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OPERATIONAL ART OF MARITIME STRAITS

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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29 October 2008

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ABSTRACT

The world economy is growing more reliant on the volume and security of traffic in the maritime straits. This paper examines operational factors as they pertain to the uniqueness of maritime straits. It also suggests that due to the operational factors of some straits, only a preemptive strike against belligerent forces may guarantee their strait integrity. A case study applies analyses to a Strait of Hormuz scenario. Finally, the paper recommends a combatant commander review and revision of courses of action under an Operational Art lens, focused through the Space-Time-Force analysis provided.

INTRODUCTION

Nature of the Problem

The Operational Art factors of Space-Time-Force in maritime straits are more difficult to explore in the same depth or detail as they are in land warfare.¹ Maritime straits are a unique geography, or better described as *hydrography*, in the study of Operational Art. The interrelationship between Space, Force, and Time in closing maritime straits is a synergistic force favoring the belligerent. Given the expanding role of asymmetric warfare in littoral sea control and the growing importance of strait integrity in the global economy – understanding the intricacies of operational factors in straits is vital to the Commander’s employment of sound Operational Art.

Thesis

The peculiarities of strait closure and resulting drastic effects in the modern global economy must be examined thoroughly in the Space-Force-Time construct to understand the power balance vital to maintaining sea-lines of communication and maritime interests of the United States and its allies. Due to the speed at which some straits can be closed and the resulting global effects, the only guarantor of integrity in those straits is to preemptively strike a belligerent’s forces.

Impact

If this thesis is correct, a new array of difficult problems is revealed. The timeline from actionable intelligence to belligerent’s effective strait closure is very short, if it even exists. The time that is available is not sufficient for debating reactionary plans or new

¹ Milan Vego, “Dangerous waters: Ignoring operational art at sea could doom U.S. Maritime strategy,” *Armed Forces Journal* (October 2007), <http://www.armedforcesjournal.com/2007/10/2955444> (accessed 22 September 2008).

course of action (COA) development. But, the decision to preemptively strike may result in many unintended consequences, the most likely—war. The two extremes: reacting to strait closure and employing a preemptive-strike leave the combatant commander few middle-ground alternatives.

Demonstration

This paper examines the unique operational art features of straits and steps beyond the traditional land-based Space-Time-Force approach. Second, a generic Space-Time-Force construct is suggested from which any strait may be bound for combatant commander's analyses. Third, the lessons will be applied to current day Iran and the Strait of Hormuz with detailed analysis. Fourth, several counterarguments to the thesis will be addressed. And finally, recommended courses of action are provided for the strategic and operational commanders. This paper is supported solely from open source data.

DISCUSSION

All Unified Commanders Affected

Donna J. Nincic reports 80 percent of world trade and 95 percent of U.S. international trade is by ocean transit. Within 20 years 2 billion tons of cargo will be shipped by sea, doubling today's numbers.² The last three decades of expanding economies worldwide have increased the global importance of maintaining free and open straits. Of the hundreds of maritime chokepoints on the globe, 23 straits or channels lie across international maritime

² Donna J. Nincic, "Sea Lane Security and U.S. Maritime Trade: Chokepoints as Scarce Resources," in *Globalization and Maritime Power*, ed. Sam J. Tangredi (Institute for National Strategic Studies, Washington: National Defense University, December 2002), 143-170, http://www.ndu.edu/inss/Books/Books_2002/Globalization_and_Maritime_Power_Dec_02/09_ch08.htm (accessed 26 September 2008).

trade routes and again are susceptible to influence or threat.³ These susceptible straits are grouped by Unified Combatant Command geographic responsibility in Figure 1.

USNORTHCOM	USPACOM	USSOUTHCOM	USEUCOM	USCENTCOM	USAFRICOM
Florida Straits	Makassar Strait	Panama Canal	Bosporus Dardanelles	Bab-el Mandab	Mozambique Channel
	Singapore Strait			Strait of Hormuz	
	Strait of Malacca	Windward Passage	Strait of Gibraltar	Suez Canal	
	Sunda Strait		English Channel		
	Lombok Strait		Kattegat Strait		

Figure 1. Chokepoints by Unified Combatant Command.

Understanding the Operational Art specific to straits is the first step in planning for contingencies within a Unified Commander’s Area of Responsibility (AOR).

