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IRAN'S CHALLENGE TO THE U.S. IN THE MARITIME DOMAIN

by

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September 2021

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ABSTRACT

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LIST OF ACRONYMS AND ABBREVIATIONS

ASM	anti-ship missile
FAC	fast attack craft
FIAC	fast inshore attack craft
GCC	Gulf Cooperation Council
HARTH	high-aspect-ratio twin-hull
IIN	Iranian Imperial Navy
IRGC	Islamic Revolutionary Guards Corps
IRGCN	Islamic Revolutionary Guards Corps Navy
IRIN	Islamic Republic of Iran Navy
ISOICO	Iran Shipbuilding and Offshore Industries Complex Company
NIO	Iran's Naval Industries Organization of the Armed Forces
OPEC	Organization of the Petroleum Exporting Countries
PF	Patrol Frigate
PGM	Patrol Gunboat, Motor
SADRA	Iran Marine Industrial Company

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I. INTRODUCTION

The Islamic Republic of Iran has adamantly opposed Western influence and interference in regional affairs since the Islamic Revolution of 1979.¹ Despite Iran's disapproval, the United States continues to pursue its own political and economic interests in the Middle East. U.S. strategic objectives in the region are largely supported by the projection of military power in the maritime domain. Gulf Cooperation Council (GCC) partners provide the U.S. Navy access to ports, maintenance facilities, and supplies which assist U.S. operational sustainability. Iran views U.S. maritime presence and activities in the Persian Gulf, such as carrier strike group operations, as threats to national security. The steadfast commitment of U.S. Navy warships to the region has subsequently shaped how Iran approaches national defense. How does Iran attempt to challenge U.S. operations in the maritime domain?

A. MAJOR RESEARCH QUESTION

With limited resources and military capability, Iran is unable to replicate U.S. conventional sea power. Out of necessity, Iran adopted asymmetric naval warfare to maximize defensive capabilities throughout the Persian Gulf and project a level of military strength across the Middle East. This strategic approach aims to deter U.S. naval operations and intimidate regional rivals. This thesis examines Iran's unconventional approach to challenging the United States in the maritime domain. Does Iran have the required naval assets to achieve its strategic goals? Iran's two maritime services, the Islamic Revolutionary Guards Corps Navy (IRGCN) and the Islamic Republic of Iran's Navy (IRIN), are examined to identify each organization's ability to meet national security requirements.² The IRGCN is discussed in relation to its primary objective of Persian Gulf defense. The IRIN is discussed in relation to its limited blue-water naval capability and use in cultivating transactional relationships. An overall assessment is provided concerning the

¹ Michael Axworthy, *Revolutionary Iran: A History of the Islamic Republic* (Oxford: Oxford University Press, 2016), 132.

² Academic research occasionally refers to the IRGCN as Sepah Navy. The IRIN is a service branch of Iran's traditional military force, the Artesh.

effectiveness of Iranian asymmetric naval warfare in deterring U.S. naval operations in the Persian Gulf.

B. SIGNIFICANCE OF THE RESEARCH QUESTION

1. Persian Gulf and the Global Economy

The global economy, in part, relies upon a stable Persian Gulf that can safely export energy resources from the region.³ While armed conflict exclusively over the control of oil in the Middle East remains unlikely, the security of international shipping and oil transportation are separate and legitimate U.S. concerns.⁴ Regional tensions that lead to military conflict could restrict the movement of petroleum and cause significant shifts in the world's price of oil. According to Organization of the Petroleum Exporting Countries (OPEC) data from 2018, 51.2% of the world's proven oil reserves are in countries bordering the Persian Gulf.⁵ Additionally, Iran accounts for 33.9% of OPEC's proven gas reserves.⁶ The Strait of Hormuz is the only sea passage available to maritime traffic for access to the Persian Gulf. Falling within Iranian and Omani territorial waters, the Strait of Hormuz stretches 22 nautical miles wide at its narrowest point and restricts the options shipping has for safe transit.⁷ Without the added possibility of military confrontation, high volume of traffic and limited maneuverability alone make transiting the Strait of Hormuz a demanding task. Iran claims the right to challenge military and commercial vessels transiting the Strait of Hormuz because it does not acknowledge the body of water as an international strait.⁸ This contention denies a vessel's right to cite transit or innocent

³ Jeff D. Colgan, "Fueling the Fire: Pathways from Oil to War," *International Security* 38, no. 2 (Fall 2013): 166–168.

⁴ Emily Meierding, "Dismantling the Oil Wars Myth," *Security Studies* 25, (May 2016): 283–284.

⁵ "OPEC Share of World Crude Oil Reserves, 2018," Organization of the Petroleum Exporting Countries, accessed November 7, 2020, https://www.opec.org/opec_web/en/data_graphs/330.htm.

⁶ "Annual Statistical Bulletin 2020," Organization of the Petroleum Exporting Countries, accessed November 7, 2020, https://asb.opec.org/ASB_Charts.html?chapter=18.

⁷ Kenneth Katzman, Nelesh Nerurkar, Ronald O'Rourke, R. Check Mason, and Michael Ratner, *Iran's Threat to the Strait of Hormuz*, CRS Report No. R42335 (Washington, D.C.: Congressional Research Service, 2012), <https://fas.org/sgp/crs/mideast/R42335.pdf>.

