological improvements.⁶⁴

Unlike with doctrinal development ashore, France had few such major doctrinal debates at sea--there was general consensus on the defensive doctrine and *guerre de course*--although there was a continued evolution of doctrine even while technology remained relatively constant. Even with a defensive doctrine, at times France was able to meet Britain as an equal at sea while devoting her primary attention to events ashore. The defensive doctrine and *guerre de course* warfare of attrition employed by the navy often allowed significant victories at minimal cost--a conservation of efforts at sea.

France also should be credited with pioneering work on successful multinational navy doctrine, major innovation in fleet organization as an aid to unity in action, as well as accepting the concept of fighting spirit, *élan*, as a part of combat potential. Just as

Clausewitz noted the valuable contribution of *élan* to the *Grande Armée* of Napoleon Bonaparte, the unfortunate consequence of the concept of *élan* was an unwarranted faith by French governments that superiority in warfighting spirit would make up for material and training deficiencies. Furthermore, the history of French military doctrine reveals the dangerous consequences if *élan*, as a battlespace concept to motivate warriors, is transferred from the tactical-level of war, where it belongs, to the operational and strategic-levels or to programming, where it does not.

One of the more interesting aspects of difference between French naval and military doctrine's treatment of *élan* is that the navy fully accepted fighting spirit as a part of a defensive doctrine which would lead to strategic-level victory while general officers in the army, especially prior to World War I, assumed that a defensive doctrine would signal moral weakness and lead to strategic defeat. Naval history suggests that fighting spirit and initiative can be an integral part of a defensive doctrine--meaning that these terms do not necessarily need to be synonymous with offensive warfare.

Another significant difference between the French land and sea forces appears to be that the individual field commander ashore was often not granted the degree of judgment accorded to the commander at sea. Some of this can be explained by the lack of modern long-range communications systems, but perhaps it also was the lack of familiarity with warfare at sea by the governments ashore that resulted in what appears to be far less oversight and fewer courts-martial of naval officers by French governments than were suffered by officers in the Royal Navy.

The brutal effect of changes in governments in France following the Revolution or during and after World War II has another type of effect on doctrine that may still be of interest today. During drastic changes in French governments, the officer corps generally suffered disproportionately. When the corporate memory of the existing officer corps is lost, it is both an opportunity for wholesale change (as during and after World War II) and a period of danger. During the first years of the Republic and Napoleon, the French Navy fought without the benefit of the years of experience that had been gained by its royalist warriors but not yet reflected in official written doctrine. Without the overthrow of the monarchy and the decapitation of its military leadership, subsequent navy battles against the British might have ended quite differently. The lesson here is that military Services need to attempt to bridge drastic changes in governments and wholesale shifts in the inputs to doctrine.

On the other hand, the speed with which great changes in navy doctrine that occurred during and after World War II were probably only possible due to the government changes brought about by that war. In both cases, changes in government resulted in massive losses in corporate military knowledge and the ability to rapidly substitute new ideas. Today, when we in the West witness the wholesale release of combat-proven officers into civilian life, we both risk losing the corporate knowledge of how to fight unless we take the time to document that knowledge in formal written doctrine and we have the opportunity for major doctrinal

change. The major lesson is that doctrinal change is generally available with changes in the type of government or other events which lead to a massive disruption of the officer corps.

Without combat to stimulate doctrinal development, we must turn to other sources for such kindling. One source of doctrinal stimulation is new technology. Generally new technologies are often thought to automatically lead to improvements in combat potential. The lesson of the *jeune école*, however, is that unless the full implications of new technologies are explained to governments, there is a good chance that governments will seize the opportunity to reduce force structure (and therefore capability) resulting in impairment of the military Services. Today we face similar challenges with the *Bottom-up Review* claiming that, with improved technology, its smaller force structure can do as much as President George Bush's Base Force.

