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## THEORIES OF NAVAL BLOCKADES AND THEIR APPLICATION IN THE TWENTY-FIRST CENTURY

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The naval blockade is a classic strategy for gaining sea control or imposing sea denial. It harks back to the age of sail, when seafaring strategy and tactics inherently were dependent on the weather.<sup>1</sup> But whereas once winds could help rout the mightiest fleet in the world (as partly explains the defeat of the Spanish Armada in 1588), modern naval forces have different capabilities and modern naval operations have different limitations.<sup>2</sup> Even so, the naval blockade remains in use as a strategy today, as was demonstrated during recent unrest in the Middle East.<sup>3</sup> Technological advancements in weapon systems, platforms, and communications, however, raise questions about the continuing relevance of blockade strategies and tactics that were developed during previous eras of naval warfare. If modern navies are using a centuries-old strategy, to what extent do the old rules still apply?

This article will address the theory and practice of naval blockades, with a specific emphasis on how they apply (or do not) in the twenty-first century. The discussion will begin by addressing the general legality of these actions, as they largely are governed by international law. Legal issues also have significant implications regarding terminology (e.g., whether an action constitutes a *quarantine* or a *blockade* could become the topic of significant legal analysis), so the relevant terms will be addressed first, to avoid confusion arising from labeling or wording.<sup>4</sup> The discussion then will address the classic models of naval blockades, the most influential of which will be deemed the proximity model. Theories of naval blockades will be evaluated in historical context against the various claims made for different blockade models.<sup>5</sup> Next, the discussion will compare the efficacy of earlier naval blockades in achieving some operational end point with the potential efficacy of

blockades today. This portion mostly will discuss how naval tactics have changed and the dependence on the open seas of international trade today. Finally, the analysis will move from theory to practice, examining two current international conflicts for which naval blockades have been discussed as potential solutions.

This succession of analyses accomplishes the following. First, the legality and ethics overview provides enough basic knowledge of international law to establish adequate context for the remainder of the discussion. The key advancement of theory then comes in the challenge to conventional thinking about blockades, accomplished by dissecting the basic components that affect naval strategy. Advancing the enforcement model proposed herein exposes the shortcomings in classical thinking; the model redefines how to evaluate blockades and make decisions about imposing them. This should contribute to a larger discussion about command-and-control strategy and tactics at sea. A primary purpose of the article is to build on existing research to improve the classification of blockades so as to incorporate them better within the greater context of both naval history and modern strategy. Although the enforcement model reevaluates some basic approaches to blockades with regard to their purpose, description, and application, this analysis is intended to advance the topic into the modern era by relabeling prior models and providing strategic examples. Therefore, the most important goal of this article is not to complete a discussion but to begin a larger examination of naval tactics below the level of armed conflict—that is, to rejuvenate the topic of blockades to draw contrasts between old ways of thinking and new tactics, techniques, and procedures. Ultimately, this article is intended to provide insight on how a classic naval strategy might be understood and applied within the context of modern naval operations.

#### LEGALITY, ETHICS, AND TERMINOLOGY ASSOCIATED WITH NAVAL BLOCKADES

There are multiple methods of blocking naval access or commercial trade to a region, but their employment carries significant ramifications in terms of international law. The legal issues make definitions critical; which terminology is applied is not a mere matter of labeling. The legal restrictions also affect how a blockade will be conducted. For purposes of this discussion, the overarching definition applied will be as follows: a *naval blockade* involves blocking access to a region. *Access* encompasses military, trade, and physical aspects; the last mentioned may include the ability to perform construction of new or on existing facilities. The discussion then addresses how international law restricts different types of access, and what that means for naval operations.

Terminology-related confusion surrounds the use of *sanctions* versus *embargoes* versus *blockades*. The difference largely rests in the scope of actions

undertaken under each concept. *Sanctions* involve actions (diplomatic, economic, military, or otherwise) that countries take for a variety of reasons, such as to condemn particular behaviors or contain an emerging threat.<sup>6</sup> However, the important point is that the term *sanction* is construed broadly. An *embargo*, on the other hand, involves the prohibition of trade with a particular group, either in part or in totality.<sup>7</sup> Thus, embargoes tend to be more severe and encompassing. Put another way, all embargoes are sanctions, but not all sanctions are embargoes. Colloquial usage of the term *sanction*, however, tends to confer a more limited scope compared with the restrictions involved in an embargo. A *blockade* is the most severe of the three types. This term refers to a belligerent action that one nation takes against another to deny access to entire regions (i.e., for purposes of this article, sea denial). Blockades typically involve military actions intended to keep an enemy from receiving aid.<sup>8</sup> All three terms carry legal implications, and while the international community largely agrees on the differences among these concepts, definitional debate occurs regularly regarding whether particular operations are sanctions, embargoes, or blockades.

As important as the distinctions in terminology are, it also is critical to understand who applies the labels authoritatively. According to the United Nations Charter, only the Security Council decides on sanctions and, by extension, the even more severe options.<sup>9</sup> Article 41 of the Charter reads as follows: “The Security Council may decide what measures not involving the use of armed force are to be employed to give effect to its decisions, and it may call upon the Members of the United Nations to apply such measures. These may include complete or partial interruption of economic relations and of rail, sea, air, postal, telegraphic, radio, and other means of communication, and the severance of diplomatic relations.”<sup>10</sup>

These rules essentially grant the Security Council the right to determine what course of action is appropriate for a given situation. However, article 41 mostly covers sanctions and embargoes; it does not discuss how military forces could be employed to enforce the agreed-upon restrictions. Military intervention is better addressed by article 42, which extends and clarifies the capabilities of the Security Council in these matters. “Should the Security Council consider that measures provided for in Article 41 would be inadequate or have proved to be inadequate, it may take such action by air, sea, or land forces as may be necessary to maintain or restore international peace and security. Such action may include demonstrations, blockade, and other operations by air, sea, or land forces of Members of the United Nations.”<sup>11</sup>

These two articles form the primary international law governing the application of sanctions, embargoes, and blockades. Unfortunately, owing to their brevity they do not delve into details; they were not written to cover the specific

parameters of a given scenario. The Security Council largely is left to decide which actions will receive international approval and how they will be applied. Any actions that the Security Council approves regarding sanctions, embargoes, and blockades are legal, by mutual agreement; however, when not all members of the Security Council approved the actions in question directly, the details of terminology and past practice become more important.

Limited attempts have been made to clarify the intent behind these articles, especially with regard to armed conflict at sea. The *San Remo Manual on International Law Applicable to Armed Conflicts at Sea* provides the most modern international interpretation specifically applying to blockades.<sup>12</sup> This volume is one of the few comprehensive international instruments drafted in the twentieth century that guide determinations of legality regarding naval warfare.<sup>13</sup> Although it is a legally recognized document, it represents a codification of customary international law and therefore is not fully binding. Still, it captures the current international consensus regarding blockades.

Perhaps some of the manual's more important contributions involve the definition of *neutral waters*. The manual states that "[n]eutral waters consist of the internal waters, territorial sea, and, where applicable, the archipelagic water, of neutral States. Neutral airspace consists of the airspace over neutral waters and the land territory of neutral States."<sup>14</sup> These descriptions effectively determine the accepted neutral areas during international conflict, but the definitions also set up how merchant vessels can be treated during a blockade. The manual states that

[m]erchant vessels flying the flag of neutral States may not be attacked unless they:

- (a) are believed on reasonable grounds to be carrying contraband or breaching a blockade, and after prior warning they intentionally and clearly refuse to stop, or intentionally and clearly resist visit, search, or capture;
- (b) engage in belligerent acts on behalf of the enemy;
- (c) act as auxiliaries to the enemy's armed forces;
- (d) are incorporated into or assist the enemy's intelligence system;
- (e) sail under convoy of enemy warships or military aircraft; or
- (f) otherwise make an effective contribution to the enemy's military action, e.g., by carrying military materials, and it is not feasible for the attacking forces to first place passengers and crew in a place of safety. Unless circumstances do not permit, they are to be given a warning, so that they can re-route, off-load, or take other precautions.<sup>15</sup>

The treatment of merchant vessels or others flying the flags of neutral states will become particularly important later in this discussion, as it pertains to theoretical differences among blockade types. The relevant point here is that customary

international guidelines do exist regarding target discrimination and legal actions against neutral or seemingly neutral vessels during a blockade.