Straits Require an Operational Art Paradigm Shift

A strait is a narrow body of water navigationally constricted on two sides and usually connects two larger bodies of water.⁴ It is a unique operating environment for many reasons. First, maritime straits are a complete joint warfare space – requiring all services’ specialties. Second, they are governed by both national and international laws, allowing unimpeded transit *within* the territorial boundaries of a country.⁵ Third, strait integrity is easily and inexpensively influenced. And fourth, actions taken within straits may have long-lasting effects.

Straits are the ultimate joint warfare spectrum. Though most seas, oceans, and littorals are Navy-centric, almost all service specialties exist within the strait. For the Navy, nuclear, diesel and mini-submarines operate freely (draft-dependent) employing torpedoes,

³ Ibid.

⁴ Milan Vego, *Joint Operational Warfare*, (Newport, RI: US Naval War College, 2007), IV-47.

⁵ NWP 1-14M, *The Commander’s Handbook on the Law of Naval Operations* (July 2007), US Navy, 2.5.3. (emphasis added)

anti-ship missiles, surface-to-air missiles, bottom mines, moored mines, and floating mines. The surface is plied by vessels ranging from Very Large Crude Carriers (VLCCs) and nuclear aircraft carriers down to explosive-packed jet skis, pirates, brigands and clandestine mine-laying vessels. For the Navy and Air Force, the skies are filled with civilian airliners, helicopters, military aircraft, reconnaissance satellites, and armed Unmanned Aerial Systems (UASs). For the Army and Marine Corps, the bordering lands are littered with Surface Launched Cruise Missiles (SLCMs), mobile transporter-erector-launchers (TELs), shore batteries, ground troops, airfields, port facilities, and various range ballistic missiles. It is arguably the most complex and dense warfare environment existing—and it requires a joint analytical lens.

Vessels transiting straits enjoy a legal right not afforded in land warfare. International law ensures all vessels may operate *within* the territorial waters of a strait-bordering country. Limits do exist on the activities of combatants while transiting, but their passage cannot be impeded.⁶ This legal right means war-loaded combatants and Marine-filled amphibious warships, while in transit passage, may pass within hundreds of yards of a bordering country's shores.

The geographic nature of straits lends them to a vulnerability not equaled in land warfare as well. Belligerent or even accidental actions occurring in a strait may have a global economic effect. The volume of commercial traffic transiting international straits is staggering as is the number of countries represented. The private intelligence service STRATFOR claims that do to “the inelastic nature of crude oil markets...a full suspension of

⁶ United Nations, *United Nations Convention on the Law of the Sea - Article 44* (1982): 39, http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf (accessed 29 September 08).

Persian Gulf oil supplies for as little as a few days could result in the doubling of oil prices.”⁷ Infringements on landlocked trade routes pale in comparison to the global impact straits have in commercial traffic.

Straits are also very susceptible to simple belligerent action. Strait influence may be achieved through Principles of War such as mass, maneuver, security and surprise; however, simplicity may be the most effective influencing principle. A fishing vessel laying one sea mine under the cover of darkness or a terrorist group announcing that mining has occurred could temporarily close the strait to almost all commercial and neutral traffic. Straits remain vulnerable to the most inexpensive, least risky and deniable methods of a belligerent force—sea mines.

Sea mining, by its nature, is almost an indefinite endeavor. To effectively close a strait, sea mines will be included in a belligerent’s combination of weapons. One of the malevolent attributes of sea mines is that even if their position is known, they will most likely shift positions or be covered before they can be neutralized. Stories continue to surface of WWII-era or older mines either washing ashore or being discovered in fishermen’s nets. Some are even being discovered during modern mine-sweeping exercises. On July 4 of this year, HMS Shoreham discovered an active WWII mine on the floor of an active shipping channel near Firth of Forth.⁸ Nearly seven decades have passed since mines were laid off Britain and they are still a threat today.

So far straits have been examined with explanations of why they stand alone in the field of Operational Art. Their critical stability and sensitivity to perturbation call for a

⁷ STRATFOR, “Global Market Brief: Flashback to the Tanker War,” 25 August 2006, http://www.stratfor.com/global_market_brief_flashback_tanker_war (accessed 29 September 2008).