Force structure reductions may nonetheless come about if governments are told that a new technology also allows attainment of political objectives at reduced cost. In short, before revealing new technologies to government, military specialists ought to well understand the potential negative consequences. On the other hand, many of the officers of the *jeune école* have earned an unfair reputation for being short-sighted when, perhaps, they were trying to do the best that they could under the political and fiscal circumstances which were their reality.

French fleets have generally sailed with specific orders as to their overall mission issued by French governments. Navy missions rarely, if ever, included the enemy fleet as the main objective. As at Trafalgar, the enemy fleet was an obstacle to be overcome and not an objective itself. One of the problems with such a system is that it assumes that the top governmental leadership understands what missions should be given to the fleet. Generally governments consist of landlubbers with no real knowledge of the sea and how to fight on, under, or over it. Whose responsibility is it then to ensure that the fleet is properly tasked?

The history of the French Navy is one of being mismanaged by governments who could have known better. If the Navy itself is to not educate their governments, then who will? If it is the role of the navy to educate its governments, then this suggests the need for officers skilled in administrative tasks and bureaucratic maneuvering within the shore establishment and at the headquarters-level. There is a rich history of such officers in the French Navy, but there is no clear cut answer whether the efforts of the administrative officer or the warfighter were more successful in doctrinal development. Perhaps the more correct way to view the relationship between administrative officers and the warfighters is that of a *yin/yang* partnership where both make a complete whole. Clearly doctrine must be acceptable to the warfighter, but there is a long history of superior warriors departing the field of battle without leaving behind a legacy of doctrine, or even lessons learned, worthy of their triumphs.

Both the French and British navies operated under formal doctrine during the bulk of their history. There were similarities in the issues that each faced, with differences in how

each attempted to solve the doctrinal issue that needed to be solved. It is by comparing and contrasting the lessons of the history of doctrine in these two great navies that we can turn to a subsequent examination of the doctrinal issues that all navies appear to need to address, regardless of the technologies involved, flag flown, or government served. Simply put, a comparative approach to the history of naval doctrine yields the process common to both.

Notes

1. The French naval section draws heavily upon: Captain Alfred Thayer Mahan, USN, *The Influence of Sea Power Upon History, 1660-1783*, Boston, MA: Little, Brown & Co., 1890, p. 189, 252, 263, 353, 449-467; Captain Alfred Thayer Mahan, USN, *The Influence of Sea Power Upon the French Revolution and Empire, 1793-1812*, New York, NY: Greenwood Press, Publishers, 1968 [reprint of Little, Brown & Co. edition of 1892], vol. I, p. 35-69, 160, 179; Rear Admiral S.S. Robison, USN (Ret.), *A History of Naval Tactics From 1530 to 1930*, Annapolis, MD: U.S. Naval Institute, 1942; E.B. Potter and Fleet Admiral Chester W. Nimitz, USN, eds., *Sea Power: A Naval History*, Englewood Cliffs, NJ: Prentice-Hall, Inc., 1960; Ernest H. Jenkins, *A History of the French Navy: From its Beginnings to the Present Day*, London, UK: MacDonal and Jane's, 1973; Clark G. Reynolds, *Command of the Sea: The History and Strategy of Maritime Empires*, New York, NY: William Morrow & Co., 1974; Helmut Pemsel, *A History of War at Sea: An Atlas and Chronology of Conflict at Sea from Earliest Times to the Present*, Major i.G.D.G Smith, trans., Annapolis, MD: Naval Institute Press, 1977 [translation of *Von Salamis bis Okinawa* first published in 1975]; Geoffrey Till, *Maritime Strategy and the Nuclear Age*, 2nd ed., New York, NY: St. Martin's press, 1984, p. 23, 34-38, 49-51; Brian Tunstall, *Naval Warfare in the Age of Sail: The Evolution of Fighting Tactics 1650-1815*, Dr. Nicholas Tracy, ed., Annapolis, MD: Naval Institute Press, 1990; and Admiral Raoul Victor Patrice Castex, *Strategic Theories*, edited, with an introduction by Eugenia C. Kiesling, Annapolis, MD: Naval Institute Press, 1994.
2. Hervé Coutau-Bégarie, "Reflexions sur l'école française de stratégie navale," *L'évolution de la pensée navale [I]*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1990, p. 31-56.
3. Hans Delbrück, *History of the Art of War, Volume IV: The Dawn of Modern Warfare*, Walter J. Renfroe, Jr., trans., Lincoln, NE and London, UK: University of Nebraska Press, 1985 [original German version published in 1920], p. 335-337.
4. See Hubert Granier, "La pensée navale française dans la première moitié du XVII^e siècle (1600-1661)," *L'évolution de la pensée navale II*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1992, p. 52-53. I am indebted to Hervé Coutau-Bégarie for the information on *Testament politique*.
5. The distinction between the *plume* and *épée* was also illustrated by the social or class distinction between these officers. Although not always the case, the administrative officers were often noblemen, also known as the *rouges* or the *grand corps*. The warfighters were

