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Admiral S.O. Makarov and Naval Theory

David R. Jones

IN THE EARLY 1990s Russian admirals have become almost commonplace in the halls of the U.S. Naval War College. Few recall, however, that they are merely following in the footsteps of Rear Admiral Stepan Osipovich Makarov (1848–1904) of the Imperial Russian Navy, who had been Admiral Stephen B. Luce’s guest in the autumn of 1896. Indeed, the Russian was a warm admirer of Luce and believed that the infant Naval War College (founded in 1884) was a model worthy of emulation in his homeland. For in Makarov’s view, one could expect “great exploits” only from “that fleet in which the necessary scientific knowledge and skill in the art of conducting war are to be found combined with practical training from early years in all branches of the naval profession.”¹

Today Makarov is an all but forgotten figure in the hallowed halls of Luce, Mahan, Sims, and a pleiad of other eminent sailors. Those who do recognize his name usually remember him as a pioneer of torpedo warfare during the Russo-Turkish War of 1877–1878, or as the unfortunate Russian commander who perished when his flagship struck a Japanese mine off Port Arthur in 1904. In part this is perhaps because the focus of his most widely read book was tactics, the aspect of the military arts and sciences most subject to obsolescence. Even so, matters have been somewhat different in his homeland, and Soviet sailors continued to honor his memory. Makarov’s name, wrote Admiral Yu. A. Panteleev in 1951, “is inseparably linked with the history of the development of the Russian fleet,” and he was its “most talented representative” in the late 1800s and early 1900s.² Others have agreed, including the late Sergei G. Gorshkov, who referred to Makarov as “a recognized authority in the sphere of naval tactics.”³ Cynics, of course, may suspect that these views exaggerate his reputation. Nonetheless, the fact remains that Makarov was one of the most talented and eminent sailors of his day and, in the eyes of many of his

Dr. Jones is a historian of Russian and military history and was educated at Dalhousie, Duke, and Oxford universities. In 1991–1992 he was the senior Secretary of the Navy Research Fellow at the Naval War College; presently he is the director of the Russian Research Center of Nova Scotia.

The views expressed are those of the writer and in no way reflect those of the Naval War College, the Department of the Navy, or the U.S. government.

contemporaries, a naval theorist who ranked with Philip H. Colomb and Alfred T. Mahan.

Sailor and Admiral

Throughout his career, as a Soviet historian recently pointed out, Makarov consistently sought to combine the realities of service with his own theoretical studies, with the result that his "practical experience gave him rich material for theoretical generalizations and conclusions."⁴ Although born into a naval family in Nikolaev on the Black Sea, Makarov spent most of his youth in the Siberian port of Nikolaevsk-na-Amure, and there entered naval school in 1858. Later he participated in the deployment of Admiral A.A. Popov's Pacific Squadron to San Francisco in 1863–1864. Having been transferred to the Baltic Fleet in 1866, the young Makarov finished his training and quickly won modest fame in the early 1870s for contributions to improving the survivability of warships.

He first came to the attention of the more general public for his use of torpedo launches (i.e., cutters) against the Turks in the Black Sea during 1877–1878. Returning to the Baltic Fleet in the early 1880s, he made his first voyage of circumnavigation as commander of the corvette *Vitiaz* (August 1886–May 1889). Then on 1 January 1890, at the age of 41, he was promoted to the rank of rear admiral and until 1891 was in the post of the Baltic Fleet's junior commander, or flag officer. From 1891 to 1894 he was Chief Inspector of Artillery for the Imperial Navy and then became commander of the Baltic Fleet's Mediterranean Squadron during its deployment to the Far East (1894–1896). On his return, Makarov received the rank of vice admiral and assumed the position of senior flag officer in command of the Baltic Fleet's 1st Fleet Division. He held this post until becoming Chief Commander of the Kronstadt Naval Base in December 1899, from which he departed only to take over his fatal command of the Pacific Squadron in February 1904.⁵

Clearly, then, Makarov was no "armchair admiral." Yet despite his unbroken service with the fleet, as well as a warm family life, he found time to make widely recognized contributions to a number of technical and scientific disciplines. On the practical side, even Western sources still credit him with inventing the capped armor-piercing shell and introducing smokeless powder into the Russian navy.⁶ At the same time, he presented a stream of papers before a number of scientific bodies and became a full member of the Imperial Academy of Sciences in 1893. Other scientific bodies that counted him as a member were the Russian Geographical Society, the Russian Technical Society, the Russian Association of Physicists and Chemists, and the Main Physical Observatory. Otherwise, he was the close friend of scholars such as ship designer A.I. Krylov and scientist

D.I. Mendeleev, and he published in the fields of oceanography, geography, and naval technology. His sustained interest in shipbuilding culminated during the period 1898 to 1901 in the design, construction, and testing of the powerful icebreaker *Ermak*.⁷ And most significantly, as Gorshkov's comment indicates, Makarov was also known for his contributions to naval tactics, which he termed "the science of naval war."⁸

Naval historians will have noted that Makarov's career spanned a period when the rapid development of naval technologies had created considerable uncertainty about the future forms of naval warfare. In 1890 the resulting debates were invigorated by the appearance of two new theoretical works: Mahan's *The Influence of Seapower upon History, 1660-1783* in the United States, and Colomb's *Naval Warfare: Its Ruling Principles and Practice Historically Treated* as a series of articles in the *Illustrated Naval and Military Magazine*.⁹ Each in its own way advanced a concept of "command of the sea" to be gained by a decisive encounter between the contending battle fleets as the primary, guiding strategic principle of naval warfare. In an age of increasing "navalism," these and subsequent works of Mahan and Colomb were translated and published in numerous foreign editions that won their authors fame and acclaim from naval men throughout the world. These works, their supporters maintained, demonstrated that war at sea, like that on land, was governed by scientifically based principles that had the same universality as the teachings of Karl von Clausewitz and, more particularly, of Antoine Henri de Jomini.¹⁰ Since that time, the works of Mahan and Colomb, along with those of the next generations of Western naval theorists (e.g., Sir Julian Corbett and Sir Herbert Richmond) have held pride of place in the study of this period's naval theories.¹¹

Tactical *Theorie* and *Praxis*

It is always tempting to speculate on the possible results of a meeting between two prominent men of any historical period—in fact, Mahan and Makarov only narrowly missed each other at Newport. The resulting discourse, had they met, might well have affected the later theories of both men, although, each having his own stubbornly held core of convictions, a confrontation might have produced more smoke than light. But unfortunately for naval historians, Mahan left the War College in 1895 and so missed meeting his Russian colleague at precisely the moment when the latter was preoccupied with translating the *Praxis*, or practice, of the Sino-Japanese War into a *Theorie* of naval tactics. At that time, as Mahan himself had admitted in 1890, "steam navies" had "as yet made no history which can be quoted as decisive" in the teaching of naval warfare, tactics included, so that theories about the "future are almost wholly presumptive."¹²