These international laws are important considerations for conducting naval operations, including blockades with our allies or against our enemies. In addition to customary international law, however, existing U.S. law describes accepted procedures for blockades. These instructions are documented in *The Commander's Handbook on the Law of Naval Operations*, which directly addresses naval blockades.<sup>16</sup> Our American definition of a *blockade* closely matches the international guidelines pertaining to military action. "Blockade is a belligerent operation to prevent vessels and/or aircraft of all nations, enemy as well as neutral, from entering or exiting specified ports, airfields, or coastal areas belonging to, occupied by, or under the control of an enemy nation."<sup>17</sup> The additional point is that our rules are far clearer than the UN Charter articles. Specifically, *The Commander's Handbook* outlines several criteria to which a valid naval blockade must conform.

1. The belligerent nation must establish the blockade, which should be accompanied by a declaration that states the beginning date of the blockade, the geographical limits, and any grace period allotted for neutral vessels and aircraft to leave the restricted area.
2. All nations affected must be notified of the blockade.
3. The blockade must be effective and maintained by legitimate methods and means of warfare sufficient to render ingress or egress of the blockaded area dangerous.
4. The blockade must be applied with impartiality; any discrimination by the belligerent nation in favor of or against the vessels and aircraft of a particular nation renders the blockade invalid.
5. The blockade may not block access to or departure from neutral ports and coasts.<sup>18</sup>

These laws and criteria provide basic information regarding our self-imposed regulations and some understanding of how they differ in scope and detail from international law. Granted, this brief overview does not address a myriad of both important and nuanced aspects of naval blockades. For example, our domestic laws specifically prohibit imposing a blockade if the sole purpose is to starve the civilian population or deny it anything essential to survival.<sup>19</sup> Still, for the purposes of legal terminology, the U.S. Navy regards a *blockade* as belligerent action designed to prevent access to a specific region. This definition is in keeping with our guidelines that differentiate among terms that include *sanction*, *embargo*, and *blockade*.

For all the foregoing discussion of legal definitions, it also is important to consider the operational implications of terminology—how these terms will be defined and used in practice. The critical example here involves *sea control*, or *command of the sea*.<sup>20</sup> In this context, *sea control* is to be understood in terms of the operational concepts formulated with regard to strategy and tactics, rather than as a matter of legal definition. The concept encompasses a limited or nonpermanent geographical control that allows the controlling naval force to exercise the full range of operations within a particular area, including those employing undersea elements, surface vessels, aerial assets, and even electronic signals.<sup>21</sup> The concept of control must extend as well to *sea denial*; the term refers to the ability to prevent adversarial operations within the same temporal and geographical space.<sup>22</sup> Therefore, *sea control* encompasses the ability to operate unconstrained within a particular environment while simultaneously denying operational access to adversarial forces.

The concepts of *naval blockades* and *sea control* clearly overlap when discussing *blockade effectiveness*, which under our own legal guidelines is a critical requirement for maintaining a legal blockade.<sup>23</sup> The greatest difficulty comes in determining whether a blockading force truly has sea control, involving both its own ability to operate without constraints and its ability to deny access to adversarial forces. When the engagement involves direct action, it is relatively easy to establish whether those conditions exist; however, when sea control is estimated largely on the basis of available forces, the determination rests on the probability of success of the various strategic courses of action available. The latter situation requires that any blockade established be such that the international legal community will deem it valid and effective even without any martial action. Once any active engagement occurs, the circumstances inherently change, and related decisions and subsequent actions represent an entirely separate, equally complicated discussion.

The point is simply that legal definitions function as mere guidelines when they are applied to operational realities in theater. Therefore, while in the context in question sea control represents the operational application of the chosen strategy and tactics, in the circumstances of a particular naval blockade it may exist in accordance with or in violation of international law. There always will be significant gaps between legal definitions and the operational realities of a specific set of circumstances, which makes legal determinations subject to interpretation.

In summary, extensive international and domestic instructions exist that lay out the operational norms to which naval forces are expected to adhere during the conduct of a blockade. For purposes of this discussion, the most important point is that all these laws serve only to set the playing field during a time of war. Legality presets some rules, which some nations then follow, to varying extents;

however, often other parties ignore them entirely. For example, no blockade ever has existed without blockade-runners attempting to circumvent it. The laws also do not assist in the theoretical matter of incorporating blockades into the formulation of naval strategy and tactics or in the practical matter of applying a blockade as part of an ongoing naval operation.

These last two points must be addressed formally because, as documented in this section, there exists a substantial body of international laws that still govern a strategy that was designed during the age of sail. The continued existence of these laws seems to imply that blockades remain an effective strategy, which raises multiple questions about when and why our naval forces would consider using this approach to resolve some conflict today. Therefore, the discussion now moves from terminology and legal considerations to the theory and practice of conducting naval blockades.

#### ON THE THEORY AND TYPES OF BLOCKADES

Over the history of naval conflict, the importance of the role that blockading strategies have played cannot be overstated. Alfred Thayer Mahan suggested that decisive control of the sea required both offensive actions through decisive battles and defensive actions through the protection and control of contested waters.<sup>24</sup> Controlling such waterways ostensibly requires at least a partial blockade exercised against hostile forces.

Given the blockade's historical prominence and effectiveness as a naval strategy, it is important to consider different types of blockades and how they have been enacted. Previous descriptions of blockades have divided them roughly into three different types, forming part of what we will refer to as the proximity model: close blockades, semidistant (or loose) blockades, and distant blockades.<sup>25</sup>

##### *Close Blockade*

Historically, a *close blockade* required placing warships within sight of the blockaded coast or port to ensure the immediate interception of any ship entering or leaving the area. Bernard Brodie describes the purpose of a close blockade as effectively reducing the size of the sea available to the enemy to nothing; or, to put it another way, a close blockade effectively makes the enemy's coast your frontier.<sup>26</sup> The goal is to create a secure perimeter that prevents anything from slipping through. Ships' crews must maintain constant vigilance, and the sheer manpower required to execute such a blockade is tied directly to the size of the blockaded region. Imposing and maintaining a close blockade of a single port may be a reasonable objective; however, conducting a close blockade of an entire coastline becomes an increasingly problematic challenge. Succeeding at the latter requires a dramatic asymmetry in naval forces, leaving the blockaded nation incapable of mustering sufficient operational naval forces to break through.

A close blockade represents naval strategic thinking and technology developed during the age of sail. Early in that era blockades generally were ineffective or extremely limited because naval forces' poor seaworthiness and restricted range of action prevented them from sustaining operations on a hostile coast.<sup>27</sup> However, by the late sixteenth century the development of much larger and more-seaworthy sailing ships enabled sustained naval operations, and by the eighteenth century the longer underway time enabled by the coppering of ship bottoms made a powerful force such as Britain's Royal Navy capable of projecting and sustaining sufficient naval power to blockade almost any coast in the world.<sup>28</sup>

Still, the important practical implications are the advantages and disadvantages of close blockades. The primary benefit of a close blockade is that it effectively prevents a smaller force from operating outside its home port at all—superior control of the seas carries obvious strategic advantages. Yet other advantages also must be considered, such as with regard to relative morale; the blockading force feels strong and confident, even if its actions require little to no movement, whereas the blockaded force balks at its forced inaction and suffers damage to its morale. However, close blockades carry inherent weaknesses too. The approach requires manpower proportional to the blockaded area, and maintaining that level of effort can be as exhausting for the blockading naval force as for the blockaded. A tight perimeter is required to ensure that neither vessels of the enemy nor blockade-runners of any sort slip through, which means that the blockading force must be not only sizable but constantly vigilant. Furthermore, a close blockade actually can play to the advantage of the smaller force, if the effort ties the larger force to a given area, preventing it from operating elsewhere.<sup>29</sup>

Close blockades also epitomize the rationales of the age of sail because their effectiveness rested in part on blockading ships' ability to remain safely out of the range of coastal cannon. Since then, the development of and advances in aviation have complicated this calculus, as the blockading force must defend itself against not only seaborne but airborne forces. This added dimension complicates strategic decision-making and calls into question what a "close" blockade would look like if our modern Navy conducted one.

#### *Semidistant or Loose Blockade*

A semidistant blockade differs from a close blockade according to the distance of the blockading force from the hostile coast; however, the distinction is based not on nautical mileage but on intent. A semidistant blockade is aimed at hostile naval forces as part of an effort to seek decisive victory through confrontation.<sup>30</sup> These efforts are less suffocating for the blockaded region because the blockading force cannot, and does not attempt to, deny all access to the region. The less secure perimeter permits merchant vessels, and perhaps even limited military

reinforcements, access to the blockaded areas. Thus, the blockade function applies more to enemy naval forces than to any others attempting to access a region.