⁸ BBC News, “World War II mine found in Forth,” (04 July 2008), http://news.bbc.co.uk/go/pr/fr/-/1/hi/scotland/edinburgh_and_east/7489323.stm (accessed 29 September 2008).

Space-Force-Time analysis. The following investigation will determine the balance of factors that have the strongest influence in limiting freedom of action in straits.

ANALYSIS

Space-Time-Force

“A commander’s need to fully understand the factors of space, time, and force and then balance them against the objective is as old as warfare itself.”⁹ Space, Time, and Force with respect to straits will be examined, highlighting their relationship to strait closure as well as their relationship to the opening force’s level of risk.

Space

Space, in the terms of straits, encompasses more than just the body of water. Control of the approaches, shorelines and airspace are all included. “Control of one shore, or preferably both shores, of a strait/narrows in peacetime significantly enhances one’s ability to obtain control of the adjacent sea or ocean areas shortly after the outbreak of hostilities.”¹⁰ But, unlike impeded land or air routes, shipping routes into or out of an enclosed sea are singular and cannot be substituted or bypassed.

Space is vital in staging efforts in reaction to a belligerent force. “Loss of space is usually a great disadvantage in preparing a counteroffensive.”¹¹ Denying an opening force the space required to just stage its forces can best be achieved in a layered and asymmetric fashion. Each force layer employed by the belligerent is calculated to extend control and influence in as wide an area as possible, making counterstriking forces more vulnerable to defensive measures.

⁹ Vego, *Joint Operational Warfare*, III-3.

¹⁰ *Ibid.*, II-54.

¹¹ *Ibid.*, III-13.

A belligerent's ability to close a strait, its approaches, and its coastlines neutralizes an opening force's naval power. Blue water navies, like the U.S. Navy, are most effective when they have the sea room to operate freely. "Without the ability to conduct large-scale movements...at sea...operational warfare is essentially an empty concept"¹²

Area denial is the operational goal of closing a strait, gaining the balance of space in favor of the belligerent. The key to making the operational advantage of space support strategic goals is time.

Time

Of the three operational factors, time is the only one that cannot be recovered or generated. Time is a vital factor for both sides in strait closure. The belligerent controls the *timing* of closure and attempts to extend the resulting space influence as long as possible. The opening force attempts to gain advantages in time by prepositioning forces, strong command and control, and timely intelligence.

The strait closing force will always have the advantage of timing.¹³ The ability to temporarily close or threaten a susceptible strait can occur with a simple press release or the clandestine deployment of just one sea mine. Little to nothing can be done to prevent these actions. Even with persistent intelligence "...the warning time can be reduced to hours or even minutes..." or none at all in small spaces.¹⁴

Timing allows the closer to control the flow of events, but time itself is the enabler in achieving limited objectives in strait closure. To achieve strategic goals, a closing force must be able to maintain the closure for a sufficient period of time to influence military, economic,

¹² Ibid., III-7.

¹³ Ibid., III-27.

¹⁴ Ibid., III-23.

or diplomatic powers. In high trade straits or those controlling entry or exit to an enclosed sea, little time may be required. In larger straits, or those that can be bypassed, more time may be required to grow influence to achieve limited objectives.

The opening force can mitigate the disadvantages of time and timing. First, prepositioning mine-clearing assets in theater reduces the *soak-time* a belligerent needs to influence international powers.¹⁵ The U.S. Navy has already accomplished this by forward deploying four Avenger-class minesweepers to the Fifth Fleet, a day's sail from the Strait of Hormuz. Second, timely accurate intelligence empowers an opening force to identify the volume and type of forces used in mining a strait—allowing a faster mine-clearing plan.¹⁶ Third, in addition to good intelligence, strong communications can greatly reduce the decision cycle in countering a closing force.¹⁷ Time cannot be produced nor recovered. It can only be leveraged through the balancing factors of Force and Space.

Force

The operational factor of force in straits can be examined in tangible elements (weapons, speed, numbers, etc.) and intangible elements (training, morale, discipline, etc.) The most common examples that come to mind when analyzing military force are the tangible elements. Tangible elements are the physical or numerical elements of combat power. How many mines does the closing force have in its inventory? How many methods does it have to lay mines? Are they effective? Is the strait covered by anti-ship cruise missiles? How many? At what speed can forces be deployed? Vego explains that relative

¹⁵ Ibid., III-24.

¹⁶ Ibid.