often, but not always, of non-noble birth and were also referred to as the *bleues* or the *petits corps*. See Ronald Chalmers Hood III, *Royal Republicans: The French Naval Dynasties Between the World Wars*, Baton Rouge, LA: Louisiana State University Press, 1985, p. 14-15, 19-20.

6. Étienne Taillemite, "*Le chef charismatique: une alchimie mystérieuse*," *Cols Bleus*, no. 2252, du 12 mars 1994, p. 7-8.

7. Admiral Anne-Hilarion de Costentin, Comte de Tourville was also the commander at the disastrous Battle of La Hougue (1692), also known as the Battle of Barfleure. Due to his failure to pursue a defeated enemy and exploit the victory at the previous Battle of Béziers (1690), Tourville may have been under some degree of scrutiny by the King. Mortification may have compelled him to launch his desperate attack which had disastrous results. On the other hand, French sources emphasize the poor weather, conditions aboard Tourville's ships, and poor coordination as reasons for the failure to exploit the tactical victory. Although Tourville was in command during the attack against the Smyrna convoy (1693), blame for the failure to exploit the victory can be directly laid at the feet of a subordinate who allowed most of the convoy to escape while maintaining the battle line and awaiting his commander's arrival.

8. Henry Guerlac, "Vauban: The Impact of Science on War," *Makers of Modern Strategy: Military Thought from Machiavelli to Hitler*, Edward Mead Earle, ed., Princeton, NJ: Princeton University Press, 1943, p. 26-48.

9. For four excellent reviews of Père Paul Hoste's contributions, see: Rear Admiral S.S. Robison, USN (Ret.), *A History of Naval Tactics From 1530 to 1930*, Annapolis, MD: U.S. Naval Institute, 1942, p. 215-224; John Creswell, *British Admirals of the Eighteenth Century: Tactics in Battle*, London, UK: George Allen & Unwin, Ltd., 1972, p. 41-49; Michel Depeyre, "*Le Père Paul Hoste fondateur de la pensée navale moderne*," *L'évolution de la pensée navale [I]*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1990, p. 57-77; and Gabriel Darrieus, "*Les Livres des tactique français du Père Hoste au XIX^e siècle*," *L'évolution de la pensée navale III*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1993, p. 209-231. Of these four, Depeyre is the most controversial because he argues that Hoste was not totally devoid of an appreciation for the offensive and his tactics were not mere formations of maneuver.

10. Claude Farrère, *Histoire de la Marine Française*, Paris, FR: Flammarion, 1962, p. 237.

11. *Contre-amiral* Hubert Granier, *La pensée navale française au XVIII^e siècle jusqu'à la guerre d'amérique*," *L'évolution de la pensée navale III*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1993, p. 33-56; and for additional information on Sébastien François de Bigot, Vicomte de Morogues, see Rear Admiral S.S. Robison, USN (Ret.), *A History of Naval Tactics From 1530 to 1930*, Annapolis, MD: U.S. Naval Institute, 1942, p. 257-262.

