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FROM A PRESTIGE FLEET TO THE JEUNE ÉCOLE

French Naval Policy and Strategy under the Second Empire and the Early Third Republic (1852–1914)

Hugues Canuel

The latter half of the mid-nineteenth century was a period of tremendous and continuous naval transformation—much like the current time. In many ways, twenty-first-century politicians and admirals are arguing in a climate of uncertainty reminiscent of that surrounding the debates that took place in those earlier years. As today, authorities then sought to conciliate conflicting views shaped by the rapid introduction of expensive technologies at sea, the rise of new contenders seeking to challenge the dominating naval power through direct competition or asymmetric warfare, and the ongoing competition for funding among military services that could not agree on a common strategy to face different enemies.

These parallels are not a new idea, and several authors have explored this theme in past years, such as renowned British historian Paul M. Kennedy, who

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recently published an updated version of his 1976 classic, *The Rise and Fall of British Naval Mastery*, with a lengthy foreword that links past with present most effectively.¹ Other works often compare the travails of Great Britain then and the United States today, and replace Germany with China as the rising competitor. Much can be gained from the study of this analogy; but it also can be overly reductionist, as others have argued.²

It is in this context that the study of France’s naval experience during that period, somewhat neglected in the English-language literature in

recent years except for Norwegian author Arne Røksund's 2007 volume on the *Jeune École*, offers an alternative source of relevant insight.³ Napoleon III proclaimed an egotistical Second Empire in 1852, only to see it go down to humiliating defeat in the Franco-Prussian War of 1870–71. From the ashes of empire arose the Third Republic, but the latter would suffer its own dramatic loss of face as a result of France's last major diplomatic confrontation with Great Britain, the Fashoda crisis of 1898.

Within that time span, France initially proved capable of leveraging the extraordinary technological revolution then under way to assemble a potent naval force, second only to that of its nemesis, the Royal Navy (RN). Even as the French force grew in size and complexity, it often was described as the emperor's "prestige fleet"; without a defined strategy, it seemed unable to contribute to the defense of the nation in 1870. Under the Third Republic, proponents of the *Jeune École* first formulated a strategy founded on these same technological advances to shape a different fleet, one trumpeted as being capable of undermining Great Britain's superiority at sea through what would be labeled *asymmetry* today. This policy also proved flawed, as the *Marine nationale* failed to make a difference during the 1898 confrontation on the upper reaches of the Nile River.⁴

The period in question illustrates the requirement for naval policy and strategy to be coordinated closely and founded on a realistic appraisal of a country's security and foreign policy needs; an objective assessment of the technologies available; and the careful acquisition of naval advice whose independence from national politics and party affiliation is preserved, so that enduring political support for a single, long-term shipbuilding program can be secured. This article will show that the naval policy pursued under the Second Empire generated a viable, balanced fleet, but lack of a clearly formulated strategic purpose seemingly left it irrelevant during France's hour of greatest need. The *Jeune École* then put a narrow strategy ahead of the practical limitations that any viable policy must take into account when funding the building of a fleet. Both approaches failed, leaving a bitter legacy that greatly affected France's ability to leverage sea power to mitigate its difficult position on the eve of the First World War.

First, though, this article must review earlier naval developments, shaped as they were by those same effervescent technological developments at sea and contrasting geopolitical ambitions on land that would continue to affect French naval thought for the remainder of the nineteenth century. In the wake of the Napoleonic Wars, technical achievements and developments on the international scene quickly persuaded the country's leadership of the importance of sea power, but debates over the shape this instrument should take endured through the remainder of the century.

FROM ONE EMPEROR TO THE NEXT

French inventors of varied backgrounds often took the lead in developing the technologies that came to revolutionize war at sea in the decades that followed the downfall of Emperor Napoleon I. By far the most transformational element during that early period was the use of steam for propulsion, to escape the vagaries of wind power. In 1824, engineer Jean Baptiste Marestier traveled overseas to study this potent tool and published a monograph that was well ahead of its time, *A Memoir on Steamboats of the United States of America*.⁵ The naval budget of 1826 included funds for building four vessels to experiment with steam propulsion, and France's first successful steam warship, the 910-ton paddle steamer *Sphinx*, was launched in 1829.⁶ Inventor Pierre Sauvage then patented the propeller, whose placement below the waterline at the stern of the vessel alleviated the disadvantages of having large paddle wheels affixed to a ship's sides; the concept was tested with the construction of the dispatch vessel *Le Corse* in 1843.⁷ Such tremendous progress led to the launch of *Napoléon* in 1850, the first purpose-built steam battleship in the world and the lead ship of a class of nine such vessels built over the following decade. *Napoléon* carried ninety guns and used the combination of steam and propeller to reach a speed of fourteen knots (while keeping a sail and rigging as a secondary means of propulsion for economical long-distance cruising).⁸

In parallel with these technological advances, events on the world scene following the Bourbon Restoration of 1815 convinced France's political leadership of the necessity to rebuild a credible navy. Spikes of instability and low-level conflicts flared up frequently as a result of the slow decay of the Ottoman Empire and of Spain, necessitating intervention by warships to defend French interests in Europe and overseas. A military revolt in Cádiz prompted Paris to dispatch army and naval forces to Spain in 1823 to support the Bourbon king Ferdinand VII, while taking the side of the insurgents against the Ottomans during the Greek War of Independence in 1821–30.⁹ France maintained naval forces in the Levant throughout these years, even forming a combined fleet with Great Britain and Russia that destroyed a Turkish-Egyptian force anchored in the Bay of Navarino in 1827, the last major naval battle of the sail era.¹⁰ Paris also dispatched naval vessels in 1831 during civil unrest in Portugal and to Ancona, on Italy's Adriatic coast, because of fighting among Italian nationalists, Austrian troops, and the Papal States.¹¹

Spanish withdrawal from South America and the Caribbean, as well as the degeneration of Ottoman influence in North Africa, led to repeated naval expeditions to tame virulent piracy through the reigns of French kings Charles X (1824–30) and Louis Philippe (1830–48). These often included punitive raids against cities and local potentates who provided safe havens to the pirates.

In the case of Algeria, such raids failed to provide a permanent solution to the threat the Barbary corsairs posed, leading to the occupation of Algiers in 1830 and the eventual annexation of the entire Algerian coast over the course of the following decade. The expedition against Algiers was especially noteworthy, as it constituted the largest amphibious operation conducted during the age of sail. A fleet of thirty-five major warships and three hundred transports (including seven steamships used to tow smaller vessels to shore) landed an expeditionary force of 37,000 men near the coastal town of Sidi Ferruch (now Sidi Fredj) on June 14, 1830. This action, and the effective naval bombardment delivered to support the attack against Algiers two weeks later, as well as the considerable logistical effort required to sustain the expeditionary force from the sea through the following months, showed the impressive level of professionalism and growing reach of La Royale.¹²

Such reach was demonstrated further as French explorers continued mapping out the Indian and Pacific Oceans and annexing new possessions along the way, from the Comoros off the eastern coast of Africa to the islands that would become French Polynesia, while securing a foothold in Madagascar and greater access to China through the Treaty of Whampoa in 1845.¹³

Nevertheless, the limits of French sea power in that era were exposed clearly whenever it clashed with British benevolence, as would be demonstrated in 1839 and again in 1840. In the first instance, a French merchant had claimed property damages incurred during the civil unrest that plagued the early years of the Mexican Republic, but failed to obtain compensation. Using this as a *casus belli*, France dispatched a naval force to occupy Veracruz in December 1838; French ships also enforced a blockade of the ports on the Gulf of Mexico. However, the local authorities still refused to pay compensation. As the crisis dragged into 1839, Great Britain grew concerned about the resulting instability and the true extent of French ambitions in the region. An RN squadron arrived on the scene that March and soon forced a diplomatic resolution through an implied threat to both parties. Mexico blinked first and agreed to pay.¹⁴ This apparent success of France on behalf of its aggrieved citizen proved misleading, as it was British sea power that actually resolved the standoff, while the French squadron would not have been able to resist effectively had London favored Mexico in the dispute.

The limit of French influence was again in evidence the following year, during the so-called Near East crisis of 1840. Although nominally subservient to the Ottoman Empire, Muhammad Ali Pasha had consolidated his personal power over Egypt through the previous decades. He then undertook a military campaign to move into those territories corresponding to today's Israel, Palestine, Lebanon, and Syria. These actions benefited from the support of France, which provided naval and military instructors to the budding Egyptian army and navy in a bid to

grow French influence in the Middle East. This scheme backfired dramatically when Great Britain, Austria, Prussia, and Russia signed the Convention for the Pacification of the Levant (known as the Convention of London) in July 1840 to guarantee the integrity of the Ottoman Empire. When Muhammad Ali refused to recognize the treaty, the European powers dispatched a naval force that blockaded Egypt, neutralized his fleet, and expelled his troops from Syria and Lebanon, leaving him in control of only the province of Acre (Israel and Palestine).¹⁵ With France isolated within the Concert of Europe and unable to mobilize sufficient naval strength to support its Egyptian protégé, Paris could only acquiesce in the *fait accompli*, despite considerable outcry from the French public.