Five years later, the situation was no better: despite the upsurge of writings on naval policy and strategy provoked by Mahan and Colomb, sailors still lacked a basic, generally accepted guide to the nuts and bolts of battle tactics. In Russia, for example, this subject was more or less entirely neglected in the education of future naval officers, and the most recent formal Russian text available on the topic was still Admiral G.I. Butakov's *Novye osnovaniia parokhodnoi taktiki* (The New Fundamentals of Steam Tactics), published in St. Petersburg in 1863.¹³ Some thirty years later—in February 1893—Makarov drew the Main Naval Staff's attention to this deficiency. Writing in his role of Chief Inspector of Naval Artillery to the director of the Main Naval Staff's training section, Captain 1st Rank (i.e., naval captain) N.N. Lomen, Makarov noted recent complaints about the part of the training course on "Tactical Elements of Naval Artillery" that dealt with the manoeuver of ships during naval combat. Having suggested this be updated and expanded, the admiral went on to discuss "Naval Tactics as such." On this topic he expressed his conviction "that for study these tactics must be divided up into three or more parts that embrace such various types of weapons as artillery, torpedoes, the ram, torpedo-launches, and so on." That is, the work recommended for the gunnery course should be paralleled by similar efforts in other fields so as to provide a single, comprehensive set of tactical conclusions.¹⁴

The moment, therefore, was more than propitious for the appearance of a general work on tactics, for both the Russian and foreign fleets.¹⁵ Makarov himself had first shown interest in dealing with this topic in his own writings as early as 1885–1886.¹⁶ Even so, he gave the problem his full attention only when events underlined the need for such a theoretical work—with the deployment of Makarov's Baltic Fleet Mediterranean Squadron to the Far East in 1894, and the subsequent international crisis provoked by Japan's stunning victories in the Sino-Japanese War. On arriving in the war zone, Makarov's ships joined E.I. Alekseev's Pacific Squadron under the overall command of Vice Admiral S.P. Tyrtov. With action an imminent possibility, Tyrtov found that his combined squadrons lacked any standard tactical regulations. He immediately requested that his junior colleague, Makarov, compile a set of provisional instructions to fill the gap. These Tyrtov issued as an order, under his name, on 25 April 1895.¹⁷ In 1896 this crisis subsided and Makarov himself returned via North America to St. Petersburg. By that time he had firmly resolved to provide Russia's fleets with a modern tactical handbook that would apply the latest *Praxis* from the Far East with contemporary naval *theorie*. As a result, on the homeward trip (which included his visit to Newport), he spent what time he could snatch from other duties in converting his earlier instructions into a series of full-scale lectures.¹⁸

These he delivered at the end of 1896 to the Kronstadt Officers' Assembly, some six years after Colomb and Mahan had established their own reputations

as theoreticians.¹⁹ The lectures, in turn, then became the basis for a series of four articles published from January to April 1897 in the Russian Naval Ministry's official journal, *Morskoi sbornik*. Entitled collectively "A Discussion of Questions in Naval Tactics," these appear to have been issued as off-prints in Russian and were rapidly made available in translation, in book form, to naval men around the world.²⁰ According to one Soviet authority, Makarov's *Discussion* was rapidly translated into English, Italian, Spanish, Japanese, and Turkish.²¹ It became standard reading in such distant navies as that of Argentina and was available to officers of the United States Navy (in a translation by Lieutenant John B. Bernadou, USN) as early as 1898.²² Subsequently, at least one American newspaper explicitly recognized Makarov's contribution to the U.S. Navy's

" . . . I would advise that we study such esteemed works as those of Mahan and Colomb, but that we not accept that their conclusions, which are drawn from examples of the age of sail, are unconditionally true in our century of machines and electricity."

successes in the Spanish-American War.²³ Indeed, the immediate popularity of Makarov's work abroad demonstrates the extent to which other navies also felt the need for a manual of tactical instructions. (Since then, however, the only full-length English-language edition known to this writer is the reprint of Bernadou's translation edited by Robert B. Bathurst as a 1990 volume in the U.S. Naval Institute's series "Classics of Sea Power.")²⁴

Somewhat surprisingly, in view of the book's reception abroad, the response at home was mixed. True, in retrospect Makarov is regarded in his native Russia as an "advanced" theorist whose book some four decades later Soviet authorities still considered worthy of reprinting in the midst of war with Nazi Germany.²⁵ Yet in 1896–1897, the lectures and four articles met with a stormy, if enthusiastic, welcome from their author's colleagues in the Imperial Fleet. This lively controversy first surfaced in debates that erupted during two public "question and answer" sessions held in Kronstadt on 21 December 1896 and 13 January 1897.²⁶ Prominent among the initial critics were the young Mahanian theorist N.L. Klado and the ill-fated future commander of the 1904–1905 Second Pacific Squadron, Z.P. Rozhdestvenskii.²⁷ To some extent, Makarov used his four early 1897 articles to respond to these challenges. Nonetheless, continued criticism of his position finally forced him to pen a lengthy rejoinder in mid-1897. This appeared as a fifth and brief concluding installment in the August edition of *Morskoi sbornik*.²⁸

But despite this articulate defense of his position and the lack of adequate alternative tactical manuals, the authorities withheld official approval for Makarov's text, and it remained unpublished as a book in Russia until 1904.

According to Vladimir Semenov, one of Makarov's most ardent disciples, "among us, in Russia, this book . . . was almost boycotted." That this official view was "unambiguous," Semenov argued, was clear from the fact that during his six years in naval school and two in the Naval Academy (i.e., naval war college), "I did not hear even a mention of [the book] in a single lecture. It was not even included in the list of those works which it was obligatory to include (from public funds) in shipboard libraries."²⁹

The mixed reactions and official coolness that greeted Makarov's tactical *Discussion* seem explicable largely in terms of the recent conversion of many Russian seamen to the ideas of Colomb and Mahan. True, the latter were seldom mentioned by name during the initial public debate roused by the Russian's lectures. Nonetheless, the points raised by Makarov's opponents and the nature of his own replies indicate that by 1896 many of his compatriots were already influenced by the newly translated prophets of navalism and that the latter's theoretical conceptions underlay much of the debate and criticism roused by Makarov's exposition.