⁸ Farzin Nadimi, "Iran's Evolving Approach to Asymmetric Warfare: Strategy and Capabilities in the Persian Gulf," *The Washington Institute for Near East Policy*, Policy Focus 164 (April 2020): 12.

passage through Iranian territorial waters. Massive tankers transiting the Strait of Hormuz account for more than 40 percent of the world's internationally traded oil every day.⁹ Iran's geographic proximity grants their naval forces sufficient opportunity to interrupt the world trade of oil and create instability in the global market.

A complete Iranian closure of the Strait of Hormuz is unlikely due to the country's own dependence on its use. Capital investment in infrastructure for Iran's energy sector mostly comes from internal sources as international isolation limits access to foreign investors and external sources of revenue.¹⁰ Despite attempts to finance and construct alternative means to transport oil out of Iran, 90% of Iranian exported oil departs by sea from the Kharg terminals.¹¹ Iran's economy remains highly reliant on income from exported oil. Until new large-scale pipeline projects are completed, Iran has limited leverage on the threat of a complete Strait of Hormuz closure. More realistically, Iran could partially close shipping lanes or cause other annoyances to the steady flow of traffic in the region. Even then, Iran would remain cautious and calculated to prevent escalation of force. Provoking conventional naval forces into confrontation would impact Iran's ability to maintain trade.¹² Nevertheless, if Iran reached a point strategically where no other options were available, closure of the Strait of Hormuz would undoubtedly become an international concern. Safe passage through the region can be compromised by a variety of Iranian asymmetric naval threats. The industrialized world remains heavily dependent on oil from the Persian Gulf. Even a minor disruption could strain the global market. Iran's contentious history with Western oil companies and the international community adds to their continued interest in shaping the future of the Middle East's energy market.

⁹ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 4.

¹⁰ Suzanne Maloney, *Iran's Political Economy Since the Revolution* (New York: Cambridge University Press, 2015), 422.

¹¹ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 5.

¹² Abhijit Singh, "Dark Chill in the Persian Gulf – Iran's Conventional and Unconventional Naval Forces," *Maritime Affairs* 6, no. 2 (Winter 2010): 125–126.

2. U.S. Sphere of Influence

The Persian Gulf remains of strategic interest to the United States and use of its international waters is key to the U.S. Navy projecting power throughout the wider Middle East. U.S. naval forces were deployed to the region as early as World War II but have maintained a consistent presence since the Tanker War in the late 1980s. An outgrowth of the Iran-Iraq War, the Tanker War threatened the security of tankers transporting oil out of the region. When Kuwait sought protection for their tankers, the United States seized an opportunity to resolve many of their own issues in the region. GCC partners were uncertain of U.S. commitment following the details behind the Iran-Contra affair going public. Assisting Kuwait allowed the United States to reassure allies and present itself as a stabilizing military force in an unpredictable part of the world. Simultaneously, occurring at the height of the Cold War, U.S. presence in the Middle East minimized Soviet influence in the region. Today, U.S. naval forces continue to protect this sphere of influence and confront what they perceive as Iranian expansionism in the Middle East.¹³ Iran's complex partnerships with non-state actors and rivalries with Arab states concern the United States. The unpredictability of Iran's relationships serves as potential sources of instability in the region.¹⁴ Furthermore, Iran seeks to undermine U.S. leadership of the global community and push the international system towards multipolarity. Reducing U.S. influence helps preserve Iranian sovereignty and ensures survival of the Islamic Republic.¹⁵ A disgruntled Iran forced to standby while a superpower's navy operates near its territorial waters exacerbates rising tensions.

¹³ David B. Crist, "Gulf of Conflict: A History of U.S.-Iranian Confrontation at Sea," *The Washington Institute for Near East Policy*, Policy Focus 95 (June 2009): 2–3.

¹⁴ Geoffrey Kemp and Robert E. Harkavy, *Strategic Geography and the Changing Middle East* (Washington, D.C.: Brookings Institution Press, 1997), 75.

¹⁵ Frederic Wehrey, David E. Thaler, Nora Bensahel, Kim Cragin, Jerrold D. Green, Dalia Dassa Kaye, Nadia Oweidat, and Jennifer Li, *Dangerous But Not Omnipotent: Exploring the Reach and Limitations of Iranian Power in the Middle East* (Santa Monica: RAND, 2009), 14.

3. Iran as a Regional Naval Threat

Iran portrays itself as a regional military power and prides itself as being a protector of the world's energy market.¹⁶ Geography alone demands that Iran maintain a naval presence. With over 1,000 nautical miles of coastline, Iran has interest in shaping the maritime domain. Strategically important islands located inside the Strait of Hormuz reinforces Iran's claim to controlling access to the Persian Gulf, provides convenient locations for military surveillance of naval traffic, and extends legal rights to mineral resources in the region.¹⁷ Inlets, coves, and offshore structures allow Iranian naval forces to stage equipment and weapons for extended patrols, mining operations, and swarming small boat attacks.¹⁸ The narrowness of the Persian Gulf also allows coastal cruise missiles to effectively target shipping lanes from a variety of potential sites.¹⁹ In comparison to other Middle Eastern navies, Iran holds an advantage in overall size and capability.²⁰ The Iranian naval threat is one reason why GCC partners have largely delegated their maritime security dilemma to the U.S. Navy. While the modernized U.S. naval fleet is technologically superior, Iranian naval forces present a unique challenge. Iran's naval capability is viewed as a more serious threat to U.S. forces than Iran's conventional ground forces.²¹ Furthermore, of all Iran's military organizations, the IRGCN has most effectively adopted asymmetric tactics.²² Left unbalanced, Iran could use the maritime domain to further expand their influence in the Middle East and more credibly threaten access to the Strait of Hormuz.