The thirty years following the Bourbon Restoration thus had witnessed a resurgence of the French navy, a renewal that provided successive French monarchs with a potent instrument that often succeeded in influencing events in Europe and overseas, within the larger framework of Pax Britannica. Nevertheless, the events of 1839 in Mexico and 1840 in the Middle East had shown clearly the limits of that same fleet, particularly in view of Great Britain's continued superiority in traditional ships of the line. The trauma of the Near East crisis gave renewed impetus to those who perceived that fast-evolving technologies should be leveraged to circumvent the Royal Navy's supremacy at sea.¹⁶ Instead of attempting to narrow the gap in terms of the classical sailing man-of-war, France perhaps could initiate new building plans to launch increased numbers of steam-propelled warships that would make the British fleet obsolete at once and allow France to seize the lead.

The proponents of such views came to be called the "Modernists" or the "Materialists." They claimed that material superiority of technical means would trump simple quantity in numbers of ships of the line and those strategic factors that historically had conferred an undue advantage on Great Britain, the island nation, over France, the continental power with exposed coastlines and vulnerable colonies.

This discourse was particularly timely in view of France's frail economy at the time; it was in no condition to subsidize the building of capital ships on a scale that would threaten Britain's numerical lead. The failing monarchy of Louis Philippe actually had to cut naval estimates in 1837 and directed that twenty of the navy's forty ships of the line be kept in reserve, as their timber would stay preserved better ashore on the building ways than afloat. The experiences of 1839 and 1840, though, demonstrated that readying the ships for sea, mustering and training the required crews, and acquiring the necessary stores to support them could not be completed in a timely manner when faced with an unexpected crisis.¹⁷

Following the fall of the government of Adolphe Thiers over the Near East crisis, further public outcry led to the convening in 1844 of a special commission to study the use of steam technology at sea.¹⁸ This venue provided great impetus for the Materialists to promote their views, openly seeking “near equality to England in number of ships and superiority in technical skills.”¹⁹ The commission endorsed such ambitions and King Louis Philippe agreed to subsidize this plan through a large increase to navy estimates in 1846–47. This led to a “French naval scare” in Great Britain and its rapid construction of new steam warships to remain ahead of France.²⁰

Although the February 1848 revolution in Paris and the ensuing instability under the short-lived Second Republic impeded the growth of the French navy, important resources continued to be dedicated to the construction of warships, including the previously mentioned *Napoléon*, launched in 1850.²¹ By the time Napoleon III proclaimed the Second Empire in December 1852, he already had encouraged the growth of La Royale and gained important support in promoting a modern navy capable of rivaling Great Britain’s.²² It remained to be seen what use France could make of such an instrument as the emperor set about reasserting French influence in Europe and overseas.

NAVAL DEVELOPMENTS UNDER THE SECOND EMPIRE

Intent on renewing France’s imperial glory but aware of the limits of military power for achieving a dominant stature in Europe, Napoleon III embarked on a bold program structured around three pillars.²³

First, despite the economic recession of the previous decade, France grew prosperous through the 1850s as domestic industries were driven to modernize and leverage new efficiencies gained through the advances of the industrial age. Although he proclaimed an imperial regime, the new monarch was careful to nurture a free economy based largely on the liberal tenets of the time. This made goods from France increasingly competitive on world markets, leading to the development of considerable economic interests overseas as French business acquired larger market shares around the world.²⁴

This economic growth paralleled a renewed interest in colonial expansion, the second pillar of the emperor’s program.²⁵ France may have lost its most prized possessions during the Napoleonic Wars but had managed to retain footholds around the periphery of the British Empire and gained new possessions during the following decades, from North Africa to the Pacific. Napoleon III sought further expansion through the 1850s and 1860s, carefully encroaching on those territories that did not involve direct confrontation with other European powers, such as in Southeast Asia and western Africa. Public support for such endeavors grew through these years as successive governments emphasized the community

of interests between the economic gains the Right sought and the noble purpose of France's *mission civilisatrice*, which was more palatable to the Left.

This imperial renaissance required a third pillar: naval forces to protect French territories and interests around the world. Stability on the European continent left the country's land borders momentarily secured, allowing Napoleon III to dedicate much attention to his navy as he sought the next opportunity to demonstrate that France had regained a place of influence within the Concert of Europe. Another crisis related to the decline of the Ottoman Empire provided just that. A seemingly insignificant dispute between France and Russia over the responsibility to be "Protector of the Christians in the Holy Land" left Ottoman leaders equivocating about which of the two countries would retain this nominal title. Tsar Nicholas I used the opportunity simultaneously to challenge the growing influence of France in Constantinople and to raise anew a long-standing demand for access to the Mediterranean through the Turkish Straits. A first ultimatum conveyed from Saint Petersburg in February 1853 demanded the ceding of all provinces between the Danube and the Dardanelles, free access through the straits, and the protection of all Turkish Christian minorities. Confident of the support of the other European powers, the Ottoman rulers ignored this challenge—and the diplomatic crisis led to war.²⁶

While England and France did not join the conflict immediately, they were sufficiently concerned about Russian ambitions to dispatch naval forces to the Levant once again. The ships made their way up to Constantinople in a show of force, but Russia was undeterred, having already destroyed the Turkish Black Sea fleet anchored in the Anatolian port of Sinope in November 1853 while Russian armies advanced across the Danube and into eastern Anatolia.²⁷ Napoleon III grew increasingly strident about an intervention to succor the "sick man of Europe," and Great Britain agreed to join France in declaring war against tsarist Russia in April 1854. Additional naval squadrons were dispatched promptly and expeditionary forces were embarked in British and French transports. Within months, the coalition had secured control of the Black Sea, blockading the Russian squadron in the fortress of Sevastopol on the Crimean Peninsula and repeatedly bombarding the city of Odessa.²⁸

After a first foray ashore in June to stop the Russian offensive through Bulgaria, the combined expeditionary force was reembarked and landed in September 1854 to lay siege to Sevastopol itself. The remainder of the land campaign became bogged down, and poor logistics combined with dismal sanitary conditions ashore to inflict a dire cost on the expeditionary force. The reputations of both the French and British armies suffered greatly as a result of their lackluster performance.²⁹

Nonetheless, after hostilities came to an end in March 1856, La Royale could boast of several achievements.³⁰ Napoleon III's navy had acted as an equal to the Royal Navy during several naval and joint operations, from securing command of the Black Sea to transporting an expeditionary force of 28,000 men to the theater of operations, successfully landing it first in Bulgaria and then outside Sevastopol. The French navy was able to supply this force from the sea for two years while keeping the tsarist fleet bottled up in port and providing effective fire support to troops on land. Naval operations also took place along the periphery of the Russian Empire, with smaller squadrons deployed in the Baltic and the Pacific.³¹ These operations may not have affected hostilities in Crimea directly, but they did result in Russia dispersing forces that were needed badly on the main front. European politicians and strategists, especially in Great Britain, took note of the French ability to operate large naval forces globally.³²

The war left the French navy in an enviable position. It was the object of imperial pride for Napoleon III, while political circles and public opinion supported continued investment in the fleet. Increased budgets were approved, allowing naval architects to integrate lessons from the Crimean War into new ship designs that reflected the trinity of steam, the explosive shell, and armor plating. France again took the technical lead and began work on the first oceangoing ironclad, *La Gloire*.³³ The new line of ships that followed was but one element of a balanced force that was funded through the unprecedented naval estimates of 1857. This milestone measure provided for "three fleets: one of battleships to uphold France's position in Europe, one of ships for foreign stations to make her respected abroad, and one of transports and gunboats either to conduct colonial expeditions or to land and support troops in another Crimean War."³⁴ This program envisioned the building of forty ironclads; twenty armored frigates; ninety corvettes, gunboats, and other auxiliary units; and seventy-five troop transports capable of embarking forty thousand men and twelve thousand horses.³⁵

However, this naval renaissance came to naught over the course of the following decade. It remained shaped by preparations for a confrontation with Great Britain. The French navy continued to seek near equality in numbers, superior fighting efficiency, and the bold adoption of every technical innovation at sea to gain even a limited advantage over the Royal Navy.³⁶ Although France was successful in repeatedly achieving technical superiority in the areas of steam propulsion, naval gunnery, and ship's side armor, each instance only gave rise to another race—which the Royal Navy set about winning. Once Britain's leaders abandoned their affiliation with sail and the government allocated the required funds, the country easily achieved a commanding lead in new construction by the mid-1860s. Even the vainglorious Napoleon III had to admit that maintaining near parity was beyond French means, and the 1857 plan was scaled down in

1863 and again in 1865.³⁷ As for the fighting efficiency of French sailors over their British counterparts, their grit was never tested during the years of the Second Empire. Although La Royale continued preparing for a decisive engagement with the Royal Navy, this did not come to pass, as a much more dangerous threat took shape on the Continent, making the French navy seemingly irrelevant during the country's hour of greatest need.