A semidistant blockade does carry some advantages and disadvantages relative to a close blockade. For example, the advent, then the expanded use, of mines and torpedoes made applying a close blockade much more difficult.<sup>31</sup> When contending with mines (and we should keep in mind that in the nineteenth century so-called torpedoes were actually mines) the blockading force assumed the primary operational risk to life. While setting a mine some defenders might lose their lives, but a ship navigating a minefield (and its entire crew) risked sinking entirely. Granted, mining a port takes time, so enacting this defensive strategy requires making several assumptions and having certain opportunities. Still, defensive mining offered a counterstrategy to the close blockade that required a similar counter in blockading strategy. The semidistant blockade was one such counter.

Additionally, a semidistant blockade might be enacted because of a paucity of available naval forces. A close blockade required dominant asymmetry in naval forces, whereas a semidistant blockade could be enacted even when the blockading party did not maintain an edge in raw naval power over the adversary. A disadvantage comes in the form of allowing some degree of relief for the blockaded region, since the focus is on the enemy's operational forces, not necessarily on denying trade access. However, trade likely would suffer reduction as well; the degree to which that was so could be measured by the attempted or successful running of the semidistant blockade.

### *Distant Blockade*

The third type of blockade in the proximity model is the distant blockade. Similar to those of the semidistant variety, these blockades developed as a reaction to changes in technology and the corresponding changes in naval strategy. As the age of sail gave way to the age of steam, evolutions in naval capability changed the demands for fleet resources; consumption of large amounts of fuel changed the logistical needs of a fleet. Shifts in the wind no longer provided the same respite to either blockading or blockaded forces, and coal-burning ships were limited in range compared with sailing ships.<sup>32</sup> Combined with the threat of mines, these changes in naval technology required shifting why and where naval forces would be deployed during a blockade. Expressed differently, a distant blockade can be considered a close blockade imposed by a superior class of ship.<sup>33</sup> Therefore, in a limited sense, a distant blockade became a close blockade, adjusted to the distances appropriate to the capabilities of more-modern fleets.

Even so, a distant blockade could be seen in a different light if the distance was determined for reasons other than technology. For example, a close blockade secures nearly unlimited control over a very small area, whereas a distant blockade

secures very limited control over an almost unlimited area. The scope and application of sea power are determined by the tools and resources involved. A naval force could adopt a distant blockade if it had only limited advantages in resources over the opposing naval force; this was so even if it had vastly superior technology yet limited resources. In such a situation, a distant blockading force can threaten enemy forces with interception and destruction only if the hostile ships venture too far from their home ports.<sup>34</sup> This approach greatly limits the expenditure of resources while still allowing for the establishment of overall naval superiority. However, such a blockade would not prevent the hostile force from easily gaining access to relief. Therefore, a distant blockade might be seen as a marginal naval advantage applied robustly over a great area, rather than as a strategic tool to deny access to a particular region. The opportunities a distant blockade opens are therefore more abstract than the concrete goals of a close blockade—another difference related to intent and opportunity.

These observations are not wholly novel. Corbett differentiated between a close blockade designed to deny an enemy the ability even to leave port and a distant or observational blockade intended to draw out enemy forces for a decisive conflict that would favor the blockading force.<sup>35</sup> Put differently, a distant blockade would be indistinguishable from open naval warfare against an equal opponent over contested waters; what makes it a blockade is the advantages—in raw naval forces, technology, or both—enjoyed by the forces on one side, and how that naval power employs those forces. For purposes of theoretical and legal categorization, the intent behind the choice of blockading type becomes an important differentiating factor, in addition to the technology extant at the time.

### THE PROXIMITY MODEL

These three types of blockades—close, semidistant, and distant—compose what we refer to as the proximity model. It is noteworthy that this distinction is ours, whereas the language and descriptors are not. However, applying the concept of proximity describes changes in both the actual strategy and the intent behind the new actions. With regard to the change in strategy, *proximity* encompasses how blockading naval forces adapted naval operations to advances in technology by extending the functional operations of a close blockade farther offshore. In particular, mines forced blockaders to maintain their close blockades at a greater distance from shore, and steam changed the logistical requirements for a fleet intending to adopt and maintain a close blockade. Still, the underlying intent remained the same—a fleet endeavored to deny all access to a region by establishing a secure perimeter that prevented anything, even merchant vessels, from breaching the cordoned-off area.

A second, and secondary, reason for labeling these ideas the proximity model relates to the possibility of permissible passage through the secure border. Specifically, a close blockade establishes a perimeter intended to be so secure that no vessel can breach it; a distant blockade establishes a looser net with a far less secure perimeter, and a semidistant blockade falls somewhere between those two concepts. In this context, *proximity* refers to the distance between ships, which reflects both the intent of the blockade and the technological capability of the time. In this adaptive way the proximity model can address changes in both intent and technology while still addressing the key concerns of the scholars who originally developed and used this language (specifically Professor Milan N. Vego, whose work shaped the development of the proximity model).<sup>36</sup>

Granted, maintaining a certain physical proximity between ships along the perimeter is only one method of securing the perimeter and denying passage through the blockade. Technological advancements allow the security of the cordon to be maintained without requiring the physical proximity of ships to be as close. Thus, the proximity model truly depends on the degree of security that the ships provide over the physical area; *proximity* therefore becomes a measure of the tightness of the security established along the perimeter, by whatever means. In the historical context, secure perimeters were established by establishing and maintaining a close physical proximity of ships, but the modern context allowed a reinterpretation of *close*, *semidistant*, and *distant* purely on the basis of the degree to which blockaders could regulate the flow of traffic in and out of the blockaded area. This control could be established by employing various forces, including airpower as supplied either from aircraft carrier or land, and therefore without necessarily requiring a tight net of ships in close physical proximity to each other or the shore.

Before we continue, it is worth noting that the proximity model is among the most common methods of differentiating blockades, but it is not the only one. Another, related method could be referred to as the dimensional model.<sup>37</sup> Again, the *dimensional model* label is of our own making, yet it aptly describes the concept. This approach defines a blockade along several dimensions, as follows:

- *distance from hostile force*: the distance of the perimeter of the blockade, whether close or distant, from the blockaded regions
- *distance from supply*: the variation in practicability of maintaining a blockade near home waters versus far from home ports
- *permeability*: the tightness of the perimeter and the possibility of vessels slipping through
- *aggression*: the level of coercion the blockading force uses, including paper, pacific, and belligerent modes<sup>38</sup>

The dimensional model provides a highly useful lexicon for categorizing and assessing blockading tactics and logistics across a variety of critical dimensions.

### THE ENFORCEMENT MODEL

To combine the virtues of the proximity and dimensional models, we propose the enforcement model of naval blockades. Whereas the proximity model derives its name from the distance of the blockade from the coast or the distances between the naval units maintaining the perimeter, and the dimensional model is so labeled because it assesses blockades through multiple parameters, the enforcement model derives its name from the treatment of blockade-runners. Application of the enforcement model still builds on proximity-model and dimensional-model tenets by suggesting that the intent and distance of the blockade can have not only theoretical significance but practical implications for how a blockade would be imposed. The enforcement model is a hybrid of the other two approaches, designed to integrate their core premises for both retrospective contemplation and prospective practical application.

The enforcement model posits that the best way to evaluate and characterize a blockade, whether historically or strategically, is to examine the actions taken against individuals who attempt to violate the blockade. It is critical to differentiate categorically between neutral ships and blockade-runners, even if it is not always possible for the blockading force to distinguish between them immediately. Neutral ships may not be attempting to pass through the blockade at all, or they may be trying to pass through the perimeter with goods that do not fall under sanctions while heading to a port not intentionally cut off by the blockade. Despite the many ways in which a ship could be neutral in these scenarios, a key characterizing factor is the extent to which a blockading force will investigate neutrality to ensure that vessels are not trying to evade the blockade; in the most extreme circumstances, the blockading force may not permit any neutral passage at all.

Runners provide the opportunity for a particularly interesting assessment of the resolve of the blockading force, the potential success of the blockade, and the needs of the blockaded region. A more restrictive blockade may have fewer runners, as no one may attempt to impersonate a neutral vessel, and the resolve of the blockading force becomes instantly recognizable by whether the force intervenes at all, or takes full offensive actions against blockade-runners, or something in between. A willingness to intervene forcefully, and to maintain continuously a force able to do so, offers insight into what it will take to sustain the blockade. Finally, evaluating the activities of blockade-runners also provides insight into the blockaded region, because the goods and services most in demand are the ones on which smugglers are most likely to concentrate when they endeavor to

circumvent the blockade. When we examine blockade categories with regard to blockade-runners, a close blockade represents the harshest execution of the concept; in that mode, all blockade-runners—by intent, if not practice—are intercepted and punished, perhaps destroyed. A distant blockade provides the loosest net, permitting most blockade-runners to pass by unpunished.