¹⁶ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 35.

¹⁷ Christopher Harmer, "Iranian Naval and Maritime Strategy," *Institute for the Study of War*, Middle East Security Report 12 (June 2013): 18.

¹⁸ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 32.

¹⁹ Office of Naval Intelligence, "Iran's Naval Forces: From Guerilla Warfare to a Modern Naval Strategy," (Fall 2009): 10.

²⁰ Joshua Himes, "Iran's Two Navies: A Maturing Maritime Strategy," *Institute for the Study of War*, Middle East Security Report 1, (October 2011): 17.

²¹ Kemp and Harkavy, *Strategic Geography and the Changing Middle East*, 75.

²² Wehrey, Thaler, Bensahel, Cragin, Green, Kaye, Oweidat, and Li, *Dangerous But Not Omnipotent*, 67.

4. Gray Zone Conflict and Rising U.S.-Iran Tensions

Gray zone conflict refers to an unspecified space between war and peace which coincides with opponents routinely challenging the political limits of their adversary. Revisionist powers and non-state actors use gray zone conflict to achieve small gains without facing the penalties of a war they would likely lose.²³ Rising tensions between the United States and Iran, accelerated by President Trump's "maximum pressure" campaign, raises the level of uncertainty within gray zone conflict. Iran operates within the gray zone to challenge U.S. interests while managing the risk of conventional warfare. Within the maritime domain, IRGCN small boats interrupt or harass U.S. naval operations in the Persian Gulf. Their actions may not cross a legal justification for military response but do complicate decision-making processes within rapidly developing situations.²⁴ To Iran's advantage, these types of engagements could normalize close-quarter interactions and set favorable conditions for future IRGCN attacks. Iran can operate in the gray zone due to U.S. adherence to rigid definitions of war and peace. Western cultural and legal constraints allow states like Iran to operate with aggression, below the level of war, and face little to no repercussion. Iran temporarily backs down if its actions are met with swift and firm responses. However, a lack of response has tended to embolden further aggressive action.²⁵ Iranian attacks on U.S. allies are also difficult to respond to. Without a reaction, which demonstrates an unwillingness to defend an ally's interests, the United States could damage relationships.²⁶ The ambiguity of gray zone conflict gives advantages to Iran within the maritime domain, allowing them to present a challenge to U.S. conventional sea power with comparatively weaker assets.

²³ Scott H. Englund, "A Dangerous Middle-Ground: Terrorists, Counter-Terrorists, and Gray-Zone Conflict," *Global Affairs* 5, no. 4–5 (December 2019): 397.

²⁴ Michael Eisenstadt, "Operating in the Gray Zone: Countering Iran's Asymmetric Way of War," *The Washington Institute for Near East Policy*, Policy Focus 162 (January 2020): 5.

²⁵ Eisenstadt, "Operating in the Gray Zone," 13.

²⁶ Eisenstadt, "Operating in the Gray Zone," 37.

C. LITERATURE REVIEW

1. How Iran Views National Security

The anti-Western rhetoric amplified throughout the Islamic Revolution grounded Iranian security planning in a profound suspicion of the international system. Episodes of foreign involvement in Iranian affairs, to include the U.S. orchestration of the 1953 coup d'état, inspired a movement to reclaim independence over the direction of internal affairs.²⁷ Despite the significance of the Islamic Revolution on Iranian national security thinking, Tabatabai discusses how Iranian self-reliance is evident as early as the Qajar dynasty. Throughout Persian history the integrity of territorial borders and sovereignty were routinely challenged. Modern Iran has only further developed this yearning for self-sufficiency and defense.²⁸ Since 1979, the United States has predominantly viewed Iran's national strategy in terms of exporting the Islamic Revolution. While Iran is undoubtedly doing so, their primary goals are deterrence and presenting a relentless defense. With political and economic turmoil persisting throughout the Middle East, Iran views itself as fighting for survival amongst a myriad of failed regimes, terrorism, and foreign interference. To challenge these threats Iran attempts to export the Islamic Revolution as one of many tools to safeguard unity within its own borders. In a world dominated by globalism, Iranian adamance on self-reliance is difficult to understand. However, the Islamic Republic believes that relying on internal mechanisms for defense is the only way to ensure survival. The regime does not want to be vulnerable to foreign pressure and threats. Distrust of the United States and insistence on self-reliance in strategic affairs has contributed to Iran's regional and international isolation.²⁹ To assure optimal defense with minimal foreign support, Iran has emphasized the development of domestic industrial and technological capabilities. This strategy aims to lessen the impact of economic sanctions and guarantee long-term national security.

²⁷ Ariane M. Tabatabai, *No Conquest, No Defeat: Iran's National Security Strategy* (Oxford: Oxford University Press, 2020), 298.

²⁸ Tabatabai, *No Conquest, No Defeat*, 299.

²⁹ Tabatabai, *No Conquest, No Defeat*, 300–302.