1870: NEITHER VICTORIOUS NOR DEFEATED

The French *amirauté* (admiralty) was ill prepared for the coming war. Focused on the competition with Great Britain and expansion overseas, it had dedicated little intellectual effort to figuring out how to leverage sea power against Prussia. The Marine impériale benefited from an overwhelming preponderance over the fledgling Norddeutsche Bundesmarine (North German Confederation Navy), formed in 1867. France could deploy some four hundred vessels (including thirty-four ironclads) crewed by 28,000 men, while Prussia and its allies could muster only 6,200 sailors manning thirty-four vessels, of which only five could be considered seagoing ironclads.³⁸

Such superiority would be of little use, however, unless it could be employed effectively against the enemy, and the French quickly elaborated naval plans to do just that. They sought to defeat ironclads at sea, raid the naval bases at Wilhelmshaven on the North Sea and Kiel in the Baltic, blockade commercial ports and destroy shipping overseas, and land an army corps on the northern coast of the North German Confederation to relieve pressure on the main land front.³⁹

Such objectives may have appeared sound at the time, but they were based on flawed assumptions. Once war came, the Confederation Navy stayed in port, denying French admirals the opportunity to destroy enemy capital ships—the ironclads—through battle at sea. Raids against Wilhelmshaven and Kiel were considered, but new technologies such as marine mines and torpedoes launched from shore, combined with formidable coastal batteries, made such expeditions too risky. French ships were more successful in blockading enemy cruisers isolated in neutral ports overseas, but the interdiction of commercial shipping was undermined greatly by France's reluctance to stop those ships that sailed under the red ensign (flown by British merchant vessels), fearing to alienate Great Britain. Lastly, prewar studies had concluded that amphibious operations against the enemy coast could take place only in the Baltic, in view of the extensive shallows along the North Sea shore. Such an expedition, in turn, would require an active alliance with Denmark, or at least its benevolent neutrality—neither of which was forthcoming during the hostilities.⁴⁰

Worst, though, was that all these contingencies presupposed the readiness of the French fleet to undertake such operations at the beginning of hostilities

in 1870, but this was not the case. When Prince Otto von Bismarck, minister-president of the Kingdom of Prussia and chancellor of the North German Confederation, succeeded in goading Napoleon III into declaring war on July 19, French naval leaders were caught unprepared to launch large-scale operations. Many ships were in refit, while others remained deployed overseas; large numbers of reservists were unavailable, as they already had sailed for the summer Newfoundland fisheries; and orders for the required stocks of coal, food, and other supplies had yet to be fulfilled. These challenges, compounded by the decision to maintain large forces in the Mediterranean to guard transports ferrying troops from Algeria to the *métropole* despite the obvious absence of a German threat in that theater, directly led to the failure to intercept enemy ironclads returning home that summer after an extensive maintenance period contracted to British firms.⁴¹

The French fleet eventually conducted two large-scale demonstrations off the German coast, but they achieved little, and the single naval battle of the war was an inconclusive engagement between two small gunboats (the French *Bouvet* and the German *Meteor*) near Cuba in November.⁴² As the French army crumbled and Napoleon III surrendered at Sedan, the fleet was ordered back to Cherbourg in September to land its heavy guns for the defense of Paris. This was an inglorious end to the naval war, although French sailors would distinguish themselves ashore in the following months.⁴³

FROM THE SECOND EMPIRE TO THE THIRD REPUBLIC

Following an armistice in January 1871, the French government agreed to the terms of the Treaty of Frankfurt on May 10. The Second Empire already had given way to the Third Republic by then, following a populist coup in September 1870, but the monarchist Adolphe Thiers—the premier who had resigned in the wake of the Near East crisis of 1840—eventually formed a provisional cabinet of conservative, rural, middle-class politicians in February 1871. Priority went to repaying the war indemnity, to put an end to the German occupation.⁴⁴

Meanwhile, a climate of *revanchisme* quickly seized France, so the military leadership set about rebuilding the French army—and studying the lessons from the preceding conflict.⁴⁵ Despite the exceptional performance of the navy's officers and sailors ashore, the service's future and its very *raison d'être* came under close scrutiny at the time. In the wake of the navy's inability to contribute to the defense of the nation, many denounced the fleet as a mere instrument of imperial prestige and challenged the legitimacy of continued investment in ships. Even Thiers's *ministre de la marine*, retired admiral Louis Pothuau, lamented that "[a]ll our efforts must be concentrated on land. Indeed, what good will a navy be to us now?"⁴⁶ This context gave rise to several radical proposals. Some promoted

the liquidation of all naval assets except those required for close coastal defense. Others sought to retain just a few sailing ships to train personnel who would be mobilized in the event of war to man a fleet of commerce destroyers improvised from existing merchant vessels.⁴⁷

Nevertheless, Pothuau was able in 1872 to deliver naval estimates along more conservative lines, shaping the Marine nationale for the next two decades. Although the budget was cut dramatically from 210 to 146 million francs and severely curtailed the original building plan of 1857, the program of 1872 still envisioned a fleet of 215 ships—namely, twenty-six ironclad battleships, thirty-four cruisers, twenty coastal-defense ships, eighteen corvettes, thirty-two gunboats, twenty-five troop transports, and sixty auxiliary vessels.⁴⁸ While a pale reflection of Napoleon III's ambition to build a navy of 430 ships, this mix did reflect a remarkable continuity in seeking a balanced force that encompassed units of the line for fleet engagements, cruisers and gunboats for overseas work, and troop transports for amphibious operations. Such a construct was required to pursue the obligations that Minister Pothuau envisioned in 1872: maintain a battle and training fleet at home (the Squadron of Evolutions), defend stations overseas, renew the fleet's material readiness, and sustain schools ashore to continue generating officers and sailors trained in the technical skills that modern warfare required.⁴⁹

This plan showed some willingness to take into account lessons learned from past conflicts, such as the continued requirement for troop transports that had become evident during the Crimean War, and to acknowledge contemporary practicalities, such as the necessity for a colonial power with worldwide interests to deploy long-range cruisers and smaller gunboats. Nevertheless, most senior officers continued to posit that any future confrontation at sea would take the shape of a Nelsonian engagement between massed fleets in a replay of Trafalgar, regardless of the technical innovations that had occurred since 1805. Some earlier authors—namely, Baron Pierre-Barthélémy Portal (minister for the navy and the colonies, 1818–21) and Vice Admiral Jean-Baptiste Grivel, in the 1830s—had professed their belief in *guerre de course* (commerce warfare) as a viable alternative to seeking an engagement with the Royal Navy's main battle fleet, but few championed this approach in the early days of the Third Republic.⁵⁰

After the Thiers government relinquished power in 1873, the program of 1872 was pursued haphazardly even as the British navy was gaining strength from the building plans initiated in the 1860s.⁵¹ Meanwhile, Russia as well as Germany and newly unified Italy launched extensive shipbuilding programs that sought to incorporate the latest technological innovations and lessons learned from the recent American Civil War; they all rapidly whittled away at France's advantage in modern warships.⁵²

The context was ripe for a new strategy that sought to move beyond the Nelsonian tradition by leveraging technological innovations to allow France to resume its position as an influential continental power even as it faced an array of new opponents at sea. But it remained to be seen who would seize this opportunity.

THE RISE OF THE JEUNE ÉCOLE . . .