¹⁷ Ibid.

speed may be more important than individual speed.¹⁸ Just being faster than the enemy may bring effective forces to bear decisively. Another tangible element may be the quality of the weapons employed.¹⁹ Are they out-dated? Can they be nullified with technological advances?

The second force category, intangible elements, is *squishy*. These elements are difficult to measure, evaluate or compare. If a belligerent was to report, “We have mined the strait,” would its words hold value? Does the closing force have a history of empty threats? Are the will, morale, and discipline of a belligerent’s forces ready to fight? What is the mindset of the decision makers? Military leaders? Tactical forces? “The psychological element of power is perhaps the most important in combat but also the most difficult to evaluate properly”²⁰

Another intangible element that is difficult to measure is the motivation of a belligerent’s forces. Iran, for example, has two de facto navies: the Navy of Iran and the Iranian Revolutionary Guard Navy (IRGCN). They are separate forces with different motivations and chains of command. Do members of the IRGCN believe their actions are just, legitimate, ideological, patriotic, and are spurred by national honor? These intangible elements are all important in analyzing power of a force.²¹

The human element of power is the complicating factor that must be determined for an operational commander to successfully plan a campaign.²² Ignoring how the intangible elements interact with the tangible can lead to failure.

¹⁸ Ibid., III-39.

¹⁹ Ibid., III-40.

²⁰ Ibid., III-41.

²¹ Ibid., III-43.

²² Ibid., III-46.

Understanding forces specific to straits completes the operational factor foundation, leading to the analysis of factor interactions.

Factor Interactions

The Force-Space interaction can also be called *combat density*, the number of forces per given area.²³ Combat density is a simpler matter in straits than in land warfare because only a few types of forces can be employed. Even though thousands of mines and hundreds of missiles may be used in a strait's AOR, the doctrine of their employment is predictable. Since most strait control comes from mines and the ability to keep minesweeping forces at bay, a rough measure of a belligerent's combat density can be measured by estimating the number of mines, ASCMs, small surface combatants, and intelligence nodes in the strait area of operations (AOR).

The Space-Time interaction is a subtle one. In the operational art of straits, Space-Time interactions are inversely proportional between closing and opening forces. The more space a closing force controls, the more time it gains to facilitate economic pressures or make diplomatic gains before friendly forces reclaim the Space-Time advantage. Conversely, the time needed for an opening force to regain control and partially open a strait to traffic weakens its diplomatic, informational, and economic instruments of national power to opening the strait.

The Time-Force interaction almost always favors the closing force. Due to the geographic nature of straits, a bordering belligerent's forces are close enough to train, rehearse and quickly deploy. The opening force usually requires time to move its forces and

²³ Ibid., III-52.

support structure to the AOR. Although opening forces may have persistent or near-real-time surveillance capabilities near a strait, hard power is required on station to be effective.²⁴

The Space-Time-Force interaction is the apex of operational factor study in maritime straits. Understanding the integration and interrelationships of Space, Time, and Force informs the commander of the operational baseline of straits in his theater and with balance provides the best chances of success.²⁵

The Space-Time-Force interaction for strait closure is best captured in Figure 2. The dashed line represents a closing force's combat density over time. Initially the closing force

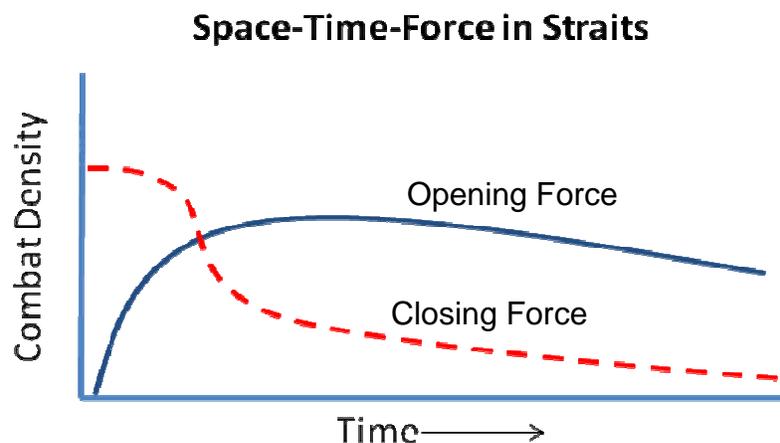


Figure 2. Space-Time Force Interaction

has the advantage in all three factors. It has closed the strait with mines and extends its control as long as possible with anti-ship cruise missiles, submarines, swarm raids, unmanned aerial systems, and theater ballistic missiles. The closing force's density drops quickly after protecting forces are struck or neutralized, leaving a diminishing mine volume.