### *Types of Blockades within the Enforcement Model*

The enforcement model involves not categorical differences but rather escalational differences—variations in the responses to blockade-runners. Each higher echelon of the model corresponds to a more suffocating blockade, and thus to stricter treatment of blockade-runners. The overarching term *blockade* still can be applied to all levels in the model, since the underlying intent remains to block or deny access in some way. The four levels of the enforcement model are as follows: paper blockades, presence blockades, martial blockades, and total blockades.

*Paper Blockades.* Paper blockades consist of sanctions, embargoes, and other legally condoned barriers to trade and access. The term *paper blockade* is meant to describe not a weak or ineffective blockade but rather one that exists largely in the form of a declaration. However, sanctions have only limited effectiveness if there is no mechanism to enforce them. This first level also immediately demonstrates the underlying importance of considering intent and enforcement in evaluating the theoretical and practical significance of naval blockades—namely, sanctions describe the outer boundary of blockading actions, yet the sanctions themselves are not as important as the actions used to enforce them. If the international community places sanctions on a country yet no military or law-enforcement entity exists to enforce them, the restriction may carry only as far as the paper on which it is written. Blockade-runners can throw away the written admonishment and continue with their original activities, and enforcement of the blockade itself may hamper normal national policing efforts.

However, sanctions supported by military forces—including the actual use of those forces—carry significant weight. The sanctions themselves only set out the intent to blockade and the terms intended to be imposed. The more revealing operational description regarding sanctions comes from the application of naval forces, whether in the form of soft power or the use of arms, on any individuals who choose to violate the terms of the blockade. The term *paper blockade* therefore describes sanctions or similar prohibitions that declare an intent or issue orders to deny access or resources, but lack the mechanisms to enforce that intent suitably. Under guidance from *The Commander's Handbook*, the United States would consider such a blockading tactic not strictly legal, as the lack of an ability to enforce the blockade brings its validity into question.<sup>39</sup>

The enforcement model does not attempt to judge the purpose or efficacy of sanctions, although it should be noted that there is a large political science literature specifically dealing with the topic; instead, the primary goal here is to place sanctions within the larger context of blockades.

***Presence Blockades.*** Presence blockades mark an increase in the naval forces involved and their collective willingness to enforce the blockade. This approach could involve checking cargoes and manifests; establishing a physical presence at either embarkation or destination; or sending vessels to patrol contested territory, representing a military presence within the blockaded region.

Thus, a variety of methods may denote a presence blockade. The difference from a paper blockade is that the blockading force makes its presence felt. Still, presence blockades may not address blockade-runners aggressively even if they deny some access to the area or some flow of resources. Blockade-runners may be permitted to run through the blockade without immediate military intervention.

***Martial Blockades.*** Martial blockades increase the intervention options available in that blockading forces may intervene immediately with force against any blockade-runners. Trade still may flow through the blockade and individuals may continue to beat the blockade through the use of false flags, cargo-smuggling techniques, or other means, but incorporating immediate military intervention dramatically increases the enforcement options available and the consequences for attempting to run the blockade. A martial blockade may adhere to international legal standards, because this type allows neutral ships to pass. Forceful intervention may be permitted only in limited circumstances and against certain parties, but it *is* permitted. Thus, with a martial blockade the intent is to deny not all access but only access by a particular party and to a particular region.

In relation to the classifications of the proximity model, martial blockades are similar to both semidistant and distant blockades. The blockading force is attempting to deny access by using force, yet the lack of a complete presence, for whatever reason, prevents the imposition of a suffocating blockade on the intended region. Still, even a distant blockade involves the use of force and therefore clearly would qualify as a martial blockade.

***Total Blockades.*** Total blockades represent the classic type of blockade, in which the blockading force allows no access or passage to anyone else. It involves a complete military shutdown of the region to all parties and anticipates immediate action against any and all forces entering the region.

A total blockade therefore would be similar to a close blockade, owing to the tightness of the restrictions imposed, although with modern naval technology a total blockade could be imposed at quite a distance offshore. This final method is the most severe, as it permits no access to the blockaded region. The blockading

force will use force aggressively, undeniably, and immediately against anyone attempting entry to the blockaded region.

### *Comparisons among Models*

The ascending levels of the enforcement model represent escalations of force, with each higher level carrying forward all the enforcement actions available to the blockading force at lower levels. However, escalation does not necessarily have to follow a strictly sequential path. A martial blockade could be imposed without first imposing a paper blockade and then a presence blockade, but putting in place a martial blockade does not exclude the possibility of imposing legal sanctions or merely establishing a physical presence. The key difference becomes the totality of the enforcement techniques available to the blockading fleet, which must be made known to all at the time of enacting the blockade—a requirement under U.S. law.<sup>40</sup>

The enforcement model also allows for better practical differentiation among blockade types. Sanctions can and likely will be imposed across all the levels incorporated in the model; however, the mere imposition of sanctions does not determine the naval actions that the blockading force may undertake. The enforcement model's levels can be determined for historical cases by analyzing how the blockading fleet acted against blockade-runners. This means that the enforcement model can be applied alongside the traditional proximity model when considering or evaluating the strategy and tactics used during a blockade. Finally, the enforcement model can assist in planning for future blockades, because it inherently builds on the stated limitations on the blockading force, thereby keeping in line with our required standards of notification.<sup>41</sup>

An important comparison involves how the enforcement model differs from the dimensional model, especially with regard to terminology. Although the dimensional model does include coercion as a possible methodology, it differentiates among paper, pacific, and belligerent blockades. The dimensional model would be more likely to interpret a paper blockade as weak or ineffective, given the minimal level of force the blockading parties apply. The term *pacific blockade* describes a blockade that is conducted amid general hostilities and includes the intent to disturb international trade with the blockaded region.<sup>42</sup> While neutral parties would be allowed to pass, active hostilities between the blockading and blockaded forces is expected. A pacific blockade would fall somewhere between the enforcement model's presence and martial blockades, in that a presence blockade applies a physical presence to enforce sanctions or embargoes, while a martial blockade involves hostile actions between the opposing parties but no attacks on neutral parties. Unfortunately, use of the term *pacific blockade* does not make this differentiation very clear (and it also has nothing to do with a blockade occurring in the Pacific Ocean!). Belligerent blockades would involve

direct action, although the enforcement model differentiates between a martial blockade and a total blockade by defining how far a blockading force will go to stop runners, rather than merely including direct action as a possible means of pressuring the blockaded force. Thus, practical and theoretical differences in terminology separate the dimensional and enforcement models, although consideration of the coercive dimension provides the best comparison between the two models.

The enforcement model's differences from the proximity model in how it makes theoretical categorizations of blockade types are not purely matters of description or historical classification. The enforcement model better aligns with naval blockades as they would be applied in the twenty-first century. This assertion requires some defense, including a comparison of the effectiveness of blockading tactics in cases from the modern era with those drawn from history. The discussion now will turn to the effectiveness of blockades in the twenty-first century, both as a practical evaluation of the strategy's utility today and as a defense of the enforcement model.

#### PREVIOUS EFFECTIVENESS OF BLOCKADES VERSUS EFFECTIVENESS IN THE TWENTY-FIRST CENTURY

Understanding the effectiveness of a blockade requires first understanding the importance of sea power in general, especially with regard to the heavy reliance of trade on the sea. In previous centuries the importance of the shipping of goods by sea was obvious; today, even if it is less obvious in the global consciousness, seaborne shipping remains a critical part of the global economy, notwithstanding the development of modern ground-based and aerial methods of transportation. The global economy remains highly dependent on maritime shipping—over 90 percent of the world's trade involves the sea in some way—so the sea continues to be a dominant factor in the global economy.<sup>43</sup> This makes control of sea-lanes critical to global power even today.

Throughout their evolution, blockades have undergone reinterpretation to incorporate new dimensions and adjust to “modern” developments, whenever those occurred. Eighteenth-century strategies were adapted largely to the sail as the modern technology, then nineteenth-century strategies adapted to steam power, and twentieth-century strategies adapted to incorporate aerial intervention.

Twenty-first-century technological advancements deal largely with signals, making the role of electronic communications the critical area to which blockade strategies must adapt. The term *signals* as used here does not exclude the forms of electronic or information warfare that first developed during the twentieth century; however, prospective operations now must address the explosion in

bandwidth and global connectivity that transformed simple signals and global positioning from individually useful tools into critical infrastructure and operational elements within a modern military. Whereas signals intelligence, when it emerged in the twentieth century, was a novel development, in the twenty-first century this technological capability may come to dominate military operations. Here the terms *signals* and *signals intelligence* are construed broadly and applied to developments in communications and remote operations that do not require physical presence.