The French Materialists of the 1840s had sought but failed to define a strategy that would shake Great Britain's command of the sea through technological advances. One author eventually commented on the potential for technology to undermine such numerical superiority in a new way, promoting a form of asymmetric warfare and laying the foundation for what would mature into the *Jeune École* in the following decades. Captain Baron Richild Grivel, son of the previously mentioned Vice Admiral Grivel, in 1869 published an important essay built on two fundamental assertions. First, the French historical experience had shown that great encounters between battle fleets represented a severe danger to the weaker naval power. Second, the French navy did not face one kind of enemy but two, in that in the future it likely would be called on to confront a powerful Great Britain on the one hand and continental powers, weaker in terms of naval strength, on the other. Building a fleet solely dedicated to challenging RN command of the sea was futile. The *Marine nationale* should be organized to confront the navies of those weaker powers through fleet engagements and undermine England's command of the sea through commerce raiding.⁵³ Such a proposition was not that revolutionary in and of itself, but it did underline a critical vulnerability for Great Britain, as Arne Røksund covered so well in his 2007 study, *The Jeune École: The Strategy of the Weak*.

Grivel concluded that, instead of attacking Britain's strongest point—the twenty thousand cannon of the Royal Navy—France should aim for its weak spot—the fifty thousand merchant vessels transporting the riches on which British prosperity depended. He argued that this was a form of warfare in which France would be able to engage for an indefinite period; however, it was not likely that this cruiser warfare would have to last longer than a couple of years, since most certainly it would lead to a substantial rise in insurance rates, and after two or three years no one would entrust goods to British ships. Britain's principal source of national wealth would dry up.⁵⁴

In the 1870s, this proposal was explored further by another serving naval officer, Captain Théophile Aube, who would rise to the rank of admiral and implement his ideas as *ministre de la marine* a decade later. He took Grivel's emphasis on commerce warfare one step further by dethroning the ship of the line as the foundation of naval power. He described a future when technological advances would slow down and fleets would mature to a steady state, somewhat akin to the

latter part of the age of sail. All naval powers eventually would achieve the same level of technological development and qualitative readiness, reaching a stage in which in any given conflict one fleet's superiority would be obvious solely on the basis of numbers. As the weaker side then would not risk its battleships, the *guerre d'escadre* (fleet engagement) would be obsolete.⁵⁵ Aube was also a fervent colonialist who believed that the strength of nations would depend on their overseas possessions. Hence, while accepting, in the wake of the Franco-Prussian War, the requirement to rebuild the army to secure the country's land borders, he proposed that *guerre de course* would be key to maintaining access to colonies and severing an enemy's link to such resources overseas, be it a maritime or continental power. This train of thought eventually caused Aube, unlike Grivel, to posit that commerce warfare would constitute the strategy of choice against both superior and inferior naval powers, and that the humble torpedo boat would be the new "capital ship."⁵⁶

This approach came to be known as the Jeune École, the "Young School," as its proponents were often those younger officers willing to challenge their seniors who appeared to stand for the status quo and the primacy of the ship of the line. The debate grew through the late 1870s and into the 1880s as most navies, including those of France and Great Britain, acquired torpedo boats and fast cruisers that prioritized speed and quick-firing armament over armor and heavy guns. Advocates of the torpedo boat were encouraged greatly by the initial success of these craft during the Russo-Turkish War of 1877–78, especially when a Russian force conducted the first recorded engagement of enemy vessels with ship-launched, self-propelled torpedoes in January 1877.⁵⁷ Further success ensued when two torpedo boats joined France's Far East Squadron, commanded by Admiral Amédée Courbet, then engaged in the Sino-French War of 1884–85.⁵⁸ The hostilities (resulting from the clash of influence between the two powers over Vietnam) were marked by several engagements in which torpedo boats played some role and inflicted actual damages on modern Chinese ironclads acquired from European yards.

Proponents of the Jeune École seized on these isolated episodes as they took the debate over the future of the French navy to the public. Publicists and radical pamphleteers, such as journalist Gabriel Charmes, built on the academic work of serving and retired officers to vilify the naval hierarchy for the apparent shortcomings of 1870. They also denounced the reluctance of the powers that be to endorse new technologies and fashion a revolutionary doctrine that would support French policies better on the Continent and overseas.⁵⁹

The Concert of Europe had crumbled in the wake of the Franco-Prussian War and Germany's imperial ambitions signaled a renewed scramble for colonies. The race for territories greatly increased tensions between France and its

continental neighbors (particularly Germany and Italy), as well as with Great Britain. Public debate in France reached such a crescendo that it again caused a naval scare across the Channel. The British government resigned itself to another round of expensive shipbuilding in 1884—including that of a large number of torpedo boats to fill the gap with France—and in the Naval Defence Act of 1889 announced its intention to maintain a two-power standard.⁶⁰

The naval debate in France took on a unique dimension as it became complicated by the political fractures that plagued the Third Republic. During the 1870s, as the presidency passed from Thiers to army marshal Patrice de MacMahon (in power from 1873 to 1879), successive cabinets had grown increasingly conservative and promonarchical. However, the Left ultimately rebounded and gained sufficient seats in the National Assembly to govern for most of the 1880s, engaging in a wide range of reforms that affected all facets of French society.⁶¹ The reformist wave eventually reached the *Marine nationale* through the assembly's Budget Committee, where republican deputies, led by Étienne Lamy, militated for remodeling the navy's administration, its personnel policies, and eventually its overall strategy.⁶² Officers of the *Jeune École* saw this as an opportunity to promote their views. They allied themselves with radical deputies, passing on position papers and selective information on technological advances, often covertly. Meanwhile, Charmes and other publicists attended meetings of the committee to promote their views. The discourse from the Left became increasingly strident, to the point of identifying the battleship as a symbol of a timorous naval leadership that was repressive of sailors, while painting the torpedo boat as an instrument better suited to promote republican ideas at home and abroad. Senior naval leaders reacted by moving closer to politicians of the Right.⁶³

Several of the Budget Committee's reforms were implemented under Auguste Gougeard, a retired naval captain with republican views who was appointed minister in 1881.⁶⁴ It was under Aube, however, that the *Jeune École* reached its zenith. *Ministre de la marine* from January 7, 1886, to May 30, 1887, the retired admiral immediately ordered that all work be stopped on the construction of four battleships so as to concentrate on the alternative fleet he had been promoting for the previous fifteen years. He submitted estimates for a renewed "building program that included six large and ten small cruisers, twenty large torpedo boats for use against other torpedo boats, fifty *bateaux-cansons*, one hundred regular torpedo boats, and three armored coast-defence ships for use as torpedo boat mother ships."⁶⁵ The fleet was redistributed into three groups: the aging battle fleet was concentrated at Toulon, as an offensive force against the growing Italian navy; older torpedo craft and coastal-defense ships were assembled in Cherbourg, as a defensive force covering the Channel against Great Britain and Germany; and commerce-raiding cruisers were based at Brest, to wage *guerre de course* in the

Atlantic and beyond. In addition, funds were sought for the establishment of a major naval base at Bizerte, Tunisia, as well as a string of coaling stations in the colonies to support those commerce raiders that would deploy around the world in any conflict with Great Britain.

. . . AND ITS FALL

As the recognized father of the Jeune École, Aube left the department in 1887 with his head high, having done more than anybody else in a very short time to lay the foundations for a renewed fleet. These foundations, though, would crumble almost immediately, leaving the French navy a dysfunctional entity right up to the First World War. This resulted from the practical limitations of torpedo boats, the continued fracture of the French naval leadership along political-affiliation lines, and the hard realities of international relations in the 1890s.

Despite these difficult circumstances, the radicalization of his supporters, their more extravagant claims, and the demonization of those opposed to his ideas, one must recognize Aube's intellectual probity. While dramatically altering the navy's building plans, he ordered the conduct of *les grandes manœuvres* (large-scale exercises at sea) to test the ability of torpedo boats under realistic conditions and to develop doctrine and tactics for their employment, whereas such issues previously had been confined largely to the realm of the rhetorical. He instructed the senior leadership to draft extensive lessons learned from these exercises, and allowed naval officers who wished to make public their first impressions—positive or negative—to publish them in civilian journals.⁶⁶

Minister Aube first dispatched torpedo boats on a long and arduous transit under rough winter conditions from Cherbourg, Lorient, and Brest in the Atlantic to Toulon in the Mediterranean. Summer maneuvers then were organized to set the torpedo boat fleet against the battleships of the Squadron of Evolutions. Although the government resigned in May of the following year, forcing him from office, Aube already had ordered for the summer of 1887 an even more ambitious exercise—in which groups of torpedo boats would have attempted to intercept a battle fleet traveling from Toulon to Brest—but his successor canceled it. There were no follow-on maneuvers, as objective study of such experiments at sea quickly was distorted to suit both supporters and opponents of the Jeune École along the political lines that were dividing the Marine nationale.⁶⁷

It was admittedly very difficult to analyze the results of such exercises in any case.⁶⁸ They seemed to confirm both the potential of the torpedo boat—its ability to use its maneuverability to close the battleship to weapon-engagement range—and its fundamental flaws when compared with larger units better suited for long-range cruising, with better sea-keeping qualities and autonomy beyond the few days for which a torpedo boat realistically could be expected to sustain

itself. As well, the maneuvers did not explore fully the potential countermeasures against such new craft, nor did they attempt to determine how torpedo boats could detect and intercept enemy warships beyond their very limited visual range, as the maneuvers had been controlled to ensure contact between opposing fleets.