12. For additional information on Captain Jacques Bourdé de Villehuet, see Rear Admiral S.S. Robison, USN (Ret.), *A History of Naval Tactics From 1530 to 1930*, Annapolis, MD: U.S. Naval Institute, 1942, p. 262-264; and *Contre-amiral Hubert Granier, La pensée navale française au XVIII^e siècle jusqu'à la guerre d'amérique*, " *L'évolution de la pensée navale III*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1993, p. 33-56.
13. Brian Tunstall, *The Realities of Naval History*, London, UK: George Allen & Unwin, Ltd., 1936, p. 139.
14. Admiral of the Fleet of the Italian Navy Giuseppe Fioravanzo, *A History of Naval Tactical Thought*, Annapolis, MD: Naval Institute Press, 1979 [original manuscript prepared in 1956], p. 91-93.
15. *Capitaine de vaisseau François Caron, "Le vicomte de Grenier, héritier de Bigot de Morogues ou fils spirituel de Suffren?"*, " *L'évolution de la pensée navale III*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1993, p. 57-83
16. This point has been made, and refuted, over the years. For a more in depth substantiation with citations from French publications, see Rear Admiral S.S. Robison, USN (Ret.), *A History of Naval Tactics From 1530 to 1930*, Annapolis, MD: U.S. Naval Institute, 1942, p. 530-535.
17. Hans Delbrück, *History of the Art of War, Volume I: Warfare in Antiquity*, Walter J. Renfroe, Jr., trans., Lincoln, NE and London, UK: University of Nebraska Press, 1985 [original German version published in 1920], p. 400.
18. Rear-Admiral Louis Thomas, Comte de Villaret de Joyeuse had apparently been told by Maximilian Robespierre that he would lose his head if he lost the convoy. His survival may have also been, in part, due to his absence from the center of all such activities.
19. For additional information on Audibert Ramatuelle, see Rear Admiral S.S. Robison, USN (Ret.), *A History of Naval Tactics From 1530 to 1930*, Annapolis, MD: U.S. Naval Institute, 1942, p. 453-455.
20. Hans Delbrück, *History of the Art of War, Volume IV: The Dawn of Modern Warfare*, Walter J. Renfroe, Jr., trans., Lincoln, NE and London, UK: University of Nebraska Press, 1985 [original German version published in 1920], p. 390, 398, 402, 414.
21. See especially John Keegan, *The Price of Admiralty: The Evolution of Naval Warfare*, New York, NY: Viking Penguin, Inc., 1988, p. 37-38.
22. Vice-Admiral Pierre Charles Jean-Baptiste Silvestre, Comte de Villeneuve's instructions on the eve of the battle can be found, with analysis, in Lieutenant Adrien Edouard Baudry,

FN, *The Naval Battle: Studies of the Tactical Factors*, London, UK: Hugh Rees, Ltd., 1914 [original French version in 1910], p. 228-232. Villeneuve desired to avoid the enemy so that he might reach his destination.

23. John D. Harbron, *Trafalgar and the Spanish Navy*, Washington, DC: Naval Institute Press, 1988, p. 116.

24. Admiral of the Fleet of the Italian Navy Giuseppe Fioravanzo, *A History of Naval Tactical Thought*, Annapolis, MD: Naval Institute Press, 1979 [original manuscript prepared in 1956], p. 136.

25. French squadrons fought along side the British in the Crimea, against the Boxers, and against Chinese nationalists.

26. This section is also based upon Theodore Ropp, "Continental Doctrines of Sea Power," *Makers of Modern Strategy: Military Thought from Machiavelli to Hitler*, Edward Mead Earle, ed., Princeton, NJ: Princeton University Press, 1943, p. 446-456; and his classic *The Development of a Modern Navy: French Navy Policy 1871-1904*, Stephen S. Roberts, ed., Annapolis, MD: Naval Institute Press, 1987 [revised version of original written in 1937].