As matters turned out, the Russian admiral had returned to Kronstadt to launch his own theoretical work into an intellectual world just then assimilating the ideas of his well known Western colleagues. The first edition of Colomb's *Naval Warfare* had appeared in Russian translation in 1894 and had been followed in 1895 by N.P. Azbelev's translation—apparently the first foreign-language book publication—of Mahan's *The Influence of Sea Power upon History, 1660–1783*. The popularity achieved by the latter is indicated by the Naval Ministry's official publication of a second edition in 1896, followed in 1897 by a Russian edition of Mahan's *The Influence of Sea Power upon the French Revolution and Empire, 1793–1812*. In fact, there were rumors that the initial translation had been directly commissioned, if not actually carried out, by no less a personage than Grand Duke Aleksei Aleksandrovich, then the General-Admiral and Commander in Chief of the Imperial Fleet.³⁰

More generally, it is small wonder that Mahan received a warm welcome in a milieu in which many ambitious officers, men like Rozhdestvenskii and Klado, sought wider career horizons in an enlarged fleet. Other motives, including sincere patriotic and intellectual conviction, were also undoubtedly present. Nonetheless, a commitment to imperial expansion based on a Mahanian doctrine of sea power obviously seemed to offer many Russian sailors the chance finally to take their rightful place alongside the soldiers as equals in defense of the interests of the Fatherland. Not surprisingly, they were sensitive to any challenge to the newly established orthodoxy. They therefore immediately spotted the extent to which Makarov's inclusive view of "naval tactics as the science of naval war" implicitly undercut many of the accepted verities of the day, essentially those of Mahan and Colomb. Among the particular points in question were the

validity of being guided by allegedly unchanging "principles of war," be they tactical or strategic; the essential utility of studying naval history (e.g., the sail era) for methods of combat suitable to armored ships in the steam era; and the universality and practicality of the concept of "command of the sea" through "decisive" naval battle, as proclaimed by the new prophets of navalism.³¹

Makarov had touched upon these topics only briefly, and often indirectly, in his original lectures and first four articles. Nonetheless, his concept of tactics and of their role in developing a modern navy struck at the heart of the methodology that underlay the doctrines of Colomb and Mahan. The Russian admiral had gone beyond merely rejecting the fundamental place of immutable principles (apart from those based on common sense) as revealed through history. He had advanced the practical proposition that since the purpose of tactics (the science of naval warfare) is to win battles, one should begin "by establishing the general necessary tactical conceptions" through an investigation of "*the elements constituting the fighting strength of ships and the means of employing them most favorably in war under different circumstances,*" and not through the study of experience in the distant past.³²

This does not mean that Makarov ignored the fact that in the process of developing tactical conceptions, the "study of history broadens the horizon of perception and determines our relations to circumstances."³³ Rather than be guided by past practice, however, he argued that the modern tactician should first examine the technologies and weapons at hand, then devise the best means of employing them. On that basis, one could then acquire the vessels (or in modern jargon, platforms) that would best utilize these systems to achieve the goals of the naval strategy, which itself accorded with a nation's policy objectives (or what he called "imperial policy").³⁴ Makarov "hoped that the regularly developed science of naval battle (tactics) may aid the fleet to enter upon the path of rational development." In this way one could solve, on the basis of the tactical system adopted, first the "problems relating to special branches, and so advance up to the consideration of the types of ships."³⁵ And given Makarov's high assessment of torpedoes, mines, and other developing technologies, navalists not unnaturally suspected that he would be less than enthusiastic about a building program centered on the expensive capital ships necessary for seizing and maintaining a Mahanian "command of the sea."

Since the admiral's exposition of his case in the first four articles is readily available to Western readers, his initial arguments need not be outlined in greater detail here.³⁶ By mid-1897, however, Makarov obviously felt the need for a more general reply to his critics, one that dealt directly with the above-mentioned issues. This, as noted above, is the origin of his fifth article; but while that work is still available to Russian readers, it was, unfortunately, omitted from the Western translations known to this writer.³⁷ For this reason it is published here, apparently for the first time in English.

In it, Makarov summarized the theoretical positions that underlay his original articles and clarified his views on certain matters; he also contrasted his opinions on strategy and his doubts about "command of the sea" with the concepts of Mahan and Colomb. Accordingly, the fifth article is in some ways the most concise statement of his own theory of naval war and the most interesting of the series. Its publication in its entirety is a preliminary step towards a planned, fuller study by this author of Admiral Makarov's contributions to the theory and practice of seamanship and naval warfare. Notes are provided to clarify references to the first four articles and to the relevant and often opposing opinions of Makarov's better-known British and American counterparts.³⁸

A Discussion of Questions in Naval Tactics

by S.O. Makarov

Sufficient time has passed since my articles on *Naval Tactics* appeared in the press to permit me to assess the various opinions expressed on the different issues in question. This gives me the occasion to return once again to this subject in order to make some clarifications.

The most significant comment that I have heard concerns my view that the main business in war is a matter not of principles, but of having a sharp eye [*glazomer*, otherwise *coup d'oeil*] that helps one assess circumstances, as well as that good sense which prompts rational choices when making decisions. I am also asserting that decisions on questions of naval tactics are to be found not in the teachings of history, but rather in a study of the qualities of the weapons involved.³⁹

I also recommend caution when we wish to rely on the principle of mutual support.⁴⁰ At first sight, how can one not be inclined favorably to the principle of mutual support which directs all, from the smallest to the largest, to support one another? In land warfare, this principle appears to be completely correct in everything, and one that should serve as a guide to a general [*polkovodets*] when he is making his deployments or carrying out any shift of troops. Napoleon advised that each general should ask himself several times daily how he would react if the enemy suddenly appeared on his right flank, how he would respond when he appeared on the left, and so on. All this advice aims at assuring that the principle of mutual support will be observed in the distribution of forces. Not only the general, but any commander [*nachal'nik*] must be guided by it. The military aphorism, "he who is perishing, his comrade saves," is also an expression of the principle of mutual support, but at the level of each individual soldier. Thus in its

application to land warfare, this principle is true for all, beginning with the general and ending with the soldier.

One must also consider that the principle of mutual support demands that when one launches simultaneous attacks on one or several enemy points, the attack everywhere will be conducted by detachments. In this last regard, the principle of mutual support is as widely applied at sea as on land. But in other respects this principle does not find as wide a field [of applicability] among us [sailors], since in the open sea there are no points of high ground to be held by ourselves or the enemy, and no process of deploying troops during which one must envisage the need for support for this or that unit. While it is reasonable to assume that mutual support is always necessary in all military affairs, I see great danger in giving any such general rule the form of a prescription. For if we do, faint-hearted people may use it as a justification for their inaction and advance the excuse that they could not rely on sufficient mutual support. In addition, some may interpret mutual support in the sense of one ship rendering aid to another. In times of battle, such help may be of no essential advantage and, with regard to one's own vessels, mutual support in combat should amount to a simultaneous attack on the enemy's [vessels].⁴¹

The conclusion to be drawn from all of this is not that we are denying the great importance accorded the principle of mutual support. Rather, it follows that sailors should employ it with circumspection, and make a clear decision as to whether or not, for us, mutual support does indeed consist mainly of making a simultaneous attack on the enemy with the aim of destroying him or of forcing his withdrawal.