²⁴ Ibid., III-59.

²⁵ Ibid., III-60.

The solid line represents an opening force’s low combat density initially. It then grows as forces build up and begin eliminating belligerent protective forces. The opening force density remains high over time to protect the mine-clearing forces which require a permissible operating environment.

A summary of the Space-Time-Force analysis above is provided in a generic form in Figure 3. It is not an absolute example, but stimulates the variety of factors that need to be included in a strait-closing analysis.

	Closing Force	Opening Force
Space	<ul style="list-style-type: none"> Naval bases Funnel effect of approaches Traffic density Sea-based radar coverage Land-based radar coverage Control of shores Host country or terrorist support 	<ul style="list-style-type: none"> 1 or 2 fronts Sustainability of blocked Navy Size/depth of mineable waters Insurance impacts Commodity price impacts Environment/Weather/Season UN Convention on Law of the Sea Sea Lines of Communication International Support
Time	<ul style="list-style-type: none"> Prepositioning Speed of operation Surprise Timing 	<ul style="list-style-type: none"> Time to secure MIW op-area Time to achieve MCM to acceptable probability Prepositioning Speed of command Communications
Force	<ul style="list-style-type: none"> Mine inventory/variety Mine-laying capabilities Clandestine abilities Submarines – types Surface fleet capabilities ASCMs TBMs Intelligence Training National identity Morale C² Tactical doctrine Political environment Diplomatic environment 	<ul style="list-style-type: none"> MCM risk directives SMCM assets AMCM assets Littoral forces ESG/CSG support Sea-basing National assets Organic intelligence assets Coalition assets Suppression of Enemy Air Defense

Figure 3. Operational Factors for Maritime Strait Closure

CASE STUDY

Operation CHEETAH

Iran announced January 23, 2009 that the Iranian Revolutionary Guard Corps Navy had mined the Strait of Hormuz. They also declared that any Western country wishing to transit safely through Iranian territorial waters after February 1 would be required to pay a toll. Iran also warned that attempts made to open the strait would be met with the “greatest Iranian resolve.” They are determined to halt the West’s plunder of Muslim controlled natural resources worldwide.

Intelligence officials report no irregular activity at Iran’s naval bases in the strait during the last 72 hours. Iran does maintain an inventory of several thousand naval mines and a variety of employment methods. The White House is taking the threat seriously, declaring “The free peoples of the international community will not be held hostage by an extremist and isolated government.” The President declared all military options are on the table to expeditiously nullify all threats to shipping. The George Washington battle group is currently stationed in the Arabian Gulf.

The following section will analyze *why*, and more importantly *how* Iran could make this story a reality. Variations to the scenario are also provided, illustrating the expanse of operations and impacts made possible by Iran’s advantages in Space, Time, and Force.

Why close the Strait of Hormuz?

Several reasons exist that may drive Iran to close the Strait of Hormuz (SOH). The first reason is economics. Iran’s oil revenues are the source of its internal and external political influence. Iran already consumes 40% of its own oil production, with oil exports dwindling by 2015.²⁶ Further, Iran has failed to meet its Organization of the Petroleum Exporting Countries (OPEC) quotas over the last two years.²⁷ Saudi capacity once dampened oil price fluctuations, but two years of escalating threats between Iran and the United States have taken over as the dominating pricing force, sending an additional \$20 billion a year to

²⁶ Arnon Gutfeld, “Is Iran’s ‘Oil Weapon’ a Double-Edged Sword?” *Military Technology* 31, Issue 3 (March 2007): 9, <http://www.proquest.com/> (accessed 03 September 2008).

²⁷ Ibid.