Self-sufficiency has driven Iran to focus on its domestic production of maritime assets. This strategy is further implemented as a necessary response to U.S. imposed sanctions. Iran's military spending is impacted to some degree, however, sanctions are most effective at limiting Iran's access to foreign technology. Even during times when sanctions are temporarily lifted, Iran is unable to acquire the more sophisticated platforms on the market. The self-reliance approach is a much slower way to develop military assets. It does, however, make it difficult for Iran's adversaries to monitor infrastructure development and overall growth of their maritime capability.³⁰ Iran routinely challenges commercial vessels and warships in a calculated manner to gauge the limits they can exert military strength. These tests aim to strain the United States and their allies' commitment to objectives in the region. When successful, Iran's national security strategy of self-reliance is further validated. Repetition of Iran's threats play into a long-term psychological warfare campaign against the United States. Iran envisions victory will come by outlasting the West, causing the United States to spend more resources and endure more casualties than what is politically feasible. Asymmetric warfare allows Iran to exploit these opportunities within the security realm, challenging great power at a feasible cost.

2. Defining Asymmetric Warfare

The defining characteristic of asymmetric warfare is the inherent difference between two belligerents. Academics began discussing asymmetric warfare as early as 1975 in terms of the disparity in power between two forces.³¹ However, many of the tactics used in asymmetric warfare can be traced to Mao Tse-tung's writings on insurgency and protracted war.³² As a modern concept, asymmetric warfare first made its appearance in U.S. military doctrine with 1995's *Joint Warfare of the Armed Forces of the United States*.³³ Early definitions solely mentioned the inequality between forces but were

³⁰ Himes, "Iran's Two Navies," 24.

³¹ Andrew Mack, "Why Big Nations Lose Small Wars: The Politics of Asymmetric Conflict," *World Politics* 27, (1975): 175–200.

³² Mao Tse-tung, "On Protracted War," *Selected Works of Mao Tse-tung*, (Peking: Foreign Languages Press, 1967), 113–194.

³³ Rod Thornton, *Asymmetric Warfare* (Cambridge: Polity Press, 2007), 19.

routinely expanded upon to include its political dynamics and unconventional tactics. One of the more thorough definitions of asymmetric warfare was written by Metz and Johnson. They define asymmetric warfare as:

Acting, organizing, and thinking differently than opponents in order to maximize one's own advantages, exploit an opponent's weaknesses, attain the initiative or gain greater freedom of action. It can be political-strategic, military-strategic, operational or a combination of these. It can entail different methods, technologies, values, organizations, time perspectives or some combination of these.³⁴

The goals of asymmetric warfare are deterrence-based and defensive, exploiting identified weaknesses in the enemy to increase the costs of war and diminish their political will to fight.³⁵ In symmetrical conflict against the U.S. military, where a conventional force meets its mirrored opposite on the battlefield, there is little chance of victory for the opponent. Although Iran learned this lesson firsthand during the Tanker War, they were quickly reminded of U.S. advantages in symmetric warfare while observing Operation Desert Storm. Challenging the United States requires radically different strategies and tactics.

Asymmetric warfare is most successful when exercised with patience. An immediate victory against a superior force is unlikely, therefore, military planning includes operations that will occur several years into the future. With its decisive power, the United States is accustomed to acting quickly against unmatched power. Protracted war is not politically acceptable among Western liberal democracies. Iran seeks to impose high costs to warfare. Drawing out military campaigns causes liberal democracies to lose the political will to pursue security objectives.³⁶ Additionally, liberal democracies are expected to conduct themselves in a specific and restrained manner. Violence is avoided when possible and is expected to be targeted and proportional to the objective at hand. The weaker power, using asymmetric tactics, is not bound by the same constraints. Furthermore, the United States prefers to build coalitions to help legitimize military action. This not only delays

³⁴ Steven Metz and Douglas V. Johnson, "Asymmetry and U.S. Military Strategy: Definition, Background, and Strategic Concepts," *Strategic Studies Institute*, (January 2001): 5–6.

³⁵ Office of Naval Intelligence, "Iranian Naval Forces: A Tale of Two Navies," (February 2017): 21.

³⁶ Wehrey, Thaler, Bensahel, Cragin, Green, Kaye, Oweidat, and Li, *Dangerous But Not Omnipotent*, 53.

decisive action against their adversary but allows the weaker state to take advantage of differences within the coalition's relationships and possibly cause greater political unrest.³⁷ This cultural impact on warfare allows the asymmetric threat a psychological advantage. By appearing "soft" the United States emboldens weaker states to push the lines of aggression when possible.³⁸

U.S. reservations about the use of force can paralyze military action and grant space for weaker powers, like Iran, to challenge the status quo.³⁹ The perfect calculation of a military action's effect is impossible to obtain. Iran's authoritarian regime has flexibility to act when the United States appears skeptical about the use of force. The prevalence of a free press and the speed at which information can be relayed to the public can restrict U.S. application of force.⁴⁰ States that care about their positioning within the international order will conform their behavior to agreed upon norms.⁴¹ Arrequin-Toft explains additional arguments for why some believe authoritarian regimes are better suited to fight wars than democratic regimes.⁴² Authoritarian regimes can mobilize resources more effectively than democracies because they are not required to respond to public opinion. Furthermore, authoritarian regimes are less likely to conform to the international laws of war, specifically those regarding noncombatants or civilians. Without considering the public's view of a conflict, an authoritarian regime can sustain higher combat casualties without losing the military objective. In a democracy, combat casualties and loss of intermediate goals can significantly impact the political will of government leadership to continue military operations.⁴³ Lastly, when comparing strong and weak actors in conflict, the stronger

³⁷ Thornton, *Asymmetric Warfare*, 16–18.