For the present, I would enumerate four basic principles of naval tactics. These are, namely,

- attack with large forces part of the enemy fleet;
- attack the enemy's weak point;
- oppose the enemy with one's own strongest forces; and
- mutual support.

It is unnecessary to dispute these principles, for they are obviously true. It is also unnecessary to dispute the fact that the letter A is first in the Russian alphabet. But if I could prove that all the wisdom of science consisted in knowing the alphabetic order of the letters, then students would be given an incorrect representation of science. If I were also to spend all my time demonstrating that all military wisdom is composed of the knowledge of the four principles listed above, which in essence express one and the same rule, then in this too I would be giving an incorrect picture of [military] science.

I would suggest that if someone wishes to prove the importance of principles to everybody, he should write a whole book that reexamines all battles with the purpose of demonstrating that in all cases when one adhered to the four above-listed principles, one emerged as victor and, on the contrary, when one did

not adhere to them, then one could not win. This would be a very one-sided book. It might do well as a separate scholarly treatise, but it would make a poor textbook. For a text should equally provide discussion of the other elements involved in achieving success. Among these are courage, a knowledge of naval affairs, the ability to direct vessels and gunnery, the *coup d'oeil* of a chief, and so on. For these reasons, there can be no particular advantage to be gained by exaggerating the significance of principles.⁴²

Having discussed tactical principles, I cannot ignore strategic principles. In this regard the works of Colomb and Mahan represent great contributions to naval literature. Both these works appeared simultaneously and, on the basis of data drawn from history, demonstrate the same proposition—that the main task of a fleet must be to destroy the enemy fleet with the aim of becoming master of [ouladet'] the sea. Both the above-named authors demonstrate by historical examples that every time one ignores this rule, one either suffers losses or cannot achieve the desired results, and that this basic principle cannot be transgressed with impunity.⁴³ In their opinion, its violation inevitably invites punishment. Everyone has accepted as proven the opinions of these writers, and I have as yet to see a counterargument in the published literature. Thanks to the works of these two men, therefore, a basic principle has been introduced into naval strategy which should eliminate unpredictability and give a proper stability to naval operations.

But then the Japanese-Chinese War broke out, and the Japanese admiral Ito had to decide on the plan for his operations. To be sure, he knew the principles laid down by Mahan and Colomb, and he understood full well that it would be a rational move to begin by destroying the Chinese fleet. But part of that force was to be found in two northern ports, while part remained in the south. Thanks to insufficient forces on his part and the distances involved, the Japanese admiral could not blockade all the [Chinese] ports. If he had blockaded even one of the northern ports, this would have left unprotected the operational [sea] line [of communications] over which provisions and reinforcements and military materiel were carried to the army. The Chinese, taking advantage of the operational line's vulnerability, then could have used other, unblockaded ports in South China as bases from which to dispatch weak detachments to inflict great harm on the transports. Meanwhile, a blockade of even the main ports of [Port] Arthur and Wei-ha-Wei might well lead to heavy losses, since nothing is easier than to attack a blockading fleet at night with torpedo boats. Thus the torpedo boats of the one being blockaded prevent the imposition of a close blockade and, if the blockade is not maintained intensively, the blockaded fleet may break out unnoticed and inflict damage on the [blockader's] rear.

Whether it was these considerations or others that Ito had in mind, I do not know. But I do know that he decided to ignore the principles of Mahan and Colomb. Instead, he set himself the task of supporting the army of Field-Marshal Yamagato, and therefore in his movement from Korea to China, he sailed along the coast. In this manner Ito kept it [i.e., the army] supplied by sea with all necessities at its place of deployment, and he made his deliveries continuously at landing points which had been selected in accord with the movements of the army. When a Chinese squadron left its port, Ito utterly defeated it. But this done, he did not attempt to entice its remaining undamaged vessels from their port. Instead, he continued to act as earlier, as long as Port Arthur had not been captured from the land. With the fall of Port Arthur, Ito then might have concentrated all his forces against Wei-ha-Wei, which sheltered the Chinese fleet, in order to destroy it. But he preferred to adopt another plan by which the fleet convoyed an amphibious force there and supported its landing. Then, when the troops put ashore had established a land siege of Wei-ha-Wei, Ito opened a bombardment from the sea and destroyed part of the vessels by a torpedo attack to prevent the squadron from departing the fortress before its fall. It seems to me that in the given circumstances (e.g., considering the poor condition of the Chinese fleet, the strategic considerations imposed by the overall war plan, etc.), that Admiral Ito took the correct course, that his calculations were justified, and that the remarkable success of the operations confirmed this. It is thus impossible to criticize him [for his departure from principle]. "One does not judge a victor"—this expression is absolutely true. No outsider can possibly weigh all the circumstances, and therefore he cannot judge correctly. If success is the result, then this signifies that the overall totality of circumstances have proven to be in accord with the calculations as made earlier.⁴⁴

I personally am not a proponent of the servile worship of principles. In my opinion, Mahan and Colomb merely demonstrated that with sail fleets, one first sets out to master the sea, and that in the age of sail the sea was found to be in the complete power of him who acquired it [i.e., such mastery]. To what extent this accords with present material means—this is the question. Earlier, ships could remain for a half year at sea without renewing their reserves, and could operate at great distances from their main bases. Contemporary vessels, however, are forced frequently to renew their supplies of coal. Therefore, the question of [coaling] stations and secondary bases now plays a greater role than before; a breakout to conduct operations in the [enemy's] rear is easier than before; and a belligerent squadron now can put to sea and, being stronger than the enemy, force his main forces to remain shut up in his ports. In a certain respect, this squadron will command the sea. But if the enemy has support points in this sea, then one's position (as was indicated in Section 10)⁴⁵ will become complicated; and if—apart

from that—mastery of the sea is to be exercised far from one's base, then communications with it [i. e., the base] cannot be guaranteed. On the basis of what has been said above, I would advise that we study such esteemed works as those of Mahan and Colomb, but that we not accept that their conclusions, which are drawn from examples from the age of sail, are unconditionally true in our century of machines and electricity.

Apart from the main principles there are still the secondary ones, which we call the rules of tactics. In my opinion, we need to search for these rules not only in history, but also in the detailed study of the capabilities of our weapons; that is, of modern warships. The reason why I am proposing such a highly unpopular idea is that the material aspect of the fleet has changed completely. Tactics depend on weapons, but weapons have changed so utterly that history can provide almost no lessons on tactics whatsoever. But meanwhile, the lovers of the grandiose phrase constantly refer to "firm historical foundations," and they so abuse this phrase that many have begun to actively search for tactical rules in history. But we must question just how permissible this really is.