As successive governments in Paris grew more moderate over the following years, the influence of the Jeune École rapidly waned, but did not disappear altogether. The technology existed, and several of its proponents were now senior officers who still believed the torpedo boat offered some potential for use, on the basis of their interpretation of the 1886 maneuvers. Cabinet instability also greatly complicated the formulation of enduring policies, as no fewer than twenty navy ministers were appointed between December 1887 and February 1906. Each tried to impose his imprimatur on the institution, but seldom was in office long enough to secure lasting reforms.⁶⁹

Meanwhile, the competition for influence in Europe and the race for colonies overseas continued unabated. New coalitions took shape on the Continent to replace the Bismarckian order, and the powers of the Triple Alliance (Germany, Austria-Hungary, and Italy) engaged in sizable shipbuilding programs. The growth of European battle fleets was fueled in part by the teachings of an American sailor and scholar, Captain Alfred Thayer Mahan, who gathered a very large and enthusiastic following in the United States and Europe following the publication in 1890 of his classic, *The Influence of Sea Power upon History*.⁷⁰ This book marked the resurgence of the “historical school” and sought to affirm the primacy of the battleship, a concept immediately endorsed in most European capitals—with the exception of Paris, where controversy continued between the Jeune École and the partisans of the main battle line.

While domestic and international politics grew increasingly complex, the readiness of the French fleet declined. By 1889, eleven older, wooden-hulled, armor-plated ironclads still were part of the battle line, while only one cruiser could achieve a speed of eighteen knots; the others—legacies from the Second Empire shipbuilding program—could maintain fourteen knots at best, well below the capability of other European powers’ modern construction. Similar inferiority also applied to the characteristics of endurance, range, gun caliber and rate of fire, and armor strength.⁷¹

This state of confusion was evident in the landmark program of 1890. Although the measure annulled many of the projects Aube had promoted in 1886 and aimed at responding to Britain’s Naval Defence Act of 1889 as well as the threat of the Triple Alliance, it still paid lip service to the Jeune École through an eclectic mix of platforms: twenty-four battleships, thirty-six cruisers, forty high-seas torpedo boats, fifteen coastal-defense ships, 220 smaller torpedo

boats, and a foreign-station fleet of thirty-four cruisers. But the construction of ten battleships, forty-five cruisers, and over one hundred torpedo boats over the next decade would have been required to bring the fleet up to such strength—and even this was well beyond the capacity of French shipyards. The incoherence of the plan was obvious, as funds for the development of a naval base at Bizerte; the provision of coaling stations overseas; and the construction of torpedo boat tenders, or mother ships—essential elements for the conduct of commerce warfare overseas and torpedo boat operations beyond the coasts of France—were not included.⁷² Such confusion continued in another plan crafted in 1894; in the words of one historian, it intended to make everybody happy, with “a few scout cruisers and some battleships for the admirals and a lot of torpedo craft and some special commerce-raiding cruisers for the *Jeune École*.”⁷³

Great Britain also regained its place as France’s most likely enemy in the late 1880s, ranking above even Germany as a result of the ongoing competition for colonies.⁷⁴ When France’s Captain Jean-Baptiste Marchand reached the isolated post of Fashoda (now Kodok) in southern Sudan in 1898, he soon faced a much larger force under British major general Sir Horatio Herbert Kitchener, and France and Great Britain prepared for war.⁷⁵

Had the confrontation turned into an armed clash on the shores of the White Nile, the final decision likely would have been determined at sea. The British strategy would have leveraged an overwhelming advantage in modern battleships and cruisers simultaneously to annihilate the aging French battle fleet in the Mediterranean, had it dared to come out; intercept and destroy any expeditionary force sent from the *métropole* to Africa; blockade France’s ports; destroy the country’s commercial shipping; and mop up isolated French colonies.

In return, even under the most optimistic prognosis, while the Marine nationale could have inflicted damage on those British ships blockading French ports close to shore and undertaken a campaign of commerce warfare overseas, the latter would not have exercised a real impact until well after the face-off at Fashoda had concluded. As for French torpedo boats, they could have conducted small-scale raids against the coasts of England, but these actions likely would not have threatened British ability to sustain forces on the upper Nile through Egypt.

Unable to support Captain Marchand in Fashoda, and fully conscious of the Royal Navy’s superiority in terms of numbers, matériel, and strategic disposition, France could only accept a humiliating diplomatic retreat. As Germany’s Kaiser Wilhelm II reportedly commented, “Poor France. She acknowledges herself beaten without a shot having been fired. That is abdication on the sea. They have not read their Mahan!”⁷⁶ France withdrew its forces from Sudan, and Paris and London agreed that the watersheds of the Congo and Nile Rivers henceforth would divide their countries’ respective spheres of influence.⁷⁷

There followed a period of intellectual introspection. The Jeune École rapidly lost ground, leading to the appointment of Jean Louis de Lanessan as minister in 1899 and the promulgation of the 1900 shipbuilding program, in which the big-ship navy once again came to the fore. The measure mandated the construction of a first tranche of six modern battleships and five armored cruisers over the course of the following eight years.⁷⁸

Lanessan did not deny the importance of smaller, faster cruisers and torpedo boats for specific tasks, and he promoted the establishment of “flying squadrons” of fast armored cruisers in the Atlantic and the Mediterranean to support commerce raiders breaking out of French ports during an enemy blockade. He also encouraged the growth of a fledgling submarine capability—the 1900 program included requirements for twenty-six of the vessels, along with twenty-eight destroyers and 112 torpedo boats.⁷⁹

However, Lanessan’s promotion of a balanced fleet centered on the battleship took the navy back toward the time of the Second Empire, when it had cultivated the ability to challenge any other navy at sea. In the words of historian Arne Røksund, “Lanessan’s insistence on organizing the French Navy for a possible conflict with Great Britain was, however, not solely based on threat assessments. He pushed the argument one step further. He insisted that by using the most advanced and powerful navy of the world as a standard against which to measure itself, the French Navy would have nothing to fear from the navies of the Triple Alliance.”⁸⁰

FROM FASHODA THROUGH THE FIRST WORLD WAR

Fashoda did not mark the final passing of the Jeune École in France. Indeed, a more left-leaning cabinet came to power in 1902 and the radical Camille Pelletan was installed as *ministre de la marine*. Until the end of his tour in office in 1905, he canceled orders for large ships and asked for more torpedo boats.⁸¹ The fracture of the naval officer corps into deeply resentful factions whose members sought to sabotage each other’s careers and who brought their conflicting views to the public also continued into the decades leading to the First World War.⁸² Worse, even though Pelletan’s successor, Gaston Thomson, reinstated the fundamentals of the 1900 program, French shipbuilding had fallen behind in the naval arms race among the other European powers and the United States, which was proceeding at full speed. Then, even as French contractors struggled to deliver the ships ordered in 1900, Great Britain fundamentally revolutionized naval warfare by launching the “all big gun” *Dreadnought* in 1906. France ordered its first equivalent only in 1910.⁸³

This confused state of affairs would leave France by 1914 with an inferior fleet that included only four dreadnoughts, compared with thirty-one for the Royal

Navy, twenty-one for Germany, four each for Italy and Austria, seven for Russia, and nine for the United States. The remainder of the French fleet amounted to an unsystematic assembly of disparate classes of ships limited in their ability to cruise and fight at sea as coherent units. Again France's navy made only a limited contribution to a war, even as the nation was waging a fight to the end on the western front.⁸⁴

Despite such strategic confusion at sea, naval policy eventually matured as a reflection of a more realistic appraisal of the country's security and foreign policy needs, an objective assessment of the available technologies, and independence from the prevailing party affiliation so as to secure enduring political support. Accepting peaceful coexistence with Great Britain after centuries of intermittent conflict and relentless rivalry, France agreed to the terms of the Entente Cordiale in April 1904.⁸⁵ The Russo-Japanese War of 1904–1905 seemed to confirm the continued dominance of the battleship, especially after the Nelsonian confrontation at Tsushima.⁸⁶ The importance of the battle fleet and the requirement for interoperability with the Royal Navy came to the fore when France, with active support from England, handily won its diplomatic confrontation with Germany during the First Moroccan Crisis over the status of Tangier in 1905–1906 and the Second Moroccan Crisis over Agadir in 1911.⁸⁷ Such developments led to the Anglo-French Naval Convention of 1912, whereby the two powers agreed to a division of labor at sea. While Britain concentrated its fleet in the North Sea and guaranteed the French coast against naval attacks from Germany, France based its main fleet in the Mediterranean and assumed responsibility for the defense of British interests in the region, including the Suez Canal.⁸⁸

France supported this commitment with an ambitious shipbuilding plan that the National Assembly approved in 1912. That program envisioned the construction by 1920 of twenty-eight dreadnought battleships, ten *éclaireurs d'escadre* (battle cruisers), fifty-two *torpilleurs d'escadre* (destroyers), ninety-four submarines, and ten *bâtiments pour stations lointaines* (unarmored cruisers for service overseas).⁸⁹ France ran out of time for delivering this balanced fleet prior to the German offensive of August 1914, but the precedent had been set and a focused shipbuilding effort resumed after the First World War.