³⁸ Thornton, *Asymmetric Warfare*, 8–10.

³⁹ Roger W. Barnett, *Asymmetrical Warfare: Today's Challenge to U.S. Military Power* (Washington, D.C.: Brassey's Inc., 2003), 41.

⁴⁰ Barnett, *Asymmetrical Warfare*, 49.

⁴¹ Barnett, *Asymmetrical Warfare*, 67–68.

⁴² Ivan Arreguin-Toft, *How the Weak Win Wars: A Theory of Asymmetric Conflict* (New York: Cambridge University Press, 2005), 7–8.

⁴³ Gil Merom, *How Democracies Lose Small Wars: State, Society, and the Failures of France in Algeria, Israel in Lebanon, and the United States in Vietnam* (New York: Cambridge University Press, 2003), 15.

power typically has a lower interest in the engagement. A stronger power's survival is not at stake which implies a low interest and high political vulnerability. A weak actor's survival is at stake which implies a high interest and low political vulnerability.⁴⁴ In all, Iran is well-positioned in the sociopolitical environment of the modern world to leverage its inferior asymmetric naval threats within the maritime domain. Despite overwhelming material advantages, political considerations limit U.S. willingness to engage in conflict.

Asymmetric tactics remain viable options due to the generational evolution of warfare. Hammes discusses this progression in warfare: first generation focusing on direct destruction of an enemy force, second generation relying on superior firepower, third generation removing an enemy's ability to use command and control structures, and fourth generation eliminating the enemy's political will to fight.⁴⁵ Fourth generation warfare has proven successful against great powers. The political, economic, social, and military elements of fourth generation warfare depict an advanced form of insurgency. Since a fourth generation conflict can last decades, the weaker power will seek to meet intermediate objectives which slowly shift the opinion of target audiences.⁴⁶ When Hammes published his book in 2004 he categorized Iran as a second or third generation warfare threat. However, following a reorganization of naval forces and areas of responsibility in 2007, Iran has further engrained their military strategy in asymmetry and a type of guerilla warfare at sea which is highly synonymous to insurgent tactics. Iran leverages its asymmetric naval threats to increase the costs and risks of U.S. Navy operations in the Persian Gulf. By submitting this challenge, Iran hopes to erode U.S. political will.

3. Asymmetric Naval Warfare

For most of naval history the trend was towards developing larger ships and weapons. Greater size allowed increased firepower and the ability to carry more personnel.

⁴⁴ Arreguin-Toft, *How the Weak Win Wars: A Theory of Asymmetric Conflict*, 13.

⁴⁵ Thomas X. Hammes, *The Sling and the Stone: On War in the 21st Century* (Minneapolis: Zenith Press, 2004).

⁴⁶ Hammes, *The Sling and the Stone*, 222.

With the invention of the torpedo boat in the late nineteenth century, smaller vessels could inflict significant damage to larger surface vessels. Britain, with a vast surface fleet of battleships, was almost brought to economic collapse in World War I and II by German submarines disrupting supply lines. U.S. aircraft carriers are the cornerstone of contemporary naval power and have an unmatched ability to project strength at sea. However, these massive vessels were designed to operate away from the dangers of shore-based threats. Additionally, as modern technology develops new sea-based threats, aircraft carriers have increasingly required the protection of other warships designed to counter those dangers. Today's U.S. Navy operational requirements drag naval units closer into the littoral waters for which they were not designed to operate in.⁴⁷ Asymmetric naval warfare allows weaker powers, unable to match the size and capability of modern warships, to utilize a myriad of other threats to counteract great power in the littorals.

The naval element of asymmetric warfare capitalizes on being closer to shore which decreases an adversary's response time to threats, lessens maneuverability of conventional warships, and makes a range of military options available. As vessels move towards the littorals, asymmetric forces can utilize shore-based missile sites and deploy cost-effective weapons to inflict damage against warships that cost hundreds of millions of dollars. While operating in the littorals, incoming missiles are difficult for an adversary to identify due to radar interference with land. This allows less time for targets to react and employ countermeasures. With additional stress placed on warships to react, the chance for miscalculation increases and errors can be made. A choice is forced, wait too long for confirmation of a hostile threat and risk an actual danger reaching the ship or act early with incomplete information. One key example of this occurred when Iran Air Flight 655 was shot down mistakenly by the USS Vincennes (CG 49) in 1988.⁴⁸ The political impact of such a mistake can greatly discredit a stronger power's actions. Alternatively, inaction could allow a weaker power to successfully complete an attack and damage the strong power's military prestige.

⁴⁷ Thornton, *Asymmetric Warfare*, 103–105.

⁴⁸ Thornton, *Asymmetric Warfare*, 107–109.