Let us suppose that we wish to decide the tactical question as to whether one should prefer fair or stormy weather for a naval battle. We turn to history. Nelson, whose crews comprised storm-hardened veterans who had spent long periods at sea, nonetheless preferred fair weather for battle. This was because the guns of his day did not even have sights and were aimed by moving the body of weapon, while the properties of the charge used in firing were so unpredictable that there were great variations in the rate of fire. Therefore, firing from a tossing deck was problematic to the highest degree. Apart from all this, in a fresh wind it was difficult for the attacker to hold his position close to his enemy, and he consequently was forced to fire at long range. For these reasons, Nelson preferred to fight in fair weather, since he considered decisive battle was impossible in stormy weather, while an indecisive one did not even begin to count.

Nelson's views are supported by a host of historical examples. Consequently, if one bases oneself on historical examples, than one must today consider battle in stormy weather to be unsuitable. Whereas conditions on contemporary ships are not much different than before, they still give rise to a different tactical regimen. Although artillery is much improved, today it is still fixed to a tossing platform and it is difficult to score a hit. But now with engines, one can hold one's position at the desired range. Yet in the tossing waves, an ironclad exposes its unarmored hull. In this way, the ironclad loses part of its advantage. True, torpedoes are less accurate in a choppy sea than when there are no waves. Even so, it is still possible to count on scoring hits with torpedoes at a close range. From this it follows that battle in stormy weather may be very decisive, and that small vessels with a strong torpedo armament should, in stormy weather, seek battle with large armoured

ships. If the ironclad is tossing, then it has almost no chance whatsoever of scoring a hit with its guns on the torpedo boat while, on the other hand, the torpedo boat may hit the larger ship with a torpedo. From this emerges the tactical proposition that in stormy weather, small vessels are suitable for attacking larger ones, and that detachments made up of small vessels can usefully seek battle with a squadron consisting of large ships.

Let us open up another question: that of the range at which one should open fire. Earlier, eminent naval commanders [*flotvodtsy*] would not permit fire to be opened until the ships had closed to pistol range. According to the Regulation of Peter the Great, a captain who opened fire beyond the range of his guns was to be sentenced to death. This is not an indirect suggestion that there was some general desire to open hasty fire. The causes for it [i.e., hasty fire] were many, but chief among them were the crude state of artillery and the difficulties in handling a sail warship when the men were standing at arms. At present, however, the handling of a moving vessel does not depend on the men who are manning the guns, and the guns themselves are significantly improved with regard to both loading and aiming. It is inappropriate for large warships to close to within pistol range, even in order to give battle with torpedoes, and therefore the old rule of preferring battle at close range cannot be accepted unconditionally today. In several cases, and for several classes of ships, it is appropriate to open fire at long range.

With regard to formations, the introduction of ramming tactics brought recommendations for either the line facing front, or a wedge. This was as if to imitate the formation used in combat by Roman warships with the ram. But at that time there were no guns. But now that there are guns, it follows that by presenting one's front, one will be unable to make full use of all of them.

At present, the dominant opinion is that the best battle formation is to steam in line ahead. One could say that we now have returned to the column-in-line, which has its own historical tradition. But if we have returned to this formation, it is not because of the fact that in the epoch of the great wars it was the dominant formation, but because common sense suggests that this formation is the one most suitable for contemporary warships.

Of course we need to study history. But we must learn from it how people have constantly pursued their goals, and how circumstances can present a countless host of combinations. History also teaches that military and naval affairs are highly complicated, and that mastery of all the most important principles still does not make for an experienced naval man. For this one must be practiced in recognizing circumstances since, as Napoleon says, in war, circumstances command. Because of this, and the great variations in circumstances, one must study history.

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Permit me to touch on the comments made in an article in a military journal, which complained that I said nothing about the rear or bases. The radical difference between a land army and a naval army (that is, a squadron) consists of the fact that the rear is the weak side of a land army, but not of a squadron. The rear of an army comprises its train, which sustains an army when it operates away from its bases. If an enemy outflanks an army and falls upon its rear, he places the army in a very difficult position. Since a vessel carries its baggage in its hold, a battle squadron does not have a rear upon which the enemy can fall,⁴⁶ which means a battle squadron cannot be placed in a similar situation. We may call the sea, which provides it with communication with its base, the squadron's rear. For example, if a squadron is operating in the Korean Straits, the Sea of Japan—which separates the squadron from Vladivostok—must be recognized as its rear. Yet this will be a strategic rear, or rather the rear of the theater of war, and not that of the field of battle. It is to cover this rear and guarantee the squadron's communications with its base that one must master [*vladet'*] the sea. This issue, in equal measure with the question of supplying the squadron, is a matter for strategy, and therefore I did not touch upon it in my discussions. Perhaps, however, for people who are really not conversant in naval matters, I should have explained briefly why I did not speak about the rear and base in my *Discussion of Questions in Naval Tactics*.

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Also meriting attention is the principal question that some dispute: should tactics, as I affirm, attempt “to indicate the means with which to win battles?”⁴⁷ It seems completely obvious to me that tactics are not written for the sake of writing tactics, but for business; and that in battle there is only one business, and that is to defeat the enemy. Tactics should give instruction in how to do that. Tactics cannot be so perfected that they can give precise instructions for every occasion, but they can provide much that is useful as advice. And when even this is beyond their ability, they are limited to studies that examine in each case how a decision was reached in accord with the relevant circumstances. But in any case, everything that tactics says, either directly or indirectly, provides instruction in how to win a battle.

On the resolution of this basic question depend many others. Once we recognize that tactics are “the science of battle,” and that its aim is to indicate the means for winning in battle, then we must consider that everything that serves as a means for winning in battle cannot belong to any other science than that of tactics. For example, tactics now are concerned with the question of “the moral element,” even though this issue is in itself utterly unique. If at some time a special

science of "military psychology" is created, then the question of the moral element will be specially examined by it. At that point tactics can stop dealing in detail with this matter and simply adopt the final conclusions of "military psychology." With regard to the fleet, one can say that at present, evolutions and signal means are included in tactics only insofar as these two special subjects have not been hived off as special sciences, or not brought into the already existing naval sciences. I assign the means of destroying telegraph cables to tactics only because it has not already been included in the [existing] course [of study] on naval practice, and so on.

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In my *Discussion*, when citing the opinions of [recognized] authorities on the significance of the moral element in the army, I said that this element has even greater significance in the fleet than in the army.⁴⁸ This proposition has also drawn remarks from writers in the ground forces. I must stress here that I do not want to suggest that the moral element has little significance in land battle. I value very highly the mutual respect between people in the different arms of the services, and I can see no useful purpose whatsoever in attempting to prove in the press that land warfare is not as difficult as those involved claim it to be. To say this would be to attempt to destroy the respect accorded the troops, and I consider any desire to impair the respect shown the army, the fleet or their units to be unworthy of the pen of a military or naval writer. I repeat, I have no intention of playing down the difficulties of wars on land, but it is necessary to keep in view that to go by means of an engine is in no way easier than to go by foot. And if one wishes to advance in this last manner, and if self-control is a necessity for so doing—then it is just as necessary for getting underway by a machine.