Tehran.²⁸ Iran extends its oil revenue horizon by forcing a raise in price through intimidation. A second reason is diplomatic. The United Nations Security Council has imposed three sets of penalties on Iran since 2006 to deter its efforts in securing nuclear technology.²⁹ In closing the strait, Iran can either pressure the United Nations to lift sanctions or distract the world as it moves closer to its nuclear ambitions. A third reason is national and military pride. In April, Iran's Defense Minister, Mostafa Mohammad Najjar said, "One of the strategies of the Defense Ministry is to promote our operations and combat forces' capabilities in the sea."³⁰ In May, Rear Admiral Habibollah Sayyari said, "Today the Islamic Republic's Naval Forces enjoy a high level of defensive and offensive capabilities."³¹ Iran desires to expand maritime influence in its home waters and on the international stage by either rattling sabers or actually taking action in the Strait.

How does Iran close the Strait?

Several sources describe Iran's plans with the Strait of Hormuz. U.S. government officials,³² U.S. think-tanks,³³ and the Iranian Navy³⁴ surprisingly all agree. Area denial through layered forces and asymmetric warfare is Iran's strategy. Iran will clandestinely mine the strait with submarines and unmarked commercial or private vessels. Once laid, the

²⁸ Roger Stern, "We can beat Iran – but not by fighting," *International Herald Tribune* (09 January 2008), <http://www.iht.com/bin/printfriendly.php?id=9103897> (accessed 02 September 2008).

²⁹ Eric Watkins, "Iran threatens to close Straits of Hormuz with missile launch," *Oil and Gas Journal* (11 August 2008): 32, <http://www.lexisnexis.com/> (accessed 03 September 2008).

³⁰ Bill Samii, "Iran's Naval Doctrine Stresses 'Area Denial,'" *Iran Press Service* (09 April 2006), http://www.iran-press-service.com/ips/articles-2006/april-2006/iran_weapons_9406.shtml (accessed 02 September 2008).

³¹ Fars News Agency, "Navy Commander Terms Iran's Military Doctrine Defensive," *Fars News Agency* (27 May 2008), <http://www.english.farsnews.com/printable.php?nn=8703070949> (accessed 02 September 2008).

³² Lowell E. Jacoby, "Current and Projected National Security Threats to the United States," Statement for the Record, Senate Select Committee on Intelligence (24 February 2004), <http://www.proquest.com/> (accessed 03 September 2008).

³³ Matt Hilburn, "Asymmetric Strategy," *Sea Power* 49, iss. 12 (December 2006): 14, <http://www.proquest.com/> (accessed 03 September 2008).

³⁴ Samii, "Area Denial."

minefield would be reinforced by dozens of fixed and mobile anti-ship cruise missiles. The cruise missiles will be protected by surface to air missile systems. Iran will extend and strengthen its influence by threats of ballistic missiles aimed at Israel and U.S. forces in Iraq.³⁵ The IRGCN will man its 1,000 small boats to engage in swarm attacks as needed to shape traffic flow, deny movement, and extend the minefield's lifespan.³⁶

Iran's closing doctrine takes advantage of the Space-Time interaction by quickly acting across the AOR before announcing its actions—achieving control and surprise. It also employs the right combination of weapons needed to extend the time the Strait is controlled. Iran's doctrine takes the advantages of the Force-Space interaction by maximizing its combat density at D-day. The Time-Force interaction is maximized simply by location; forces only need to traverse a few miles from protected bases to establish strait control. Finally, by utilizing a clandestine means of force employment within an existing training AOR, the IRGCN retains the advantages of timing, reliability, and economy of force.

Variations

This probable scenario is based on existing international momentum and does not include loss of life. Unfortunately, more deadly SOH closing scenarios exist and have been examined by U.S. experts and foretold by Iranian intelligence officers.

Caitlin Talmadge has studied the Iranian threat to the Strait of Hormuz and notes that “despite consensus on the importance of the strait, no open-source analysis has attempted to

³⁵ Babak Rahimi, “Iran's Missile Tests and the New Strategy of the Revolutionary Guard,” *Terrorism Focus* 5, iss. 27 (23 July 2008), <http://www.jamestown.org/terrorism/news/article.php?articleid=2374321> (accessed 02 September 2008).