Sea mines are another asymmetric threat which can cause substantial damage at low cost. Furthermore, a mine does not need to strike a target to produce a reaction. Knowledge of a mined area can prevent strong powers from navigating a particular region, greatly impeding their naval operations. Fourteen out of the seventeen U.S. Navy warships that were disabled or damaged because of enemy action since World War II were caused by mines.⁴⁹ Mines are an extremely efficient way of providing layered defense of coastal waters. Stronger navies can be deterred from amphibious operations or other missions that require transiting the littorals.⁵⁰ Minesweeping operations, depending on how quickly forces could be mobilized, could take several weeks to complete. Mine countermeasure vessels are typically unable to transit much faster than at a trawling speed, use a meticulous approach to clearing waters of mine threats, and require protection from other warships in the area. Technological advances continue to reduce the costs of mines, improve their resistance to environmental factors, and diversify their threat profile. Used during the Tanker War with success, Iran employs this aspect of asymmetric naval warfare to bolster their credibility of a Strait of Hormuz closure.

Iran, understanding that spending resources on larger surface vessels would only provide easy targets for the U.S. Navy, invest widely in fast inshore attack craft (FIAC) to provide coastal naval defense. At their fast speeds, FIAC are difficult to detect on radar and target with defensive fire.⁵¹ Within the confusing environment of littorals, where other fishing or commercial vessels are likely to be underway, determining if a unit is a hostile FIAC can be challenging. These factors can allow FIAC to reach intended targets and employ their weapons before being detected.⁵² Using swarming maneuvers, FIAC can further add to the complexity of the littoral environment. Asymmetric naval warfare combines all factors previously discussed into a unified threat: difficult navigation in a littoral environment, shore-based missiles, mines, and FIAC. Together, these threats seek to overwhelm the modern U.S. Navy warship. Although conventional warships' superior

⁴⁹ Thornton, *Asymmetric Warfare*, 114–116.

⁵⁰ Thornton, *Asymmetric Warfare*, 117–118.

⁵¹ Thornton, *Asymmetric Warfare*, 120.

⁵² Himes, "Iran's Two Navies," 16.

technology can combat most threats, there remains a chance that one threat seeps through the defense and causes major damage. Willing to take losses to achieve victory, if a weaker power loses a handful of small boats in exchange for a successful strike on a great power's warship they can claim success.⁵³ Weaker powers can then use propaganda from a successful attack to humiliate stronger powers and cause them to question their commitment to protracted conflict.

Due to a lack of resources, isolation from the international community, and inability to procure their own modern conventional naval threats through industry, Iran has fully invested in asymmetric naval warfare.⁵⁴ Iran's naval strategy relies on inflicting severe damage across several warships early in conflict. The goal is to drain their adversary's political will to fight and cause their withdrawal from a military campaign. However, if unable to deter further aggression, Iran plans to continue asymmetric tactics to wage a protracted war, raising the costs and extending the time of conflict while continuing to combat the political will of their enemy.⁵⁵ Their asymmetric naval threat seeks to maximize confusion and delay the U.S. Navy's ability to make decisions. With thousands of vessels operating in the Persian Gulf and Strait of Hormuz, Iran can essentially hide their FIAC among civilian vessels.⁵⁶ Using speed, maneuverability, and stealth, IRGCN FIAC attempt to exploit the sluggishness of larger warships. While Iranian forces are willing to accept risk at the chance inflicting damage on a warship, it can also provoke emotional and overaggressive responses as seen during the Tanker War. Throughout the conflict, the United States repelled attacks from Iranian small boats as the units lacked coordination and attacked in manageable numbers. With lessons learned from past skirmishes with the U.S. Navy, strategically focused swarms may be capable of producing more favorable results.

⁵³ Thornton, *Asymmetric Warfare*, 124.

⁵⁴ Harner, "Iranian Naval and Maritime Strategy," 13.

⁵⁵ Office of Naval Intelligence, "Iranian Naval Forces," 22.

⁵⁶ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 32.

D. POTENTIAL EXPLANATIONS AND HYPOTHESES

This thesis discusses how Iranian naval forces attempt to challenge the United States within the maritime domain and protect regional interests. Based on Iran's adherence to self-reliance and asymmetric warfare, this thesis explains how Iran maximizes naval capabilities given their economic restraints. After reviewing both Iranian maritime services, an assessment is made as to how effectively the state is realizing goals within the maritime domain. Iranian naval history is provided for context and an understanding of how Iran's naval capabilities evolved over time. Capabilities and limitations of Iran's current naval assets are defined to determine how its units can realistically achieve security objectives. Strategy and tactics are considered to demonstrate how these asymmetric naval threats are leveraged for maximum value. IRIN deployments are discussed to demonstrate Iran's willingness to slightly deviate from self-reliance and utilize transactional relationships with Russia and China to advance security goals. Additionally, case studies of IRGCN interactions at sea are analyzed to compare stated strategic goals with actions taken. The Farsi Island incident (January 12, 2016) is reviewed to indicate Iran's hesitancy to escalate situations with the U.S. military. Iran's seizure of British vessel *Stena Impero* is detailed to reveal how the IRGCN asserts its naval presence against commercial traffic in the Persian Gulf. Three main hypotheses were developed as part of the preliminary research.

(1) First Hypothesis

Iran has developed its naval forces in response to past failures during the Tanker War. Their asymmetric naval threat provides a suitable level of deterrence and defense in the region. A sufficient challenge is posed to U.S. Navy conventional forces.

(2) Second Hypothesis

Despite Iran's modest improvements in asymmetric naval warfare since the Tanker War, they remain unable to present a legitimate challenge to the United States within the maritime domain. Their threat is easily countered through conventional sea power and inhibits Iran's ability to secure national defense.