Wartime operations at sea did not negate all the precepts that the Jeune École had put forward during the ironclad era. As naval historian Theodore Ropp notes in his masterful study *The Development of a Modern Navy: French Naval Policy 1871–1904*, Admiral Aube had predicted—quite presciently, in an 1882 article—the course of a future war, elaborating that (1) the weaker fleet would refuse combat and remain in port, (2) the stronger one also would remain in port, owing to a fear of torpedoes, (3) and the only real activity at sea would be *guerre de course*, (4) under which offensive actions against merchant shipping would be

merciless. Ropp argues that “it is possible to view the events of the war of 1914–18 under exactly those four points.”⁹⁰ Jutland and the Dardanelles notwithstanding, the Hochseeflotte (German High Seas Fleet) and the British Grand Fleet stuck to their bases, one as a “risk fleet” in Wilhelmshaven, the other moored in Scapa Flow to preserve its numerical superiority. The torpedo finally came into its own as a strategic weapon when married with the “submersible torpedo boat,” which Germany unleashed in a campaign of unrestricted submarine warfare.

Aube and his contemporaries were right in their intuition that technology could provide for the rise of a form of asymmetric warfare that would benefit the weaker navy, threatening the supremacy of the battle fleet and strangling vital lines of communications. The torpedo eventually would constitute such a threat, but the *Jeune École* erred in focusing on a delivery vehicle meant to make the battleship obsolete before the technology was available and proven. It was the German submarines of the Great War that carried the torpedoes that directly threatened Great Britain’s supremacy at sea, not the French torpedo boats of the 1880s. France’s famed student of strategy Hervé Coutau-Bégarie indeed mused that “the fault of Aube was perhaps to be right too early.”⁹¹

Another flaw was the strident militancy of the *Jeune École* disciples. They strenuously refused to listen to their opponents, neglecting to admit that technological advances would spur not only the rise of asymmetric warfare but the development of defensive measures against such means, just as during the iron-clad era the development of the explosive shell had been followed closely by that of armor plating. To promote their views, the disciples allied themselves to radical politicians, which deeply fractured the naval officer corps amid the cabinet instability that was a hallmark of the Third Republic, preventing the formulation and sustainment of a single, long-term shipbuilding plan. This may have been the greatest, if unintended, harm that the *Jeune École* caused, as the debate initiated in the 1870s contributed to the country’s poor state of readiness at sea up to the First World War.

This marked a very important departure from the tradition of political neutrality that had been observed throughout previous decades: “Ever since the great purges of the Revolution [of 1789], the navy had not taken part in national political life. The sole aim of the naval chiefs, regardless of their private political convictions, was to keep the navy intact, not to preserve or support a given political order.”⁹² This largely explains the strength of France’s navy under Napoleon III. From the Bourbon Restoration through the July Monarchy and the Second Republic to the Second Empire, political neutrality assured continued support from those in power, despite the social turmoil of the early nineteenth century. With political will and public support in hand, French naval leaders set about

creating a balanced and effective force. This continuity in purpose crested with the 1857 shipbuilding program, which laid the foundations for Napoleon III's fleet. Still derided by some historians today because it seemingly failed to make a viable contribution during the Franco-Prussian War, La Royale nonetheless served France well through the 1860s—as long as the emperor adhered to realistic objectives overseas and viable policies on the Continent. Even the lack of results at sea in 1870 cannot be blamed squarely on naval leaders. They had completed a modicum of operational planning for war with Prussia, but they could not have foreseen that their emperor's diplomatic rashness and the disastrous land campaign would deprive the fleet of any opportunity to execute those plans.

Study of this period remains relevant today for those involved in military transformation during a time of geopolitical and strategic uncertainty set against a background of spiraling and ostensibly unaffordable technological innovations. Naval policy under the Second Empire proved correct, but it failed to explain itself to politicians and the public alike, as no cogent theoretical and doctrinal framework supported it. This greatly facilitated the opening of a path for “technological determinists,” such as Richild Grivel and Aube, who laid out such a discourse, one that promoted future technological developments to undermine the position of proponents of the status quo. A large part of that vision would prove correct in the longer term, but the immediate adoption of such a strategy to shape contemporary naval policy failed France because it did not provide the means to support the country's current objectives. The situation was made only worse when the debate assumed political overtones, introducing a stridency that left the *Marine nationale* deeply divided. Shipbuilding programs repeatedly were altered as governments came and went, resulting at the turn of the century in an assembly of disparate “sample ships” in lieu of the balanced fleet achieved previously under Napoleon III.

The Second Empire and the Third Republic demonstrated in their very distinct ways that naval policy and strategy must remain closely aligned to deliver affordable means in support of a country's realistic objectives at home and abroad. This is an enduring lesson for today, when the future of modern navies remains cloaked in uncertainty and controversy.

NOTES

This article is an update of a paper submitted in support of my doctoral studies at the Royal Military College of Canada, in Kingston, Ontario. It has been greatly improved thanks to feedback from my professor at the time,

Dr. Andrew Iarocci (now assistant professor at Western University in London, Ontario), as well as three anonymous reviewers from the *Naval War College Review*. Any remaining shortcomings are mine alone.

1. Paul Kennedy, *The Rise and Fall of British Naval Mastery* (London: Penguin, 2017). The foreword (but for a few pages) is available at "Introduction to the 2017 Edition," *Google Books*, books.google.co.jp/. All subsequent references to this book are from Paul Kennedy, *The Rise and Fall of British Naval Mastery* (London: Penguin, 2001).
2. For a typical view, see Peter M. Swartz, "Rising Powers and Naval Power," in *The Chinese Navy: Expanding Capabilities, Evolving Roles*, ed. Phillip C. Saunders et al. (Washington, DC: National Defense Univ. Press, 2011), pp. 1–22.
3. Arne Røksund, *The Jeune École: The Strategy of the Weak* (Leiden, Neth.: Brill, 2007).
4. *Marine nationale* is the formal name of the French national navy. Informally it also is known as *La Royale*.
5. Jean Baptiste Marestier, *Mémoire sur les bateaux à vapeur des États-Unis d'Amérique* (Paris: Imprimerie Royale, 1824; repr. Whitefish, MT: Kessinger, 2010).
6. Étienne Taillemite, *Histoire ignorée de la marine française* (Paris: Perrin, 1988), p. 435; Henri Darrieus and Jean Quéguiner, *Histoire de la marine française*, vol. 3, 1815–1918 (Saint-Malo, Fr.: Éditions l'Ancre de Marine, 1997), p. 29.
7. Darrieus and Quéguiner, 1815–1918, p. 30; Philippe Masson, *Histoire de la marine*, vol. 2, *De la vapeur à l'atome* (Limoges, Fr.: Charles Lavauzelle, 1992), pp. 82–83.
8. Masson, *De la vapeur à l'atome*, p. 84; Theodore Ropp, *The Development of a Modern Navy: French Naval Policy 1871–1904* (Annapolis, MD: Naval Institute Press, 1987), p. 9.
9. Darrieus and Quéguiner, 1815–1918, pp. 19–20; Masson, *De la vapeur à l'atome*, p. 40.
10. Masson, *De la vapeur à l'atome*, pp. 40–41. For a classic treatment of the circumstances that led to the battle and the action itself, consult C. M. Woodhouse, *The Battle of Navarino* (London: Hodder & Stoughton, 1965).
11. Darrieus and Quéguiner, 1815–1918, pp. 33–34; Masson, *De la vapeur à l'atome*, pp. 47–48. The French navy assumed responsibility for the occupation of the city of Ancona from 1832 to 1839.
12. Masson, *De la vapeur à l'atome*, pp. 42–46; Benjamin Stora, *Histoire de l'Algérie coloniale (1830–1954)*, 2nd ed. (Paris: La Découverte, 2004), pp. 12–15.
13. Darrieus and Quéguiner, 1815–1918, pp. 40–41; Taillemite, *Histoire ignorée*, pp. 340–55.
14. Darrieus and Quéguiner, 1815–1918, pp. 34–37; Martin Motte, *Une éducation géostratégique: La pensée navale française de la Jeune École à 1914* (Paris: Economica, 2004), p. 80.
15. Darrieus and Quéguiner, 1815–1918, pp. 37–39; Masson, *De la vapeur à l'atome*, pp. 55–57; Norman Rich, *Great Power Diplomacy 1814–1914* (Columbus, OH: McGraw-Hill, 1991), pp. 105–109.
16. Hervé Coutau-Bégarie, "Réflexions sur l'école française de stratégie navale," *Institut de Stratégie Comparée*, www.institut-strategie.fr/; Michèle Battesti, *La marine de Napoléon III: Une politique navale* (Paris: Service Historique de la Marine, 1997), pp. 30–36.
17. Ropp, *The Development of a Modern Navy*, p. 6; Battesti, *La marine de Napoléon III*, pp. 28–30. On the economic failings of the monarchy in the late 1830s and early 1840s, see Robert Tombs, *France 1814–1914* (London: Routledge, 1996), pp. 363–65.
18. Ropp, *The Development of a Modern Navy*, p. 7; Taillemite, *Histoire ignorée*, p. 458.
19. Ropp, *The Development of a Modern Navy*, p. 7.
20. Taillemite, *Histoire ignorée*, pp. 458–59; Kennedy, *The Rise and Fall of British Naval Mastery*, pp. 172–73.
21. For an extensive discussion of *Napoléon's* technical specifications and performance at sea, see Battesti, *La marine de Napoléon III*, pp. 50–57.
22. Nephew and heir to Napoleon I, Charles-Louis-Napoleon Bonaparte had been elected by popular vote as president of the Second Republic in the wake of the 1848 revolution. Initiating a coup d'état in December 1851, he seized dictatorial powers and then ascended the throne as Napoleon III on December 2, 1852. He ruled until his defeat and capture by the Prussians at Sedan in September 1870. Ironically, he is sometimes referred to as the first elected president of France and its last dictator. On the fall of the Louis Philippe