³⁶ Fariborz Haghshenas, “Iran's Doctrine of Asymmetric Naval Warfare,” *The Washington Institute for Near East Policy*, 21 December 2006, <http://www.washingtoninstitute.org/templateC05.php?CID=2548> (accessed 02 September 2008).

answer” what closing and clearing the strait would look like.³⁷ She provides possible reasons for a SOH closure to include: 1) response to conventional U.S. or Israeli strike on Iranian nuclear facilities, 2) a diversionary tactic if losing a conventional war with a neighbor, and 3) a response to Iran feeling deeply threatened militarily.³⁸ Her final analysis of Space-Time-Force points to a span of 37-112 days to open the strait and a warning that Iran can affect an unimpeded closure.³⁹

Kenneth R. Timmerman provides an even graver stimulus to closing the SOH. According to Hamid Reza Zakeri, a former Iranian intelligence officer, Iran would respond to a strike on its nuclear or missile facilities by employing the sophisticated Chinese EM-53 rocket-mines to sink a U.S. aircraft carrier.⁴⁰ The IRGC would follow up closure with layered forces (mines and missiles) and asymmetric tactics, including chemical, biological and nuclear weapons, all “...to stop trade.”⁴¹

All of these scenarios are disadvantageous for the West. Iran maintains the upper hand, as long as it holds the advantage of Space-Time-Force. The largest factor, Time, more specifically *timing*, allows Iran to make the first move. It has already acquired the necessary weapons, conducted training, developed tactics, tested U.S. Navy postures, and built defenses to best leverage all three operational factors. The only way for the United States to gain the upper hand in the SOH is to achieve the time advantage by striking first, eliminating Iran’s ability to employ its area denial doctrine.

³⁷ Caitlin Talmadge, “Closing Time – Assessing the Iranian Threat to the Strait of Hormuz,” *International Security* 33, no. 1 (01 July 2008): 83, <http://www.proquest.com> (accessed 03 September 2008).

³⁸ *Ibid.*, 88.

³⁹ *Ibid.*, 115-117.

⁴⁰ Kenneth R. Timmerman, “Iran Readies Plan to Close Strait of Hormuz,” *Newsmax.com*, 01 March 2006, <http://archive.newsmax.com/archives/articles/2006/2/28/181730.shtml?s=lh> (accessed 02 September 2008).

⁴¹ *Ibid.*

Why strike first in the Strait of Hormuz?

Vego reminds us that "...the side that reacts faster than its opponent [will] generally improve its chances of accomplishing its assigned military objectives."⁴² As shown in the Time factor analysis, Iran possesses the ways and means to close the strait at the time of their choosing. Putting aside the varied stimuli for Iranian action, the resulting economic fallout and vast coalition naval response from closing the Strait of Hormuz outweigh the decision to allow closure to occur. Also shown through operational factor analysis, Iran continues to retain the advantage in Space-Time-Force. This triad of strength may only be dismantled by preemption. Talmadge echoes this conclusion due to Iran's powerful mine threat, "The best defense...is prevention."⁴³

Vice Admiral Cosgriff, 5th Fleet Commander, stated in June of this year that the United States will not allow Iran to close the Strait of Hormuz.⁴⁴ The only current means to fulfill this strategy is preemption. The only trigger for preemption is valid, timely, reliable, and actionable intelligence. To meet this challenge, the United States has up to eight Key Hole and Lacrosse imaging satellites making tens of passes a day over the Strait of Hormuz.⁴⁵ With the ability to track details like truck movements and operating weapons systems,⁴⁶ one can surmise that the U.S. decision to strike Iran preemptively is a matter under constant review.

⁴² Vego, *Joint Operational Warfare*, III-23.

⁴³ Talmadge, "Closing Time," 98.

⁴⁴ Kevin J. Cosgriff, "U.S. Navy commander vows U.S. will not allow Iran to close Strait of Hormuz," US Federal News Service, Washington, D.C., 30 June 2008, <http://www.proquest.com/> (accessed 16 September 2008).

⁴⁵ "U.S. Recon sats keep close watch on Iran, Persian Gulf," *Aerospace Daily & Defense Report* 219, no. 29 (14 August 2006), <http://www.proquest.com/> (accessed 03 September 2008).

⁴⁶ *Ibid.*

COUNTERARGUMENTS

Several convincing counterarguments to preemptive strikes exist. First, preemption is not an *any-strait* solution. Second, effective use of other instruments of national power may be successful in mitigating the threat of strait closure. And third, operational factors in a given strait change over time, either prompting or disengaging a preemption strategy.