27. For an interesting analysis of the contributions of Admiral Gabriel Darrieus, see: Henri Darrieus and Bernard Estival, "*Darrieus et la renaissance d'une pensée maritime en France avant la première guerre mondiale*," *L'évolution de la pensée navale [I]*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1990, p. 89-117. Darrieus' *War on the Sea* was translated into English and published by the U.S. Naval Institute in 1908. This book comes from a series of lectures delivered at the French Naval War College. Darrieus was so highly regarded in Germany that the French Navy General Staff eventually prohibited his publishing under the concern that he was helping the enemy. The original title of *La guerre sur mer* was first *La doctrine*. I am indebted to Hervé Coutau-Bégarie for this point.

28. Then-Commander René Daveluy's *The Genius of Naval Warfare* was translated into English and published by the U.S. Naval Institute.

29. Hervé Coutau-Bégarie, "*Reflexions sur l'école française de stratégie navale*," *L'évolution de la pensée navale [I]*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1990, p. 44.

30. See Étienne Taillemite, "*Un théoricien méconnu de la guerre maritime: L'amiral Richild Grivel*," *L'évolution de la pensée navale II*, Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1992, p. 97.

31. Admiral Romeo Bernotti, *La guerra marittima, studio critico sull'impiego dei mezzi nella guerra mondiale*, Florence, Editoris Carpigiani Zipoli, 1923, p. 24, cited in Hervé Coutau-Bégarie, "*Reflexions sur l'école française de stratégie navale*," *L'évolution de la pensée*

navale [I], Hervé Coutau-Bégarie, ed., Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), 1990, p. 46.

32. Admiral Hyacinthe-Laurent-Théophile Aube's colonial view must be supplemented by that of Admiral Baron Richild Grivel who first developed a French global view of naval warfare. The navy generally took on the *mission civilisatrice* outside of North Africa. Admiral Amédée Courbet became a national hero following his conquest of Indochina and the colony became known as "the admirals' preserve." See Ronald Chalmers Hood III, *Royal Republicans: The French Naval Dynasties Between the World Wars*, Baton Rouge, LA: Louisiana State University Press, 1985, p. 10.

33. Étienne Taillemite, *L'histoire ignorée de la marine française*, Paris, FR: *Librairie Académique Perrin*, 1988, p. 112; citing Raoul Victor Patrice Castex, *le Grand État-Major naval*, Paris, FR, 1908. p. 199.

34. Douglas Porch, "The French Army in the First World War," *Military Effectiveness, Volume I: The First World War*, Allan R. Millett and Williamson Murray, eds., Boston, MA: Unwin Hyman, for the Mershon Center, Ohio State University, 1988, p. 204-205.

35. Étienne Taillemite, *L'histoire ignorée de la marine française*, Paris, FR: *Librairie Académique Perrin*, 1988, p. 390-391.

36. Paul G. Halpern, *The Naval War in the Mediterranean, 1914-1918*, Annapolis, MD: Naval Institute Press, 1987.

37. Admiral Raoul Victor Patrice Castex, *Theories stratégiques*, in 5 vols., Paris: *Société d'Éditions Géographiques, Maritimes et Coloniales*, 1929-1935.

38. *Strategic Theories*, selections translated and edited, with an introduction by Eugenia C. Kiesling, Annapolis, MD: Naval Institute Press, 1994.

39. Étienne Taillemite, *L'histoire ignorée de la marine française*, Paris, FR: *Librairie Académique Perrin*, 1988, p. 216.

40. Castex had Julian Corbett's *Some Principles of Maritime Strategy* (1911) translated in 1932. See Hervé Coutau-Bégarie, "Corbett and Richmond in France," *Mahan is Not Enough: The Proceedings of a Conference on the Works of Sir Julian Corbett and Admiral Sir Herbert Richmond*, Commander James Goldrick, RAN and John B. Hattendorf, eds., Newport, RI: Naval War College Press, 1993, p. 284.

41. Students at the *école de guerre navale* were still educated in traditional French naval doctrine of *guerre de course* whereas students from foreign nations flocked to the *école supérieure de guerre* to study the latest developments in the art of war ashore. See Ronald Chalmers Hood III, *Royal Republicans: The French Naval Dynasties Between the World Wars*, Baton Rouge, LA: Louisiana State University Press, 1985, p. 83-84, 143-146.