- monarchy, the rise of the Second Republic, and the proclamation of the Second Empire, see Tombs, *France 1814–1914*, pp. 373–94.
23. For recent, in-depth, and objective treatments of Napoleon III and his time, see Éric Anseau, *Napoléon III: Un Saint-Simon à cheval* (Paris: Tallandier, 2013), and James F. McMillan, *Napoleon III*, 2nd ed. (London: Routledge, 2013).
 24. Tombs, *France 1814–1914*, pp. 399–402.
 25. Emmanuelle Guenot provides a fresh perspective by a French author in “Napoleon III and France’s Colonial Expansion: National Grandeur, Territorial Conquests and Colonial Embellishment, 1852–1870,” in *Crowns and Colonies: European Monarchies and Overseas Empires* (Manchester, UK: Manchester Univ. Press, 2016), pp. 211–26.
 26. Tombs, *France 1814–1914*, pp. 403–404; Battesti, *La marine de Napoléon III*, pp. 67–73; Trevor Royle, *Crimea: The Great Crimean War 1854–1856* (New York: St. Martin’s, 2000), pp. 15–33, 64–76.
 27. Royle, *Crimea*, pp. 91–102; Darrieus and Quéguiner, *1815–1918*, p. 51. Sinope was the first large-scale battle involving steam-propelled warships.
 28. Richard Brooks, *The Long Arm of Empire: Naval Brigades from the Crimea to the Boxer Rebellion* (London: Constable, 1999), pp. 2–3.
 29. Royle, *Crimea*, pp. 166–202; Battesti, *La marine de Napoléon III*, pp. 79–88, 102–23.
 30. Motte, *Une éducation géostratégique*, pp. 85–88; Battesti, *La marine de Napoléon III*, pp. 156–59.
 31. Taillemite, *Histoire ignorée*, pp. 467–68; Darrieus and Quéguiner, *1815–1918*, pp. 53–56; Battesti, *La marine de Napoléon III*, pp. 126–34.
 32. Kennedy, *The Rise and Fall of British Naval Mastery*, p. 178.
 33. Great Britain again followed France by designing ironclad frigates of the *Warrior* class, launched between 1859 and 1862. Darrieus and Quéguiner, *1815–1918*, pp. 56–57; Kennedy, *The Rise and Fall of British Naval Mastery*, pp. 179–80.
 34. Ropp, *The Development of a Modern Navy*, pp. 7–8.
 35. Motte, *Une éducation géostratégique*, pp. 86–87; Battesti, *La marine de Napoléon III*, pp. 163–75.
 36. Ropp, *The Development of a Modern Navy*, p. 8.
 37. *Ibid.*, pp. 9–10; Coutau-Bégarie, “Réflexions”; Battesti, *La marine de Napoléon III*, pp. 243–46, 786–90.
 38. Ropp, *The Development of a Modern Navy*, p. 22; Battesti, *La marine de Napoléon III*, pp. 1022–25.
 39. Ropp, *The Development of a Modern Navy*, pp. 23–24; Michael Howard, *The Franco-Prussian War*, 2nd ed. (New York: Routledge, 2001), pp. 74–76.
 40. Darrieus and Quéguiner, *1815–1918*, pp. 70–71; Battesti, *La marine de Napoléon III*, pp. 1009–21.
 41. Ropp, *The Development of a Modern Navy*, p. 23; Battesti, *La marine de Napoléon III*, pp. 1027–35.
 42. Darrieus and Quéguiner, *1815–1918*, pp. 70–71; Battesti, *La marine de Napoléon III*, pp. 1049–54, 1063–65.
 43. Darrieus and Quéguiner, *1815–1918*, pp. 71–74; Howard, *The Franco-Prussian War*, pp. 132–33, 236–37, 319–20.
 44. Howard, *The Franco-Prussian War*, pp. 437–49. For a more in-depth treatment of these turbulent months, see Alistair Horne, *The Fall of Paris: The Siege and the Commune 1870–71*, 2nd ed. (London: Penguin, 2007).
 45. The Thiers government was considered provisional, as a constitution for the Third Republic would not be agreed on until 1875. Thiers himself was not actually initially president but rather was originally designated *chef du pouvoir exécutif* (head of the executive power). Nevertheless, his role was very much presidential as he was both an elected figure and the head of state, often called on to confront the assembly while exercising the role of commander in chief of the armed forces. On his period in power, the rise of *revanchisme*, and the initial rebuilding of the French army, see Allan Mitchell, “Thiers, MacMahon, and the Conseil supérieur de la guerre,” *French Historical Studies* 6, no. 2 (Autumn 1969), pp. 232–52.