The engine sections of contemporary vessels are closed, and the stokeholds on some warships are even sealed hermetically, which means that air is driven into them as a forced draught. The men who work below deck not only do not see what is happening, but they do not even see God's good light. Meanwhile, they can hear the crash of gunfire, and they can hear distinctly the explosions of torpedoes which, even if they are distant, cause the ship's body to shudder. They will be in a state of continual anticipation, for at any minute a torpedo may strike that thin hull separating them from the sea so that, in just a few seconds, the whole section in which they are working will be flooded by water. Even more apparent is the danger present in the form of steam pipes and boilers, which by now are operating at terrible pressures. If an enemy shell smashes a steam pipe, then scarcely anyone will survive in the section in which this damage occurs. The example of the armored ship *Brandenburg* showed that out of thirty men, not one was saved.

One must visit the engine room of a modern vessel that is under full steam in order to obtain even a faint idea of what this is like, and of the kind of nerves one needs to stay calm when the minute-by-minute dangers of being drowned by water, or scalded by steam, are combined with the usual difficult circumstances of the job. But despite all this, all these men must carry out their tasks coolly if the warship is to maintain the required full speed in battle. They must remember to grease every part or else one of them may seize up and force the engine to shut down. They must vigilantly watch over the supply of water to each of the boilers for, on some ships, these are made of up to fifty components and, if water somehow leaks out, the boiler will explode. Meanwhile, they must simultaneously transfer coal from the bunkers at a rate of up to a thousand *puts* [eighteen tons/16,380 kg] an hour on large ships. Apart from all the rest, all the work places must be lighted. Since oil lamps go out even with explosions that, because of their distance, are quite harmless, electric lighting now has been adopted. Yet this means one must also keep special dynamos in operation, and make sure that they are working correctly.

The above account gives only a partial picture of what must be done in order to operate the machinery. But in battle even this is not enough: one must also operate one's guns, and this involves coordinating the supply of shells and cartridges on electrified elevators with the loading and firing. In a squadron battle the distance from targets, and the nature of the targets themselves, will be changing very rapidly. This means that all the organs involved in directing the guns' fire must work calmly and coolly while measuring and passing on ranges. Otherwise, the guns may do more harm to one's own warships (which will be nearby) than to the enemy's. Furthermore, the whole organization that manages the torpedo arm must operate correctly. To this we must add as well the demands that the whole ship be successfully ventilated, that the large guns' hydraulics work, and that above all else, absolutely cool heads be maintained by those directing the maneuvers of the warship itself.

All that has been said above demonstrates that it is easy to talk of movement by machinery but that it is not so easy to do this in combat conditions, and that for the successful operations of a ship in combat, every member of the crew must display the highest moral qualities. No one doubts that the highest moral qualities are demanded in the army as well, and as to the question of where these qualities must be higher, in the army or in the fleet—it is an idle one.

Notes

1. S.O. Makarov, *Discussion of Questions in Naval Tactics*, trans. John B. Bernadou, intro. and notes R.B. Bathurst (Annapolis, Md: U.S. Naval Institute, 1990), pp. 18–19. As Bathurst points out in a note (p. 18), it would be 1975 before another Russian admiral visited the Naval War College.

All dates in this article are given in accord with the Russian "old style"; that is, in accord with the Julian calendar. They are therefore twelve days behind Western dates throughout the 1800s.

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2. Yu. A. Panteleev, "Vydaishchiia russkii flotovodets S.O. Makarov" (Distinguished Russian fleet commander S.O. Makarov), *Russkoe voenno-morskoe iskusstvo: Sbornik statei* (Russian naval art: collection of articles), ed. R.N. Mordvinov (Moscow: 1951), p. 283.

3. S.G. Gorshkov, *Morskaiia morshch' gosudarstva* (Seapower of the state), 2nd ed. (Moscow: 1979), p. 133. Also see the essays in A.I. Dubravin, ed., *Deiatel'nost' vitse-admirala S.O. Makarove v sudostroenii* (The activity of Vice Admiral S.O. Makarov in shipbuilding) (Leningrad: 1977).

4. P.A. Zhilini, ed., *Russkaia voennaia mysl' konets XIX-nachalo XX v.* (Russian military thought from the end of the 19th century to the start of the 20th) (Moscow: 1982), p. 140. A reader will obtain some idea of the very limited *Praxis* available for sailors in the steam era before 1904 by glancing through Michel Merys (G. Blanchon), *La Guerre navale moderne: de Lissa à Tsoushima* (Modern naval war: from Lissa to Tsushima) (Paris: 1905).

5. For general accounts of Makarov's career, see such standard biographies as S.S. Semanov's *Makarov* (Moscow: 1972), and B. Ostrovskii's *Stepan Osipovich Makarov, 1848–1904* (Moscow: 1951). The most detailed account is his friend F.F. Vrangel's *Vitse-admiral Stepan Osipovich Makarov. Biograficheskii ocherk* (Biographical sketch), 2 vols. (St. Petersburg: 1911–1913).

6. Ian Hogg and John Batchelor, *Naval Gun* (Poole, UK: 1978), p. 101; R.B. Bathurst, "Introduction," in *Discussions* (1990), p. x.

7. Makarov, *Dokumenty*, 2 vols. (Moscow: 1953–1960), v. 2, pp. 705–713, provides the most complete bibliography of Makarov's published works available. On his multifaceted activities, see A.D. Dobrovolskii *Admiral S.O. Makarov—puteshestvennik i okeanograf (S stoletiiu so dnia rozhdeniia)* (Traveler and oceanographer [on the hundred anniversary of his birth]) (Moscow: 1948); A.I. Dubravin, "Stepan Osipovich Makarov—uchenyi, flotovodets, okeanograf" (Student, fleet commander, oceanographer), *Zapiski po gidrografii* (Hydrographical notes), (1969), no. 1, pp. 54–57; and the essays in A.I. Dubravin, ed., which also contains a useful bibliography, pp. 248–53.

8. Makarov, *Discussion*, p. 35.

9. These were republished in book form in 1891. Citations from these works below are from the "American Century Series" edition of A.T. Mahan, *The Influence of Seapower upon History, 1660–1783*, intro. L.M. Hacker (New York: Hill and Wang, 1957), and the U.S. Naval Institute's "Classics of Sea Power" edition of P.H. Colomb, *Naval Warfare: Its Ruling Principles and Practice Historically Treated*, 2 vols. (Annapolis, Md.: U.S. Naval Institute, 1990).