42. Bernard Brodie, *A Layman's Guide to Naval Strategy*, London, UK: Oxford University Press, 1943, p. x. On the other hand, one must note the conspicuous absence of Castex [as well as Mahan and Corbett] from a French publication of notable maritime personalities. See Jean Riverain, *Dictionnaire des marins célèbres des temps lointains à nos jours*, Paris, FR: Librairie Larousse, 1967.

43. Étienne Taillemite, *L'histoire ignorée de la marine française*, Paris, FR: Librairie Académique Perrin, 1988, p. 408-409.

44. This section is based upon Ronald Chalmers Hood III, "Bitter Victory: French Military Effectiveness During the Second World War," *Military Effectiveness, Volume III: The Second World War*, Boston, MA: Unwin Hyman, for the Mershon Center, Ohio State University, 1988, p. 221-255.

45. The history of the French Navy in World War II can be found in a series of books readily available in English. These include: Rear Admiral Paul Auphan, FN (Ret.) and Jacques Mordal [pseud.], *The French Navy in World War II*, Captain A.C.J. Sabalot, USN (Ret.), trans., Annapolis, MD: United States Naval Institute, 1959 (Admiral Auphan served as Chief of Naval Operations and Minister of Marine during the Vichy regime); Henri Le Masson, *Navies of the Second World War: The French Navy*, 2 vols., Garden City, NY: Doubleday & Co., Inc., 1969 (more oriented towards hardware); Charles W. Koburger, Jr., *Franco-American Naval Relations, 1940-1945*, Westport, CT: Praeger, 1994.

46. Translations of comments by Vice Admiral Pierre Barjot during the 1950s can be found in declassified issues of the *ONI [Office of Naval Intelligence] Review*. For example, in a series of translations entitled "The Postwar French Navy," *ONI Review*, 9, May 1954, p. 195, Admiral Barjot discussed the American and British methods of antisubmarine defense. Many of these can be found in the Operational Archives of the Naval Historical Center. I am indebted to Captain Peter Swartz, USN (Ret.) for providing me copies of materials he has gathered for his own research.

47. A section of *Vers la marine de l'âge atomique*, Paris, FR: Aimont Dumont, 1955, discusses French naval doctrine (p. 43-58). In general, this book favors the U.S. Navy as a model for the French Navy.

48. A discussion of the "Force of Manoeuvre" can be found in Joffre A. Heineck, "French Naval Development Under Charles de Gaulle," unpublished thesis, Newport, RI: Naval War College, April 14, 1969.

49. There are only a few writings about nuclear strategy and doctrine by French military officers. The one major exception are the important writings of General Pierre M. Gallois. For example, his *The Balance of Terror: Strategy for the Nuclear Age*, Richard Howard, trans., Boston, MA: Houghton Mifflin, 1961.