(3) Third Hypothesis

Without comparable conventional naval forces and weaponry, Iran will never meet its security objectives within the maritime domain.

E. RESEARCH DESIGN

After detailing Iran's naval history and explaining how the state came to adopt asymmetric naval warfare, this thesis analyzes IRGCN and IRIN capabilities and limitations in presenting challenges to the United States within the maritime domain. Strategies and tactics of Iran's naval forces are studied to measure effectiveness in achieving national security objectives. Case studies of recent IRGCN interactions at sea are discussed to provide further insight into Iranian maritime strategic thinking. Interactions were chosen based on the clear strategic choices that accompanied each situation. In each case study, Iran had opportunity to escalate aggression but made specific choices throughout each incident to monitor the level of reaction from Western powers.

Research for this thesis included relevant secondary and primary sources. Numbers of Iranian vessels and weaponry, especially within the IRGCN, may not accurately reflect true figures. Iran's tendency to inflate military power is considered when analyzing naval capabilities and limitations. Precise figures of small boats and other weapons are difficult to obtain due to Iran's ability to keep assets hidden in a variety of coves and inlets. However, secondary works that discuss capabilities and limitations are used to provide a broad overview. Secondary sources include government reports and scholarly articles about relevant topics. Primary sources are used to link capabilities with stated strategic objectives. News reports from Western and Iranian media, as well as statements from military officials, are used for analysis.

F. THESIS OVERVIEW

This thesis contains five chapters. The first chapter introduced the topic and provided the foundation for Iran's asymmetric approach to national security. The second chapter provides historical background of Iran's naval forces. Iran's transition from conventional sea power to asymmetric naval warfare following the Islamic Revolution is

discussed. Chapter three provides a broad overview of Iran's capabilities and limitations within the maritime domain. The IRGCN and IRIN are analyzed in reference to their organization's stated maritime missions. Chapter four explains how Iran's naval assets implement specific strategies and tactics to achieve desired effects within the maritime domain. Finally, chapter five summarizes the overall findings of the thesis and provides an assessment of Iran's challenge to the United States within the maritime domain.

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II. IRANIAN NAVAL HISTORY

Iran's strategic approach to the maritime domain has not always centered around asymmetric naval warfare. Prior to the Islamic Revolution, Iran acquired a conventional naval force capable of achieving coastal defense and pursuing blue-water interests. With the support of Western partners, Iran may have developed a naval strategy aimed at sea control rather than implementing asymmetric strategies which seek sea denial. However, the political upheaval surrounding the Islamic Revolution contributed to Iran's international isolation and economic decline. Modern warships with advanced weapons systems became unattainable and Iran was forced to employ unconventional strategies to maintain some level of influence in the Persian Gulf. This chapter will examine key historical events that impacted Iran's strategic approach to the maritime domain and explain why Iran currently relies upon asymmetric naval warfare to challenge adversaries. First, the development of the Iranian Imperial Navy (IIN) under the last Shah of Iran is visited. Second, the origins of the IRGCN are discussed in the context of the Islamic Revolution and Iran-Iraq War. Next, the Tanker War is examined to detail Iran's first extensive use of asymmetric naval warfare. This section will also review Iran's inability to coordinate asymmetric naval threats during Operation Praying Mantis. While Iran maintains ambitions for regional hegemony, they are unable to pursue goals with conventional military strategies. Within the maritime domain, political and economic restraints curtail Iran's ability to build or acquire modern warships. Instead, Iran uses asymmetric naval warfare out of necessity and a lack of alternative options.

A. SHAH'S IMPERIAL NAVY

Following World War II, Iran displayed an increased interest in the maritime domain through expansion of the IIN. However, development of a modern Iranian naval force was heavily dependent upon the precarious relationship Iran had with the West. Reza Shah Pahlavi, monarchical ruler of Iran from 1925 to 1941, sought to abstain from involvement in international politics and remain neutral throughout World War II. Despite his position, an Allied invasion and occupation of Iran as part of Operation Countenance

unwillingly drew Reza Shah into the conflict. In the process of Allied forces solidifying supply lines through the Persian Corridor to the Soviet Union, the existing Iranian naval fleet was decimated.⁵⁷ After the Allies' occupation, Reza Shah's persistent refusal to abide by British demands resulted in the forceful abdication of his power. His son, Mohammad Reza Pahlavi, held favor with the British and was permitted to succeed as Shah of Iran. Left with no significant military establishment in place, Mohammad Reza was determined to rebuild Iran's armed forces and transform the country into a regional power.