Preemption is not viable in every strait. Some straits are not threatened by professional and well-organized state actors but by terrorist networks like Al Qaeda and Jemaah Islamiya's in the Strait of Malacca.⁴⁷ Preemptive strikes against non-state actors are considered an act of war without host country permission and made more risky based on difficult-to-achieve indications and warnings. Further, some straits' operational factors may not culminate in the Space-Time-Force advantage Iran enjoys in the SOH. It will be up to the combatant commander to determine if preemption is appropriate based on the analysis of chokepoints in his theater.

Military preemption may be staved off through successful diplomatic and/or economic means. National Security Advisor Stephen Hadley, in a statement from December 2007, commented that Iran will eventually negotiate if the international community maintains diplomatic isolation, United Nations sanctions, and financial pressure.⁴⁸ Chairman of the Joint Chiefs of Staff, Admiral Michael Mullen, stated in a press briefing in July 2008 with respect to Iran, "...I'm convinced a solution still lies in using other elements of national power to change Iranian behavior, including diplomatic, financial and international

⁴⁷ Eric Watkins, "Facing the Terrorist Threat in the Malacca Strait," *Terrorism Monitor, In-Depth Analysis of the War on Terror* 2, no. 9 (06 May 2004):8, <http://www.jamestown.org/terrorism/news/article.php?articleid=236671> (accessed 24 October 2008).

⁴⁸ Stephen Hadley, "Statement by National Security Advisor." The White House, Office of the Press Secretary, 03 December 2007, <http://www.whitehouse.gov/news/releases/2007/12/20071203-5.html> (accessed 02 September 2008).

pressure.”⁴⁹ Strong U.S. engagement with countries bordering vital straits may be the key to avoiding preemptive military action.

Operational factors in straits need constant review and analysis. Changes in the global economy, terrorism, and alliances, to name a few, will shift the advantages of Space-Time-Force in predictable and unpredictable ways. Strengthening economic ties between Iran and China may strengthen the rhetoric of Iran or may mitigate its reasons for taking action. In 2004, China and Iran signed a memorandum promising 250-million tons of liquid natural gas (LNG) and 150,000 barrels of oil a day from Iran over the next 25 years.⁵⁰ Ironically, strengthened ties between Iran and China may reduce or eliminate an Iranian threat to close the strait. Preemption in that case could strengthen the strait but weaken United States-Chinese relations. International implications of preemption will always have to be considered as international relationships ebb and flow.

Many counterarguments to preemption rely on non-military means to prevent strait closure. Combatant commanders cannot rely on other instruments of national power, but must constantly review and marry appropriate military and non-military plans to threatened straits in their AOR.

RECOMMENDATIONS

To tackle the intricacies and uniqueness of straits, combatant commander staffs should conduct a maritime strait analysis for each strait in their AOR. The study should begin with a Space-Time-Force analysis of a given maritime strait. It should then determine

⁴⁹ Michael Mullen, “DoD News Briefing with Adm. Mullen at the Pentagon.” Office of the Assistant Secretary of Defense (Public Affairs), 02 Jul 2008, <http://www.defenselink.mil/transcripts/transcript.aspx?transcriptid=4256> (accessed 02 September 2008).

⁵⁰ P.R. Kumaraswamy, “China, Russia on road to abandoning Iran,” International Relations and Security Network, 01 October 2007, <http://www.isn.ethz.ch/news/sw/details.dfm?id=17098> (accessed 16 September 2008).

the long- and short-term effects and likelihood of strait closure. The staff should then develop means to gain the advantage where required or to protect advantages already enjoyed. These efforts are followed by developing courses of action (COAs), reviewing trends in S-T-F factors and deciding whether the value of strait closure merits military intervention before or after closure. Finally, all COAs subsequently approved need to be accurately resourced, with preemption COAs requiring the most robust and persistent intelligence capabilities.

If preemption is determined as the only viable course of action, tripwires must be identified to trigger pre-planned responses. Forces assigned to a commander must be familiar with and trained to execute pre-planned responses on very short notice. The key to making preemption successful is acting before the belligerent does.

SUMMARY

Maritime straits are complicated, diverse and unique. They are vital to military and economic lines of communication and are threatened by both nation states and non-state actors. Current trends only show maritime straits growing in importance economically and politically. U.S. commanders will be increasingly challenged to maintain strait integrity in a very dynamic environment. They will succeed by employing the Operational Art of maritime straits.

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