10. On Mahan and Colomb, see D.M. Schurman, *The Education of a Navy: The Development of British Naval Strategic Thought, 1867–1914* (London: Cassell, 1965), chaps. 3 and 4. The influence of Jomini on Mahan is outlined in B. Colson, "Jomini, Mahan et les Origines de la Stratégie maritime américaine," in H. Coutau-Bégarie, ed., *L'Évolution de la Pensée navale* (The evolution of naval thought) (Paris, 1990), v. 1, pp. 135–52. For a general introduction to Clausewitz and Jomini, see Richard M. Swain, "The Hedgehog and the Fox: Jomini, Clausewitz, and History," *Naval War College Review*, Autumn 1990, pp. 98–109.

11. Schurman, chaps. 5–8.

12. Mahan, *Influence*, p. 2.

13. On the neglect of tactical studies in Russia, see G.M. Gelfond, et al., *Tam za Nevoi moria i okeany. Istoria Vysshego voenno-morskogo ordena Lenina, Krasnoznamenного, ordena Ushakova uchilshcha imeni M.V. Frunze* (Out beyond the Neva to the sea and the ocean: the history of the M.V. Frunze Order of Lenin, Red Banner, Order of Ushakov higher naval school) (Moscow: 1976), pp. 115–16. Butakov and his text are discussed in A. Ya. Lur'e, "Admiral Grigorii Ivanovich Butakov," in Mordvinov, ed., pp. 234–43.

14. Makarov, *Dokumenty*, v. 1, Document 37, p. 59.

15. Other naval writers, of course, also recognized the need for a standard tactical manual. In 1894, for example, Commander William Bainbridge-Hoff, USN, published his *Elementary Naval Tactics*, a work whose approach generally agreed with that adopted by Makarov; see *Discussion*, pp. 36–37.

16. See, for example, "V zashchitu starykh bronenostsev i novykh usovershenstvovaniu" (In defense of old battleships and new improvements), *Morskoi sbornik*, no. 2, 1886, pp. 37–63 (*neof.*, or "unofficial" section) and no. 3, pp. 1–35 (*neof.*). In this unsigned account of a naval war between two imaginary nations in the South Pacific, he was drawn into tactics by his continuing interest in the problems of making vessels more difficult to sink. He returned to considering seriously the elements comprising a new body of naval tactics with his "Razbor elementov, sostavliaiushchikh hoevuiu silu sudov" (An analysis of elements constituting the combat power of ships), which appeared in *Morskoi sbornik*, no. 6, 1989, pp. 1–106 (*neof.*). In this he followed the method outlined in his letter of 1893, cited above.

17. On the background to the compilation of Makarov's instructions see Ostrovskii, *Stepan Osipovich*, pp. 171–72, 184, and Makarov, *Dokumenty*, ii, nos. 88–89, pp. 169–174. The text of this order itself is given in *Dokumenty*, no. 90, pp. 175–83, and in Appendix IV (Prilozhenie IV) of Makarov's *Razsuzhdeniia po voprosam morskoi taktiki*, published in two parts in January–February 1916 as a supplement to *Morskoi sbornik* ("Biblioteka Morskogo Sbornika") (*Morskoi sbornik* library), v. 2, pp. 412–22.

18. His work on *Discussion* during this period is chronicled in the diary extracts published in Makarov, *Dokumenty*, v. 2, no. 89, pp. 170–75; no. 91, pp. 183–89; and no. 116, p. 267. Also see the extract published in S.S. Semanov, *Admiral Makarov*, (Moscow: 1971), pp. 150–51. The genesis of Makarov's work was described by the Kronstadt journals *Kronstadtskii vestnik* and *Kollin* on 1 December 1896; see Makarov, *Dokumenty*, v. 2, nos. 120–21, pp. 271–75.

19. See the notice from the Kronstadt newspaper *Kollin* (3 December 1896) in Makarov, *Dokumenty*, v. 2, no. 122, p. 275.

20. See *Morskoi sbornik*, no. 1, 1897, pp. 17–84 (*neof.*); no. 2, 1897, pp. 1–63 (*neof.*); no. 3, 1897, pp. 1–58 (*neof.*); and no. 4, 1897, pp. 1–58 (*neof.*).

21. Semanov, *Makarov*, p. 154.

22. *Ibid.*, pp. 172–73; Semenov, *Admiral Stepan Osipovich Makarov* (St. Petersburg: 1913), pp. 30–31.

23. S.O. Makarov, *Discussion of Questions in Naval Tactics*, trans. J.B. Bernadou (Washington: Office of Naval Intelligence, 1898). For an appreciation of the utility of this text in training the United States Navy before the war with Spain, see the comments of the *New York Evening Post*, 7 April 1900, as reported in the Kronstadt newspaper *Kollin*, 19 April 1900, as reprinted in S.O. Makarov, *Dokumenty*, ed. V.S. Shlomin (Moscow: 1960), v. 2, p. 277.

24. Makarov, *Discussion*, trans. Bernadou, intro. and notes Bathurst. Since this is the most readily available edition, all quotations are from it, but occasionally modified slightly after comparison with the Russian edition of 1916.

25. S.O. Makarov, *Voprosy morskoi taktiki i podgotovki ofitserov (Razsuzhdeniia po voprosam morskoi taktiki)* (Issues of naval tactics and officer training [Discussion on questions of naval tactics]), 6th ed. (Moscow: 1943).

26. For accounts of these meetings, see "Prilozhenie I: Preinii po voprosam, vobuzhdennym na lektsiakh vize-admirala Makarova po morskoi taktiki" (Appendix I: Debates on issues raised in Vice Admiral Makarov's lectures on naval tactics), "Biblioteka Morskogo Sbornika 1916," v. 2, pp. 353–74.

27. In 1904, for example, Klado was to proclaim: "L'importance de la maîtrise de la mer est un fait aujourd'hui presque universellement reconnu. Malheureusement, au commencement de cette guerre [avec le Japon], il n'en fut pas ainsi . . ." ("The importance of mastery of the sea is an almost universally recognized fact today. Unhappily, at the beginning of this war [against Japan] it was not so. . .") N.-L. Klado, *La Marine russe dans la Guerre russo-japonaise* (Paris-Nancy: 1905), p. 46.

28. S.O. Makarov, "Rassuzhdeniia po voprosam morskoi taktiki," *Morskoi sbornik*, no. 7, 1897, pp. 1–12 (*neof.*).

29. Semenov, pp. 30–31. On the reception that greeted this work and its delayed publication, see Semanov, *Makarov*, pp. 172–75.