50. James Cable, *Gunboat Diplomacy, 1919-1979: Political Applications of Limited Naval Force*, London, UK: The MacMillan Press, Ltd., 2nd ed., 1981, p. 138.
51. Commander Michel Tripier, "Les missions navales," *Stratégique*, no. 48, April 1990.
52. Rear-Admiral Hubert Moineville, FN (Ret.), *Naval Warfare Today and Tomorrow*, Commander P.R. Compton-Hall, RN (Ret.) trans., Oxford, England: Basil Blackwell Publisher, Ltd., 1983.
53. Vice Admiral Michel Tripier, *Le Royaume d'Archimède* Paris, FR: *Fondation pour les Etudes de Défense nationale* (FEDN), March 1993.
54. This opinion was not shared by one of the first officers in the U.S. Navy to recognize the need for naval doctrine. See Lieutenant Commander Dudley W. Knox, USN, "The Rôle of Doctrine in Naval Warfare," U.S. Naval Institute *Proceedings*, 41, no. 2 (March-April 1915): 337.
55. This section is based upon: *Generalmajor* Frederick William von Mellenthin and R.H.S. Stolfi with Colonel E. Sobik, *NATO Under Attack: Why the Western Alliance can Fight Outnumbered and Win in Central Europe without Nuclear Weapons*, Durham, NC: Duke University Press, 1984, p. 12-16.
56. I am indebted for this point to Major General I[rrving]. B[rinton]. Holley, Jr., USAFR (Ret.), during his lecture, "Doctrine: The What, the Why, and the How," given at the Air Force Doctrine Center, Langley AFB, VA, June 1, 1994.
57. Stefan T. Possony and Étienne Mantoux, "Du Picq and Foch: The French School," *Makers of Modern Strategy: Military Thought from Machiavelli to Hitler*, Edward Mead Earle, ed., Princeton, NJ: Princeton University Press, 1943, p. 229.
58. Michael Howard, Men Against Fire: The Doctrine of the Offensive in 1914," *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, Peter Paret, ed., Princeton, NJ: Princeton University Press, 1986, p. 520, documents two famous lectures to the officers of the general staff by Colonel François-Jules-Louis Loyzeau de Grandmaison, director of military operations [subsequently published as *Deux conférences faites aux officiers d'état major de l'armée* (1911)] and the *Regulations for the Conduct of Major Formations of October 1913*, influenced by de Grandmaison, which declared the attack and the offensive as French Army doctrine. On the other hand, Howard wrote earlier that these speeches were not so much doctrine as they were echoes of the national mood. See his article "Men Against Fire," *International Security*, vol. 9, no. 1 (Summer 1984): 57. See also: Gideon Y. Akavia, *Decisive Victory and Correct Doctrine: Cults in French Military Thought Before 1914*, Stanford, CA: Center for International Security and Arms Control, Stanford University, November 1993, p. 43-63.

59. Jack Snyder, *The Ideology of the Offensive: Decision Making and the Disasters of 1914*, Ithaca, NY and London, UK: Cornell University Press, 1984, p. 199; and Stephen Van Evera, "The Cult of the Offensive and the Origins of the First World War," *International Security*, 9, no. 1 (Summer 1984): 58-107.
60. Michael Howard, "Men Against Fire: The Doctrine of the Offensive in 1914," *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, Peter Paret, ed., Princeton, NJ: Princeton University Press, 1986, p. 526, cautions the reader to not draw too close a correlation between the doctrine of the offensive and the terrible losses incurred during World War I.
61. Gideon Y. Akavia, *Decisive Victory and Correct Doctrine: Cults in French Military Thought Before 1914*, Stanford, CA: Center for International Security and Arms Control, Stanford University, November 1993, p. 1-6, 65-69.
62. This section is based upon: Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars*, Ithaca, NY: Cornell University Press, 1984, p. 105-140, 220-244; Lieutenant Colonel Robert Allan Doughty, *The Seeds of Disaster: The Development of French Army Doctrine, 1919-1939*, Hamden, CT: Archon Books, 1985; his subsequent *The Breaking Point: Sedan and the Fall of France, 1940*, Hamden CT: Archon Books, 1990, p. 19-32, 321-332; and his chapter, "The French Armed Forces, 1918-40," *Military Effectiveness, Volume II: The Interwar Period*, Allan R. Millett and Williamson Murray, eds., Boston, MA: Unwin Hyman, for the Merghon Center, Ohio State University, 1988, p. 39-69; Lieutenant General Philip D. Shutler, USMC (Ret.), "Thinking About Warfare," *Marine Corps Gazette*, 71, no. 11 (November 1987): 22-23; and Eliot A. Cohen and John Gooch, *Military Misfortunes: The Anatomy of Failure in War*, New York, NY: The Free Press, 1990, p. 197-230.
63. Ernest H. Jenkins, *A History of the French Navy: From its Beginnings to the Present Day*, London, UK: MacDonald and Jane's, 1973, p. 344.
64. Colonel David Jablonsky, USA (Ret.), "US Military Doctrine and the Revolution in Military Affairs," *Parameters*, 24, no. 3 (Autumn 1994): 33.

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