Adapting blockades to this evolution is, in many ways, no different from the earlier adaptation to an aerial dimension, except that planners must take into account the effect of denied and degraded environments on the potential success or disruption of any blockade. Stopping the flow of information alone could disrupt shipping effectively without requiring a full physical force to apply the blockade. Ensuring or denying access to information available via remote devices, drones, and other communication modes becomes a critical aspect, whether to the ability to impose a blockade on one side or to exploit a vulnerability so as to break through it on the other side. Cyber warfare and signal denial become the primary dimensions—at the moment—that the twenty-first century has introduced into blockading strategy and tactics, to which a modern warfare concept must adapt and which it must attempt to overcome.

Yet even such modern evolutions do not alter the potential influence of sea power over the global economy, and people can continue to appreciate the power of a blockade that attempts to deny the delivery of resources or other access to an area. Historical naval blockades were only as effective as the reliance of an area on maritime access, and this principle remains true despite the advancement of technology. The greatest change simply has been the introduction of the aerial and signal dimensions, which do not fall outside the scope of naval power. An aircraft carrier is a tangible and powerful example of how naval and air forces can be blended into a nexus of projected power, and cruisers are ideal examples of aerial defense and signal denial.

Thus, the potential effectiveness of the blockading strategy remains largely unchanged, but the factors that may impact its effectiveness have not necessarily remained the same. While naval blockades remain an important strategy for sapping hostile capabilities, the means by which they are made effective have evolved.

The next steps in this analysis will involve comparing and contrasting the factors impacting a blockade's success in previous eras versus factors that impact blockading success today. With regard to evaluating the effectiveness of a blockade, three questions apply. (1) Did/does the blockade achieve the operational goal or intended outcome for which it was imposed? (2) Did/does the blockade

contribute to the overall strategic success, or were/are extraneous factors responsible for the improvements in the situation? (3) Were/are the costs and resources expended worth the ends achieved?<sup>44</sup> Our goal here is to provide higher-level guidance applicable to a wide array of circumstances, both retrospective and prospective, rather than an exhaustive breakdown of past incidents. In the consideration of blockades from previous eras, five factors can be identified as the predominant influences on the success or failure of a blockade.

1. Asymmetry of naval strength between the blockading force and the opposing force
2. Types of naval forces
3. The willpower to maintain the blockade
4. Suitability of the region for blockade
5. Logistics and resupply

#### *Asymmetry of Naval Strength*

The foremost, and perhaps most obvious, factor influencing blockade success is asymmetry in naval power between the opposing sides. An effective blockade is plausible only in cases in which the blockading power maintains naval forces significantly larger than those of the navy being contained. This asymmetry allows the stronger force to contain the lesser force largely by its mere presence, or else the defending force would offer some kind of challenge, perhaps even coming out and meeting the blockading force in open battle. A superior force keeps the smaller force contained and limits the latter's strategic and tactical options.

Asymmetry also dictates the options for the type of blockade. A close blockade demands a significant expenditure of resources, which in turn requires having more resources to commit. The more closely matched the naval forces, the less able one side would be to maintain such a blockade except by tethering a significant portion of its total forces to one area and straining its supply lines, all while exposing those blockading forces to counterattack.

An important historical example regarding asymmetry of naval forces is the Union blockade of the Confederacy during the Civil War. The Union maintained the stronger fleet, by far.<sup>45</sup> This asymmetry in favor of the Union blockading forces had several interesting consequences relevant to any evaluation of its success. Some historians note that, despite the asymmetry, the blockade was able to maintain only limited effectiveness; for example, blockade-running kept the Confederacy supplied with ammunition.<sup>46</sup> Therefore asymmetry in naval power alone may not determine success, as even significant asymmetry overall may be wasted if the blockading force spreads itself too thinly along the

blockade perimeter. However, the Union blockade ultimately proved effective in other ways; it crippled exports, disrupted regional shipping, and prevented importing sufficient goods critical to infrastructure.<sup>47</sup> In this sense, even a blockade that can stop some but not all blockade-runners still can be effective enough at denying or disrupting trade to cripple the blockaded economy. Such an outcome requires sustained blockading that is possible only with a substantial asymmetry in naval forces.

Other strategic and tactical options become available to a highly superior blockading force. For example, a strong blockading force may be able to choose which blockade-runners to allow through. Permitting passage of luxury items but not critical operational supplies such as ammunition or weapons can cause demoralization and discontent within the civilian population.<sup>48</sup> A superior force also can choose which goods and commodities to blockade against, and other aspects of how to execute the blockade. Energy sources could be targeted if the nation is not able readily to replenish those losses from internal sources, or the blockading force more broadly could alter the economic impact asymmetrically by denying only importing or only exporting. The combined point is that a blockade can be targeted against specific economic goods or exchanges to create either a strategic or a morale asymmetry that the superior force can use to its advantage.

In sum, asymmetry of naval forces has a significant impact on blockade effectiveness and options for the blockading fleet. Yet asymmetry alone is not sufficient to determine success.

### *Types of Naval Forces*

A factor related to the relative power of naval forces is the types available. The Civil War example highlights how the types of forces the Union had available for its blockade influenced strategy and tactics on both sides.<sup>49</sup> The Confederacy could not match the Union in sheer naval strength, but its navy did use mines to prevent Union access to Mobile Bay.<sup>50</sup> This gave Southern ships a chance to reach the port in safety—if they managed to pass through the minefield themselves, amid other complexities involved in mine warfare.<sup>51</sup> In this case, the smaller fleet could not match the larger in building ships, but it could employ a defensive strategy that provided an advantage, as its ships knew the safe path through the minefield. Against a larger and more powerful fleet that seeks to keep enemy forces contained, a smaller fleet still may be able to take action; it is a matter of how. The materials to which the smaller fleet has access may determine the basis on which it builds its defensive strategy.

This principle applies to the stronger fleet as well in choosing its strategy. Blockades only evolved from the close-proximity type into more-advanced versions because of ships' improved technological capabilities. If a fleet could apply copper to its ships' bottoms, it could sustain those ships at sea longer, which enabled it to

sustain the blockade longer and at greater distances.<sup>52</sup> Thus, the characteristics of its fleet can impact significantly the choices available to a blockading power.

This principle extends to modern naval forces, and in intriguing ways. For example, an exceptionally powerful fleet may have modern destroyers and aircraft carriers, but unless it has sufficient numbers of wooden-hulled minesweepers the opposition's best defense becomes less-advanced ships and well-mined passages. Even if two fleets are matched equally in modern destroyers, mining remains an important tactic if only one fleet possesses sufficient numbers of minesweepers to clear a path.<sup>53</sup> This principle regarding fleet composition applies likewise if one fleet has more aircraft carriers while the opposing fleet has more submarines, or one fleet has more ballistic-missile submarines while the other has more fast-attack submarines. The two fleets' base compositions, including both their strengths and weaknesses, enable different blockading strategies and become a critical factor determining blockade success. Thus, the types of naval forces in a fleet represent another form of asymmetry that, while likely to reflect and confirm force-strength disparities, could be used to great advantage by fleets maintaining either an offensive or defensive position during a blockade.

### *Willpower*

The third consideration is the willpower to maintain the blockade. A blockade is effective only as long as it actually is maintained. In the absence of some decisive military action or enemy capitulation, how long is the blockading force willing to dedicate the resources necessary to continue the effort? Imposing and maintaining a total blockade on even a tight perimeter require intense motivation, and the need therefor would increase significantly if the blockade were applied to an ever-larger region. The willpower to maintain the blockade must exceed the perceived costs of expending whatever resources are necessary to maintain the blockade.

Of course, such costs are relative and depend on one's perception of the cost-benefit equation. Although the resources needed to support a blockade may be quantifiable, the costs associated with expending those resources on a blockade constitute the critical factor, and perceptions of that calculus could be influenced by a wide variety of factors. One highly influential factor is the blockade's perceived value to ongoing operations or national security. The Union blockade required the dedication of substantial resources over a period of years, yet the determination to maintain the blockade remained largely intact.<sup>54</sup> If the Union had suffered significant naval losses in other, direct clashes while it was busy maintaining the blockade, this might have affected its willpower to maintain the blockade; however, in the absence of such losses its willpower remained largely undamaged and it was able to continue.