46. Quoted in Ropp, *The Development of a Modern Navy*, p. 31. The original quote in French can be found in Taillemite, *Histoire ignorée*, p. 478.
47. Ropp, *The Development of a Modern Navy*, p. 31; Motte, *Une éducation géostratégique*, pp. 102–104.
48. Taillemite, *Histoire ignorée*, pp. 477, 479; Motte, *Une éducation géostratégique*, pp. 107–13.
49. Ropp, *The Development of a Modern Navy*, p. 33; Masson, *De la vapeur à l'atome*, p. 136.
50. On Portal and Grivel, see Coutau-Bégarie, "Réflexions." Admittedly, such dearth of debate on naval strategy also prevailed in a Great Britain satisfied with the Nelsonian tradition. See Kennedy, *The Rise and Fall of British Naval Mastery*, p. 182, and Arthur J. Marder, *The Anatomy of British Sea Power: A History of British Naval Policy in the Pre-dreadnought Era, 1880–1905* (London: Frank Cass, 1964), p. 44.
51. French construction was a mix of continued innovation and obsolete technology. Work began in 1873 on the battleship *Redoutable*, the first to be built around a steel frame (lighter and more flexible than iron), while other projects still followed older drawings based on armor-plated wooden hulls. The British commenced work on *Iris* and *Mercury* in 1875 in response to the use of steel in France, continuing the tradition of following and then surpassing French developments. Taillemite, *Histoire ignorée*, p. 479; Ropp, *The Development of a Modern Navy*, pp. 41–42.
52. Taillemite, *Histoire ignorée*, p. 483. For a treatment of the Italian and Russian building programs, see Ropp, *The Development of a Modern Navy*, pp. 74–86, 86–91. On the German shipbuilding plans, see Robert K. Massie, *Dreadnought: Britain, Germany, and the Coming of the Great War* (New York: Random House, 1991), p. 161.
53. Coutau-Bégarie, "Réflexions"; Ropp, *The Development of a Modern Navy*, pp. 19–22; Røksund, *The Jeune École*, pp. 1–3.
54. Røksund, *The Jeune École*, p. 4.
55. The superiority of one fleet over the other would be based purely on numbers, as the level of technology would be the same for both opponents, while steam propulsion would eliminate the element of chance that had affected so many engagements during the age of sail, influenced as they were by the vicissitude of the winds. Aubé's early thoughts appeared in the following articles: "Les réformes de notre marine militaire," *Revue des deux mondes* (April 1871); "De la guerre maritime," *Revue maritime et coloniale* (April 1873); and "L'avenir de la marine française: Le décuirassement, la guerre de course, la réduction du personnel," *Revue des deux mondes* (July 1874). See Coutau-Bégarie, "Réflexions"; Røksund, *The Jeune École*, pp. 5–6; and Motte, *Une éducation géostratégique*, pp. 167–75.
56. Ropp, *The Development of a Modern Navy*, pp. 157–58; Røksund, *The Jeune École*, pp. 8–12.
57. Two Russian torpedo boats each launched a British-built Whitehead torpedo against the Turkish steamer *Intibah* on the evening of January 25, 1877. Both torpedoes found their mark, sinking the vessel. Ropp, *The Development of a Modern Navy*, p. 116.
58. Darrieus and Quéguiner, 1815–1918, pp. 82–89; Masson, *De la vapeur à l'atome*, pp. 141–48.
59. Taillemite, *Histoire ignorée*, pp. 499–505; Ropp, *The Development of a Modern Navy*, pp. 159–70; Røksund, *The Jeune École*, pp. xii–xiii.
60. Kennedy, *The Rise and Fall of British Naval Mastery*, pp. 177–79; Ropp, *The Development of a Modern Navy*, pp. 205–10.
61. On this period, see Tombs, *France 1814–1914*, pp. 442–47.
62. Ropp, *The Development of a Modern Navy*, pp. 119–22; Taillemite, *Histoire ignorée*, pp. 479–80.
63. Lamy actually declared the battleship a symbol of Bonapartism unsuitable for a republic, and the smaller crews of the torpedo boats more representative of the democratic ideal. Ropp, *The Development of a Modern Navy*, p. 122. Motte refers to the rise of a new "socio-technical" paradigm that contributed to the strident stance that proponents of the *Jeune École* adopted during that period in *Une éducation géostratégique*, pp. 705–707.
64. Ropp, *The Development of a Modern Navy*, pp. 123–31.

65. Ibid., p. 172. The *bateaux-canon*s were steam vessels conceived to carry a single large gun. They would leverage speed, maneuverability, and numbers to overwhelm larger opponents and conduct shore bombardment. They are sometimes referred to as *unarmored gunboats* in English-language literature. “Torpedo boats for use against other torpedo boats,” which also were referred to as *defensive torpedo boats*, sported several light machine guns, a spar torpedo, and a ram. With the mission of protecting the ships of the line against smaller torpedo boats, they eventually would come to be called *torpedo boat destroyers*, an appellation shortened to *destroyers* during the First World War.
66. Røksund, *The Jeune École*, pp. 59–81; Ropp, *The Development of a Modern Navy*, pp. 176–80.
67. Røksund, *The Jeune École*, pp. 59–81; Ropp, *The Development of a Modern Navy*, pp. 176–80.
68. The controversy on the lessons to be drawn from the 1886 maneuvers continues to this day, with scholars drawing vastly different conclusions, as evidenced by comparing Ropp, who condemns the torpedo boat, with Røksund, who views the results of these experiments in a much more positive light. Ropp, *The Development of a Modern Navy*, pp. 175–78; Røksund, *The Jeune École*, pp. 63–73.
69. Taillemite, *Histoire ignorée*, pp. 484–85; Røksund, *The Jeune École*, pp. 86–96.
70. Alfred Thayer Mahan, *The Influence of Sea Power upon History, 1660–1783* (Boston: Little, Brown, 1890; repr. New York: Dover, 1987). On his influence at the time, see Kennedy, *The Rise and Fall of British Naval Mastery*, pp. 182–83. For a powerful analysis of his theories, still relevant today, see Philip A. Crowl, “Alfred Thayer Mahan: The Naval Historian,” in *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, ed. Peter Paret, 2nd ed. (Princeton, NJ: Princeton Univ. Press, 1986), pp. 444–77.
71. Taillemite, *Histoire ignorée*, p. 482; Masson, *De la vapeur à l’atome*, pp. 166–68.
72. Ropp, *The Development of a Modern Navy*, pp. 197–98; Røksund, *The Jeune École*, p. 110.
73. Ropp, *The Development of a Modern Navy*, p. 283.
74. Sources of tension between France and Great Britain included quarrels over the Congo in 1884–85, western Africa throughout the 1880s and 1890s, and Siam (Thailand) in 1893. The biggest cause of friction, however, remained control of the Nile valley, a source of frustration for France ever since British troops had arrived in Egypt in 1882. Paul M. Kennedy, *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000* (New York: Random House, 1987), pp. 219–20.
75. The Fashoda episode is discussed extensively in Ropp, *The Development of a Modern Navy*, pp. 306–23; Røksund, *The Jeune École*, pp. 143–56; Motte, *Une éducation géostratégique*, pp. 384–410.
76. Quoted in Kennedy, *The Rise and Fall of British Naval Mastery*, p. 206; Massie, *Dreadnought*, p. 256.
77. Christian Roche, *L’Afrique noire et la France au XIX^e siècle: Conquêtes et résistances* (Paris: Karthala, 2011), p. 91; James J. Cooke, *New French Imperialism, 1880–1910: The Third Republic and Colonial Expansion* (Newton Abbott, U.K.: David & Charles, 1973), pp. 95–97.
78. Darrieus and Quéguiner, *1815–1918*, pp. 117–20; Røksund, *The Jeune École*, pp. 161–75; Ropp, *The Development of a Modern Navy*, pp. 326–36.
79. For a recent French perspective of the Lanessan ministry, see Motte, *Une éducation géostratégique*, pp. 461–69. For a contemporary British view of the “flying squadron” concept, see Archibald S. Hurd, “The New Flying Squadrons of France,” *Fortnightly Review* 78 (1902), pp. 321–29. My appreciation to an anonymous referee of the *Naval War College Review* who brought this important source to my attention.
80. Røksund, *The Jeune École*, p. 166.
81. On Pelletan’s tenure from 1902 to 1905, see Røksund, *The Jeune École*, pp. 213–21, and Motte, *Une éducation géostratégique*, pp. 479–91.
82. Taillemite, *Histoire ignorée*, pp. 565–67; Masson, *De la vapeur à l’atome*, pp. 218–26.

83. Robert Dumas, "Les cuirassés 'Dreadnought' en France de 1907 à 1921," *Nouvelle revue maritime*, no. 398 (January–February 1986), pp. 110–23. On the larger so-called dreadnought revolution, see Massie, *Dreadnought*, pp. 468–97, and Ropp, *The Development of a Modern Navy*, pp. 304–305.
84. On the French naval experience during the Great War, see Darrieus and Quéguiner, *1815–1918*, pp. 181–201, and Masson, *De la vapeur à l'atome*, pp. 235–80.
85. Massie, *Dreadnought*, pp. 342–50; Henry Kissinger, *Diplomacy* (New York: Simon & Schuster, 1994), pp. 188–90.
86. Marder, *The Anatomy of British Sea Power*, pp. 530–32; David C. Evans and Mark R. Peattie, *Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy 1887–1941* (Annapolis, MD: Naval Institute Press, 1997), pp. 127–29; Jan S. Breemer, "The Burden of Trafalgar: Decisive Battle and Naval Strategic Expectations on the Eve of World War I," *Journal of Strategic Studies* 17, no. 1 (March 1994), pp. 33–62.
87. Kissinger, *Diplomacy*, pp. 190–91, 196–97; Massie, *Dreadnought*, pp. 351–68, 719–43.
88. Kissinger, *Diplomacy*, pp. 197, 212–13; Massie, *Dreadnought*, pp. 825–27.
89. Taillemite, *Histoire ignorée*, pp. 546–47; Motte, *Une éducation géostratégique*, pp. 622–23.
90. Ropp, *The Development of a Modern Navy*, p. 167.
91. Coutau-Bégarie, quoted in Røksund, *The Jeune École*, p. 229.
92. Ropp, *The Development of a Modern Navy*, p. 48.