30. R. Kolomb, *Morskaiia Voina* (R. Colomb, Naval warfare) (St. Petersburg: 1894); A.T. Mekhan, *Vliianie Morskoi Sily Na Istoriu, 1660–1783* (A.T. Mahan, Influence of sea power upon history, 1660–1783) (1st ed. St. Petersburg: 1895; 2nd ed. St. Petersburg: 1896); A.T. Mekhen, *Vliianie Morskoi Sily na Frantsuzskuiu revoliutsiiu i imperiiu, 1793–1812* (A.T. Mahan, Influence of sea power on the French revolution and empire, 1793–1812) (St. Petersburg: 1897). While some Russian officers, Makarov included, had the linguistic abilities to read Mahan in English or in a serialized French version that appeared in the journal *Revue Maritime et Coloniale* from 1894 through 1896, it seems unlikely that he would have obtained a wide audience before publication of the Russian edition. For the publishing history of Mahan's works, see John B. and Lynn C. Hattendorf, comps., *A Bibliography of the Works of Alfred Thayer Mahan* (Newport, R.I.: Naval War College Press, 1986). On the connection with Aleksei Aleksandrovich, see Fred T. Jane, *The Imperial Russian Navy*, 2nd ed. (London: 1904), p. 705.

31. In addition, Makarov also stressed the importance of the proper training of ratings for naval combat, and of maintaining the highest morale possible. His contention that the morale factor was more important at sea than on land also aroused considerable criticism.

32. Makarov, *Discussion*, pp. 40, 32, 35, 44. (Italics original.) As he points out (*Discussion*, p. 40), he himself had begun doing this in his earlier article "Razbor elementov."

33. *Ibid.*, p. 32.

34. *Ibid.*, pp. 37–38.

35. *Ibid.*, p. 28.

36. *Ibid.*, chap. 2, "The Position of Naval Tactics in the Category of Naval Sciences," pp. 29–44.

37. This fifth article was republished in its entirety in L.G. Beskrovnyi, ed., *Russkaia voenno-teoreticheskaia mysl' XIX i nachala XX vekov* (Russian military-theoretical thought in the 19th and the start of the 20th centuries) (Moscow: 1960), pp. 406–414.

38. On this issue see S. Skriagin, "Razbor truda Makarova v sviazi s rabotami Mekhena" (Analysis of Makarov's work in connection with the works of Mahan), *Morskoi sbornik*, no. 10, 1897, pp. 1–44 (*neof.*).

The Russian text used here is to be found as "Prilozhenie III" in "Biblioteka Morskogo Sbornika, 1916," ii, pp. 401-411. The only editorial liberty taken is to break up some of Makarov's excessively long paragraphs for easier reading.

39. In this regard, at the close of his earlier series of articles Makarov had stressed that "in the conduct of war we should put more trust in our common sense than in military precedents, which are completely insufficient" (italics his); see *Discussion of Questions in Naval Tactics*, p. 300. Also see his earlier discussion on pp. 41-44. (Since this Naval Institute edition is the most readily available, all quotations will be taken from it, though the translations differ slightly from the Russian text of the 1916 edition.)

This contrasts with Mahan, who gave both history and theoretical principles a much more important place in his theories. History, he wrote, "illustrates the principles of war by the facts that it transmits," while "battles of the past succeeded or failed in conformity with the principles of war." (*Influence*, pp. 11, 8.) Colomb agreed and argued from the late 1500s on we "can easily trace the growing laws of naval war, unalterable and immutable if it is to be carried on with a view to the certain advantage of either side, and thereby a speedy conclusion." (*Naval Warfare*, v. 1, p. 39.)

40. Makarov had asserted that this principle "must be applied with caution to the circumstances of war at sea" and pointed out that although Villeneuve had "declared that mutual support of ships was the chief end in view," at Trafalgar he lost "to an antagonist who always acted on the principle that it is necessary to trust the fate of some part of the fleet to chance in a sea fight." (*Discussion*, pp. 32-33.)

41. This repeats Makarov's comments in *Discussion*, p. 33, although Bernadou's translation is somewhat ambiguous. The Russian phrase is "druzhnogo napadeniia na vruga," which he translated as "the simultaneous attack of an adversary" rather than "on an adversary."

42. The relevance of these views for the teachings of Mahan and Colomb, as indicated above, is quite plain.

43. Here Makarov obviously is consciously echoing Colomb, who in the introduction to his first edition wrote "that there are laws governing the conduct of naval war which cannot be transgressed with impunity." (Colomb, *Naval Warfare*, v. 1, p. 3.)

44. Not surprisingly, Mahan and Colomb rejected this type of analysis. When asked in 1895 whether developing techniques of torpedo warfare had caused him to change his views, and specifically whether "close" blockades were still possible, Mahan replied with a resounding affirmative and insisted that the new weapons had "simply widened the question, not changed its nature." (A.T. Mahan, "Blockade in Relation to Naval Strategy," *Naval Institute Proceedings*, November 1895, p. 857.)

Colomb agreed, and later editions of *Naval Warfare* argued that the Sino-Japanese conflict "illustrates to a remarkable degree the characteristics of naval warfare, and, in almost the highest degree, its leading principles. . . ." Regarding the "question of what is meant by command of the sea, what results from its gain or loss, and how it is gained or lost," he asserted, "are [sic!] presented to us in the Korean [Sino-Japanese] War almost as if it were a designed experiment to strengthen our reliance on the teaching of history." As for the influence of torpedoes, he concluded "that the Korean War gives us no reason for believing that any of the new inventions have modified the leading principles of Naval Warfare." (Colomb, v. 2, pp. 498, 517.)

45. This refers to Section 10 of his original series of articles; see "10. Some irregularities in the conception of what constitutes command of the sea," in Makarov, *Discussion*, p. 28. This brief section is the only occasion in these articles on which Makarov referred explicitly to Mahan and Colomb. Here he defines "command of the sea" in their sense as meaning "that the fleet commanding the sea constantly and openly plies upon it and that its heaten antagonist does not dare to leave its ports." But, he suggests, the recent development of torpedo and other technologies had introduced "inconsistencies" into this picture since now one might ask if "he properly understood that a victorious fleet [which commanded the sea] should protect itself from the remnant of the vanquished enemy."

46. By this Makarov means an immediate tactical rear, not a larger strategic rear.

47. In *Discussion*, p. 30, Makarov had opened his comparison of naval and land tactics with the assertion: "The purpose of tactics is to indicate the methods of winning a battle."

48. Like the military writer M.I. Dragomirov (1830-1905), Makarov was a follower of General A.V. Suvorov (1730-1800) in stressing the vital role of morale and *elan* in battle. He devoted chapter II of his *Discussion* to the "Influence of Morale upon Success in Battle." There (p. 47) he noted that the "morale element possesses greater significance in naval war than war on land." He briefly explained this by pointing out that on land, "action begins gradually and people have time to look at one another," but that at sea, "with the enormous speeds that obtain at the present day, intervals of time are not to be counted in hours, but by seconds. Put the helm over five seconds earlier and you ram your antagonist; five seconds later, and he rams you." Not surprisingly, military writers (e.g., N. Orlov in *Russkii invalid* and A. Puzryevskii in *Razvedchik*) tended to regard this as a slight to the valor of their service.