The value of the blockade—or, to look at it from another direction, the value of the thing to be blockaded—even might supersede asymmetry as a factor making

a blockading force willing to maintain the effort. The American quarantine of Cuba during the Cuban missile crisis was predicated on Cold War imperatives that made permitting nuclear missiles to reach Cuba unthinkable, so the willpower to maintain the blockade likely exceeded any consideration regarding resource expenditure.<sup>55</sup> A more recent example of the significance of willpower is the blockade by the Sri Lankan navy (SLN) of the Liberation Tigers of Tamil Eelam (LTTE).<sup>56</sup> For decades, SLN bases along the northern and eastern coasts of Sri Lanka suffered aggressive attacks—swarm, suicide-boat, and amphibious—by the highly capable and sophisticated LTTE.<sup>57</sup> But in 2006 a new Sri Lankan government came into power whose leadership believed that the only way to defeat the LTTE was through the aggressive application of naval force—at any cost. The SLN’s approach included the use of intelligence to target LTTE cargo vessels that transported arms and supplies; introduction of the “small boat concept,” which involved countering the LTTE’s swarm tactics with an overwhelming number of small, high-speed, heavily armed patrol craft; the use of land-based radar sites to detect and disrupt LTTE activities; and a naval blockade. The blockade was aimed at cutting off the LTTE’s seaward escape and supply routes; it focused primarily on the LTTE’s headquarters in Jaffna. Although success came with a considerable loss of life (military and civilian) and SLN naval vessels, the SLN’s commitment to using overwhelming naval force against the LTTE, including maintaining the blockade, ultimately enabled the Sri Lankan government to prevail after nearly thirty years of civil war.

Essentially, willpower as a factor in determining the strength of a blockade is tangential to the asymmetry of naval forces. However, these examples show how prominent it can be in determining a blockade’s success.

### *Suitability of the Region*

The fourth factor is the suitability of the region for blockading. This determination is straightforward, dictated more by geography and navigational factors than anything else. Variables include the presence and nature of islands, straits, tidal forces, and the like. This factor itself can go a long way toward determining whether a blockade will be attempted at all and dictating how one may proceed.

For example, blockading a region that has only one method of ingress and egress offers a simple scenario; blockading a small archipelago remains relatively simple. But blockading entire island chains, such as those spread across the South Pacific, is much more complicated, and thus difficult.

In past eras, geographical factors by themselves could determine whether a blockade would be successful. This was especially the case when changing winds were likely to provide opportunities for a blockaded fleet to evade the blockaders.

### *Logistics and Resupply*

The sustainability of a blockade rests largely on matters of logistics and resupply. A blockade is not a single decisive naval action but instead depends on the ability of the blockading force to maintain its posture over a longer term. The dimensional model identifies *near* and *far* as two types of blockade, where those terms refer to the distance of the theater from the blockading country.<sup>58</sup> Greater distance complicates the logistics of resupply, making it more difficult to maintain the blockade.

Naval technology is a significant factor with regard to logistics. When evaluating the challenges of imposing and maintaining blockades across different historical eras, such issues as the pluses and minuses of sail versus steam must be considered.

### MODERN FACTORS THAT IMPACT BLOCKADE EFFECTIVENESS IN THE TWENTY-FIRST CENTURY

Not all previously relevant factors have become irrelevant in modern naval operations; the development of nuclear weapons did not eliminate the use of small arms, and the shift to fourth-generation warfare did not eliminate the relevance of all tactics used previously.<sup>59</sup> Likewise, earlier blockading factors and tactics continue to exist, yet their potential influence must be considered in the context of conditions that have developed in the modern era. These factors relating to blockading, by their advance in parallel with other technological developments, changed naval operations as they transitioned from the age of the sail to the age of steam. Modern naval operations must incorporate factors that historical naval operations did not need to consider in their decision-making processes.

The following five additional factors that could impact the success of naval blockades must be addressed.

1. Enforcement rules applied
2. International cooperation
3. Self-sufficiency of the blockaded region
4. Aerial dimension
5. Signal dimension

Analysis of the enforcement rules in use constitutes a direct application of the enforcement model, which argues that the effectiveness of the blockade can be measured by the treatment of blockade-runners. For example, paper blockades could prove largely ineffective if blockade-runners ignore the rules entirely—as they most likely will; in contrast, if someone knows that running a blockade carries an imminent risk of attack, that immediate threat provides a deterrent effect that contributes to the blockade's success. In essence, the success of a blockade

depends on how effectively the blockade can stop runners, and stopping blockade-runners relies on the enforcement rules the blockading force applies.

Another, sometimes underappreciated factor involves international cooperation, especially important given that globalization has led to a more interconnected world and greater international traffic on the open seas. As one consideration, for an international blockade to be strictly legal, the UN Security Council must approve it. Another element of international cooperation—or the lack thereof—involves the other countries in the vicinity of the blockaded region. A blockade is going to impact nearby states indirectly even if its scope does not cover their territorial waters. Shipping routes will be disrupted and the potential for incidents will increase dramatically, whether those incidents arise from misidentification of ships or the sheer proximity of operational naval forces. Denial of access to neighboring states' territorial waters also could create problems for the blockading force by complicating its own sources and lines of resupply. There are myriad means of indirect interference by which nearby states, if they choose to exercise them, can complicate and limit the blockade. Thus, their consent becomes a significant factor in determining the blockade's success.

A third factor involves the self-sufficiency of the blockaded region. Especially in the historical examples, the effectiveness of a naval blockade was influenced by the extent to which the region depended on access to ports and shipping by sea for goods and supplies. The more self-sufficient the region is, or the more it has access to alternative sources of supply by land, the less effective the blockade will be. This self-sufficiency also could impact what types of goods or trade a blockade can deny most effectively. If the region largely depends on imports for a certain commodity, such as oil, then blockading those shipping routes known to be used to resupply oil could lead to highly successful presence or martial blockades without requiring a total blockade.<sup>60</sup> Such strategic decisions have significant implications on how a blockade would be enacted, so these factors should be considered proactively when determining which enforcement rules to apply during the blockade.

An additional aspect of self-sufficiency is the land-based defensive capabilities of the blockaded region. Specifically, many evaluations of and projections from historical blockades neglect to consider how the aerial dimension might have affected those operations, simply because aerial forces had not been invented at the time. But modern analysts must consider aerial forces (aircraft and missiles) as a critical factor in evaluating the potential effectiveness of a blockade. Essentially, whereas regional self-sufficiency might allow a blockaded region to *withstand* a blockade by surviving the deprivation of resources, aerial offensive and defensive elements might allow it to *break* the blockade and restore the flow of goods. These considerations would complicate significantly the challenge of blockading an area such as mainland China or the continental United States.

Land-based defenses delivered by air provide the blockaded region an effective military option to break the blockade and prevent it from achieving its objectives. Therefore, for a modern blockade to be effective the aerial dimension must be considered, and those forces must be either effectively suppressed or otherwise made irrelevant. Aerial factors represented a significant technological advancement of the twentieth century, during which naval operations advanced from the last vestiges of the age of sail into the age of steam and then into the age of air, as the skies themselves became a significant part of naval operations. Modern forces must continue to account for this dimension.

But the twenty-first century has seen yet another evolution in naval forces—bringing on the age of signal.<sup>61</sup> Denying communications and other signals to an adversary's naval operations can be as detrimental to its efforts as the presence of a superior naval force in the region. The effectiveness of any modern blockade could depend on the signal-disruption capabilities of the adversary. Even superior fleet forces would not be sufficient to establish sea control over a region if the comprehensive sea-denial capabilities of the adversarial force are sufficient—an especially relevant consideration with the recent reversion to a focus on great-power competition.<sup>62</sup> Among the components of naval operations, this is the aspect most likely to expand its influence during the twenty-first century. Anyone considering attempting a blockade in the future will have to evaluate carefully the growing role of signal denial as a critical component of military operations.

The five factors discussed here provide a useful framework to be used when evaluating or planning a blockade, but their relative relevance and importance depend greatly on the specific contexts in which they are applied. Therefore the final section will consider two sets of recent events during which the possibility of a blockade has been part of the international discussion.

## TWO TWENTY-FIRST-CENTURY SCENARIOS POSSIBLY REQUIRING A NAVAL BLOCKADE

There are at least two ongoing international situations to which naval blockades have been discussed as possible solutions: the dispute over the Spratly Islands in the South China Sea, and the efforts to discourage North Korea from pursuing its nuclear-weapons program. The discussion that follows does not constitute recommendation of a particular course of action, but rather a practical analysis of the usefulness of a blockade as a naval strategy to address issues occurring in the modern era. The evaluation of these scenarios will touch on many of the factors addressed previously concerning the general effectiveness of naval blockades.

### *The Spratly Islands Dispute*

The dispute over the Spratlys concerns a highly contested intersection of waters surrounded by many different nations; at its center is an island chain in the South

China Sea over which multiple nations—including China, Taiwan, Malaysia, Brunei, the Philippines, and Vietnam—claim some degree of sovereignty. The fact that the islands contain no arable land, have no indigenous inhabitants, and offer only a limited supply of drinkable water is insufficient to avoid disputes among the regional states; while there are multiple reasons for this competitive approach, they largely concern the economic and strategic value of the area.<sup>63</sup> Additionally, American naval vessels' patrolling of the area to exert the freedom of the seas has led to international expressions of concern.

Would a naval blockade of the area be a suitable means of enforcing the international will? China has expressed interest in militarizing these islands by building air bases on them, stationing missiles there, or both. Would denying access to the islands via blockade prevent the introduction of military assets, and thus the islands' militarization? An evaluation of the possible effectiveness of a blockade in this scenario can employ the theories and factors discussed earlier.

Asymmetry is the first consideration. The applicability of this aspect depends on the nations involved in the blockade. For the sake of discussion, let us assume that the other parties hold fast and the dispute becomes a matter simply between the United States and China. Current American naval power provides sufficient forces to enact a blockade anywhere in the world. Other factors then determine whether such a blockade would last a day or a decade. Foremost, the willpower to maintain the blockade would have to be strong. The Spratly Islands are an archipelago in the middle of open seas, so geographically the area is not well suited to a blockade, and they are more than an ocean away from our home ports, so the logistics of resupply would be complicated. According to the classical factors relevant to blockades, therefore, imposing and maintaining a blockade of the Spratly Islands would be impractical.

Then more-modern factors must be considered. The self-sufficiency of the blockaded region is irrelevant because no one lives on the islands; however, if China decided to keep a permanent military presence there, its self-sufficiency would be near zero, as the installation would run out of fresh water in days. In the latter scenario, a blockade could be highly effective, with the personnel on the islands forced to abandon them.

International support, especially in these contested waters, is another important consideration. Our presumption for the sake of argument was that other nations hold fast, but it would be foolish to assume that dozens of nations would take no action of any kind. With so many nations involved, the logistical hurdles would become impossible to navigate if even half the interested parties decided to act indirectly to make the blockade more challenging.

Whether this blockade would be successful, then, would come down to the rules enforced, which likely would determine and drive the course of action. Open

warfare between the United States and China over uninhabited islands is unlikely, which means that the blockade employed likely would be of either the paper or the presence type; blockade-runners could ignore either approach easily unless a party intervened with force. Thus, a blockade of the Spratly Islands likely would be a protracted and complicated endeavor that could be made effective only during a full-scale war—which emphasizes the futility of the suggestion, as in such a case the Spratly Islands would be reduced to an afterthought.

### *North Korea*

The second scenario involves a blockade of North Korea as a means of forcing a cessation of its nuclear-weapons program. This would be an extreme step—an attempt to use a naval blockade to enforce international sanctions that North Korea actively has attempted to circumvent for years.<sup>64</sup> The asymmetry of naval forces is unquestionable, measured on any dimension. American willpower to stop the North Korean nuclear threat would be resolute. The geography makes the region suitable for blockade, in that North Korea has only two coasts, consisting of 1,550 miles of coastline. Logistics and resupply could be issues, although the burden would be reduced greatly because the United States operates multiple naval bases in Japan, in North Korea's immediate vicinity.

Considering the longtime alliances between the United States and South Korea and the United States and Japan, international cooperation likely would favor the United States. However, Russia and China share a significant land border with North Korea, and the influences they might exert are also critical to consider. If the Russians and Chinese were willing to supply North Korea via this land border, a naval blockade would prove wholly ineffective—"blockade-runners" simply would have found another avenue left open to them by the rules of the enforced blockade.

As with the Spratly Islands scenario, the enforcement rules become a critical concern. Those rules would depend on international cooperation, the willpower of the blockading force, and asymmetry in naval power, among other factors. In this sense, the enforcement rules are not just a theoretical classification but a summary consideration leading to the final course of action. Imposing and maintaining a total blockade, including an aerial blockade to stop resupply via the land border, would require war, possibly with multiple nations.

Both the Spratly Islands and North Korea scenarios present a complex array of factors, a complete evaluation of which is beyond the scope of this paper. However, the decision whether to employ a naval blockade should be made by assessing seven key factors: asymmetry, willpower, suitability, logistics, international cooperation, self-sufficiency, and enforcement rules. Ultimately, the key factor is enforcement of the blockade, especially with regard to how blockade-runners are

treated. Despite favorable assessment across the other factors, without the ability to enforce the blockade, it is unlikely to be successful.

### BLOCKADES: FROM FARRAGUT TO THE FUTURE

Dr. Vego has written, “The successful conduct of naval warfare depends on one’s ability to obtain and maintain or deny control of a part of the maritime theater.”<sup>65</sup>

This article has revisited the blockade as a naval strategy that exists at a lower hierarchical level than armed conflict, but that may evolve into armed conflict. Despite the blockade’s prominent use throughout naval history, there has been little evaluation of how it would apply in the modern era. It is especially important to consider whether the differences between historical cases and modern scenarios can highlight changes over time that would expose shortcomings in current naval strategy.

Although this article has addressed numerous topics, ranging from legality to the development of the enforcement model, and has provided practical comparisons, just as notable are the many topics not addressed in sufficient depth. For example, the evolving roles of airpower and signals intelligence represent complicated topics warranting more in-depth examination. Likewise, additional efforts should examine the importance of domestic support for making naval blockades successful; the potential for electronic banking to sap the effectiveness of physical blockades; and, in contrast, the support that electronic banking could lend to the application of sanctions, making them more than mere paper blockades.<sup>66</sup>

Ultimately, the naval blockade continues to be a relevant part of modern naval strategy, but conducting one is a complicated endeavor. While much has changed since the days of sailing ships, the underlying principles of naval blockades remain as important today as they were to Admiral David G. Farragut during the Civil War. However, too many evaluations of naval blockades rely on specific and historical examples to determine the relevant factors, which limits their value to those conducting naval decision-making today. In short, if blockades are to be considered an important aspect of naval operations, we need to develop and employ theories that enable the practical application of blockades today, not just their historical consideration.

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#### NOTES

1. James E. Valle, *Rocks and Shoals: Naval Discipline in the Age of Fighting Sail* (Annapolis, MD: Naval Institute Press, 1996).
2. Colin Martin and Geoffrey Parker, *The Spanish Armada*, rev. ed. (Manchester, U.K.: Manchester Univ. Press, 1999).
3. Tom Finn, “Qatar Vows No Surrender in Gulf Crisis as U.S., Kuwait Seek Solution,” *Reuters*, 8 July 2017, [reuters.com/](https://www.reuters.com/).
4. Covey Oliver, “International Law and the Quarantine of Cuba: A Hopeful Prescription for Legal Writing,” *American Journal of*

- International Law* 57, no. 2 (April 1963), pp. 373–77.
5. Milan Vego, *Maritime Strategy and Sea Control: Theory and Practice*, Cass Naval Policy and History 55 (London: Routledge, 2016).
  6. George Tsebelis, “Are Sanctions Effective? A Game-Theoretic Analysis,” *Journal of Conflict Resolution* 34, no. 1 (1990), pp. 3–28; Simon Chesterman and Beatrice Pouligny, “Are Sanctions Meant to Work? The Politics of Creating and Implementing Sanctions through the United Nations,” *Global Governance* 9, no. 4 (2003), pp. 503–18.
  7. Berta E. Hernández-Truyol, “Embargo or Blockade: The Legal and Moral Dimensions of the U.S. Economic Sanctions on Cuba,” *Intercultural Human Rights Law Review* 4 (2009), pp. 53–85; Paul A. Shneyer and Virginia Barta, “The Legality of the U.S. Economic Blockade of Cuba under International Law,” *Case Western Reserve Journal of International Law* 13 (1981), pp. 451–82.
  8. Shneyer and Barta, “The Legality of the U.S. Economic Blockade.”
  9. U.N. Charter art. 41, para. 1.
  10. *Ibid.*
  11. *Ibid.*, art. 42, para. 1.
  12. Louise Doswald-Beck, “San Remo Manual on International Law Applicable to Armed Conflicts at Sea,” *International Review of the Red Cross* 35, no. 309 (1995), pp. 583–94.
  13. *Ibid.*
  14. Louise Doswald-Beck, ed., *San Remo Manual on International Law Applicable to Armed Conflicts at Sea* (Cambridge, U.K.: Cambridge Univ. Press, 1995), pt. 2, sec. 1, para. 14.
  15. *Ibid.*, pt. 3, sec. 5, para. 67.
  16. U.S. Navy, U.S. Marine Corps, and U.S. Coast Guard, *The Commander’s Handbook on the Law of Naval Operations*, NWP 1-14M / MCTP 11-10B / COMDTPUB P5800.7A (August 2017) [hereafter *Commander’s Handbook*], sec. 7.7.
  17. *Ibid.*, sec. 7.7.1.
  18. *Ibid.*, sec. 7.7.2.
  19. *Ibid.*
  20. Thomas A. Rowden, “Commentary—Sea Control First,” U.S. Naval Institute *Proceedings* 143/1/1,367 (January 2017), available at usni.org/.
  21. *Ibid.*
  22. Ching Chang, “The Nature of Sea Control and Sea Denial,” *Center for International Maritime Security*, 12 September 2018, cimsec.org/.
  23. *Commander’s Handbook*, sec. 7.7.2.
  24. Barry M. Gough, “Maritime Strategy: The Legacies of Mahan and Corbett as Philosophers of Sea Power,” *RUSI Journal* 133, no. 4 (1988), pp. 55–62; Milan Vego, *Naval Classical Thinkers and Operational Art*, NWC 1005 (Newport, RI: U.S. Naval War College, 2009).
  25. Vego, *Maritime Strategy and Sea Control*.
  26. Bernard Brodie, *A Layman’s Guide to Naval Strategy* (Princeton, NJ: Princeton Univ. Press, 1942); Julian S. Corbett, *Some Principles of Maritime Strategy* (London: Longman, 1918).
  27. Arthur M. Shepard, *Sea Power in Ancient History: The Story of the Navies of Classic Greece and Rome* (Boston: Little, Brown, 1924).
  28. Vego, *Maritime Strategy and Sea Control*.
  29. David T. Cunningham, “Naval Blockade: A Study of Factors Necessary for Effective Utilization” (master’s thesis, Army Command and General Staff College, 1987).
  30. Corbett, *Some Principles of Maritime Strategy*.
  31. Vego, *Maritime Strategy and Sea Control*.
  32. *Ibid.*
  33. A. T. Mahan [Capt., USN], *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land: Lectures Delivered at U.S. Naval War College, Newport, RI, between the Years 1887 and 1911* (Boston: Little, Brown, 1911).
  34. Brodie, *A Layman’s Guide to Naval Strategy*.
  35. Gough, “Maritime Strategy.”
  36. Vego, *Maritime Strategy and Sea Control*.
  37. Bruce A. Elleman and S. C. M. Paine, conclusion to *Naval Blockades and Seapower: Strategies and Counter-strategies, 1805–2005*, ed. Bruce A. Elleman and S. C. M. Paine, *Cass Naval Policy and History* 34 (London: Taylor & Francis, 2006), p. 250.
  38. *Ibid.*

39. *Commander's Handbook*, sec. 7.7.2.
40. *Ibid.*
41. *Ibid.*
42. *Encyclopaedia Britannica*, 11th ed., s.v. "Pacific Blockade."
43. "IMO Profile," *UN-Business Action Hub*, business.un.org/. The number itself is surprising; ask a random person what he or she would estimate as the percentage of world trade involving the sea and the answer almost certainly will be far less than 90 percent. "Out of sight, out of mind" explains most of this phenomenon. The more formal version of this idea is the *availability heuristic*, which is the perception that if something can be immediately recalled, then it must be important, or at least more important than other possibilities. Norbert Schwarz et al., "Ease of Retrieval as Information: Another Look at the Availability Heuristic," *Journal of Personality and Social Psychology* 61, no. 2 (August 1991), pp. 195–202; Amos Tversky and Daniel Kahneman, "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology* 5, no. 2 (September 1973), pp. 207–32; Norbert Schwarz and Leigh A. Vaughn, "The Availability Heuristic Revisited: Ease of Recall and Content of Recall as Distinct Sources of Information," in *Heuristics and Biases: The Psychology of Intuitive Judgment*, ed. Thomas Gilovich, Dale Griffin, and Daniel Kahneman (New York: Cambridge Univ. Press, 2002), pp. 103–19. Shipping that goes by sea is not readily visible unless an observer lives near the coastline; whereas alternative methods, most notably air and ground transportation, are seen every day. This relative prevalence creates a perceptual asymmetry that leads people to estimate a far lower dependence on the sea. Additionally, a significant portion of the shipping route lies at sea. The origination and final destination points of the goods are not likely to involve shipping immediately, which makes much of the route itself less visible to the naked eye.
44. Elleman and Paine, conclusion to *Naval Blockades and Seapower*, p. 250.
45. Raimondo Luraghi, *A History of the Confederate Navy*, trans. Paolo Enrico Coletta (Annapolis, MD: Naval Institute Press, 1996).
46. Stephen R. Wise, *Lifeline of the Confederacy: Blockade Running during the Civil War* (Columbia: Univ. of South Carolina Press, 1988), p. 226.
47. David G. Surdam, "The Union Navy's Blockade Reconsidered," *Naval War College Review* 51, no. 4 (Autumn 1998), pp. 85–107.
48. Robert B. Ekelund Jr. and Mark Thornton, "The Union Blockade and Demoralization of the South: Relative Prices in the Confederacy," *Social Science Quarterly* 73, no. 4 (1992), pp. 890–902.
49. William N. Still Jr., "A Naval Sieve: The Union Blockade in the Civil War," *Naval War College Review* 36, no. 3 (May–June 1983), pp. 38–45.
50. E. Michael Golda, "The Dardanelles Campaign: A Historical Analogy for Littoral Mine Warfare," *Naval War College Review* 51, no. 3 (Summer 1998), pp. 82–96.
51. Scott C. Truver, "Taking Mines Seriously: Mine Warfare in China's Near Seas," *Naval War College Review* 65, no. 2 (Spring 2012), pp. 30–66.
52. John R. Harris, "Copper and Shipping in the Eighteenth Century," *Economic History Review* 19, no. 3 (1966), pp. 550–68.
53. For a more thorough and recent review of mine-related issues, see Joshua Edwards, "Preparing Today for the Mines of Tomorrow," *Naval War College Review* 72, no. 3 (Summer 2019), pp. 40–61.
54. For more-complete but somewhat conflicting accounts of the Union blockade, see Surdam, "The Union Navy's Blockade Reconsidered," and Still, "A Naval Sieve."
55. Graham T. Allison, "Conceptual Models and the Cuban Missile Crisis," *American Political Science Review* 63, no. 3 (1969), pp. 689–718.
56. Justin O. Smith, "Maritime Interdiction in Counterinsurgency: The Role of the Sri Lankan Navy in the Defeat of the Tamil Tigers" (master's thesis, Naval Postgraduate School, 2010).
57. Ahmed S. Hashim, *When Counterinsurgency Wins: Sri Lanka's Defeat of the Tamil Tigers* (Philadelphia: Univ. of Pennsylvania Press, 2013).
58. Elleman and Paine, conclusion to *Naval Blockades and Seapower*, p. 250.
59. William S. Lind et al., "The Changing Face of War: Into the Fourth Generation," *Marine*

- Corps Gazette* 73, no. 10 (October 1989), pp. 22–26.
60. Gabriel Collins, “A Maritime Oil Blockade against China: Tactically Tempting but Strategically Flawed,” *Naval War College Review* 71, no. 2 (Spring 2018), pp. 49–78.
  61. Robert C. Rubel, “Mission Command in a Future Naval Combat Environment,” *Naval War College Review* 71, no. 2 (Spring 2018), pp. 109–21.
  62. Jeffrey E. Kline, “Impacts of the Robotics Age on Naval Force Design, Effectiveness, and Acquisition,” *Naval War College Review* 70, no. 3 (Summer 2017), pp. 63–77.
  63. As to the surface ridiculousness of valuing these islands, consider the so-called Whisky War between Canada and Denmark over Hans Island, located between Ellesmere Island and Greenland. While the matter constitutes a legitimate international dispute, the militaries of each nation, in addition to “occupying” the island by the sequential planting of flags, have established a practice of leaving bottles of liquor for the opposing force. This scenario and this behavior have nothing to do with blockades, per se, but the sheer ridiculousness of expressing a military-territorial dispute by exchanging liquor should be mentioned as many times as possible in the annals of military history. For a media report, see Dan Levin, “Canada and Denmark Fight over Island with Whisky and Schnapps,” *New York Times*, 7 November 2016. On the more complicated reasons the states involved vie for the Spratlys, see Mark E. Rosen, “China Has Much to Gain from the South China Sea Ruling,” *The Diplomat*, 18 July 2016, [thediplomat.com/](http://thediplomat.com/).
  64. Elizabeth Rosenberg and Neil Bhatiya, “Busting North Korea’s Sanctions Evasion,” *Center for a New American Security*, 4 March 2020, [cnas.org/](http://cnas.org/).
  65. Milan Vego, *Introduction to Naval Warfare*, NWC 1032B (Newport, RI: U.S. Naval War College, 2011).
  66. Emre Hatipoglu and Dursun Peksen, “Economic Sanctions and Banking Crises in Target Economies,” *Defence and Peace Economics* 29, no. 2 (2018), pp. 171–89.