Under Mohammad Reza's rule, an improving relationship with the West allowed the Shah to replace the annihilated Iranian naval fleet with U.S. and British designed small surface combatants. In the early 1960s, the IIN fleet consisted of four Cape-class patrol craft and five small minesweepers. Iran expanded its coastal fleet in 1964 by acquiring two PF 103-class corvettes from the United States; an additional two were purchased in 1970. These corvettes were the first IIN vessels capable of conducting operations in open oceans beyond the Persian Gulf. By 1966 the IIN acquired, from the Royal Navy, a Battle-class destroyer, three improved PGM 71-class patrol crafts, and four Vosper Thornycroft Mark V frigates.⁵⁸ This strategic emphasis on the maritime domain also oversaw a rise in IIN manpower, with personnel increasing from 1,000 to 6,000 by 1965.⁵⁹ Despite the IIN's growth and increased military capacity, Britain's extensive defensive commitments across the Persian Gulf prevented any other nation from exercising influence within the maritime domain. British military presence in the region did not diminish until Prime Minister Harold Wilson announced his intentions to initiate a steady withdrawal from the region in January 1968. Wilson's goal was to have all British forces in the Persian Gulf removed by December 1971.⁶⁰ The announcement of British withdrawal from the region emboldened the Shah to convey his own ambitions of Iran becoming the new symbol of security in the

⁵⁷ Mervyn Roberts, "Operation Countenance: The 1941 Invasion of Iran and the Clash of Propaganda Narratives," *Iranian Studies* 52, no. 3–4 (2019): 595.

⁵⁸ Martin S. Navias and E.R. Hooton, *Tanker Wars: The Assault on Merchant Shipping During the Iran-Iraq Crisis, 1980–1988* (New York: Tauris Publishers, 1996), 22.

⁵⁹ Fariborz Haghshenass, "Iran's Asymmetric Naval Warfare," *The Washington Institute for Near East Policy*, Policy Focus No. 87 (September 2008): 4.

⁶⁰ Richard Mobley, "Deterring Iran, 1968–71: The Royal Navy, Iran, and the Disputed Persian Gulf Islands," *Naval War College Review* 56, no. 4 (Autumn 2003): 108.

Middle East. In April 1969, the Shah abrogated a 1937 treaty with Iraq delineating navigational rights along the Shatt al-Arab and directed his newly acquired warships to sail near the waterway in a show of force.⁶¹ The Shah was positioning Iran to fill a power vacuum that would be left by the departing British forces.

Rising defense costs and decreasing control over the internal affairs of Persian Gulf states contributed to Britain's decision to leave the region.⁶² However, Britain was aware that their absence could threaten Persian Gulf stability. Invigorated opposition could challenge established regimes in the Middle East, the Soviet Union could fill a void left by Britain's departure, and regional conflict could erupt around ethnic differences or territorial disputes.⁶³ In reference to Iran, the latter would occur as the Shah forcefully asserted claims to strategic islands in the region. Iran promptly declared legal ownership of Abu Musa, Greater Tunb, and Lesser Tunb. Simultaneously, Iran positioned military forces on the islands and established the positions as forward operating bases capable of protecting sea lines of communication through the Strait of Hormuz.⁶⁴ The Shah remained actively engaged with progress on naval training, military base upgrades, and the general expansion of Persian Gulf capabilities. His goal was to limit the influence of foreign navies in the region and make Iran the exclusive guarantor of safe international shipping.⁶⁵ Claiming strategic positions near the Strait of Hormuz granted Iran significant advantages in surveillance, intelligence gathering, and response times to maritime traffic entering or exiting the Persian Gulf.

Despite the continuing drawdown of British assets in the region, aggressive Iranian claims to territories caused Britain to consider a response. Although unwilling to continue substantial levels of involvement and investment in the Middle East, Britain maintained

⁶¹ Navias and Hooton, *Tanker Wars*, 20.

⁶² R.P. Owen, "The British Withdrawal from the Persian Gulf," *The World Today* 28, no. 2 (February 1972): 76.

⁶³ The Center for Strategic and International Studies, "The Gulf: Implications of British Withdrawal," Georgetown University, Special Report Series no. 8 (February 1969): 88.

⁶⁴ Mobley, "Deterring Iran, 1968–71," 108.

⁶⁵ Nadia El-Sayed El-Shazly, *The Gulf Tanker War: Iran and Iraq's Maritime Swordplay* (London: Macmillan Press, 1998), 172.

political and economic interests in the Persian Gulf. Arab regimes were disappointed with the British decision to remove their stabilizing military force from the region. They viewed the British departure as contributing to Iran's progress towards regional hegemony. The Shah remained confident in his political moves, especially with a favorable U.S.-Iran relationship developing. The Shah's reputation within the international community was strong enough to dissuade any regional coalition from legitimately posing a threat to Iran.⁶⁶ Britain ultimately determined that placing too much pressure against Iran's claims could incite an unconventional response of which Britain was unprepared to handle.⁶⁷ Rather than risk an escalation of tensions with Iran and possible embarrassment in a military engagement, Britain allowed Iran's moves to go unopposed. The Shah's decision to pursue Abu Musa, Greater Tunb, and Lesser Tunb ended successfully and granted him additional leverage within the maritime domain.

The Shah continued to strengthen relationships with the West throughout most of the 1970s, granting Iran access to the world's most advanced defense industries. The United States viewed Iran as an emerging regional power and an important partner well-positioned against the spread of communism. This allowed the Shah to receive financial aid and coordinate arms deals with the West. These favorable terms also provided the Shah with resources needed to reinforce his position against competing domestic factions within Iran.⁶⁸ Specifically within the maritime domain, Iran was well on its way to becoming the Middle East's exclusive conventional naval force. Between 1966 and 1978, the Shah acquired two U.S. Sumner-class destroyers, 12 French La Combattante-class patrol boats, 12 hovercrafts, and a large fleet of U.S. naval helicopters.⁶⁹ In 1974, the United Kingdom delivered two Hengam-class landing ships; an additional two were placed on order. In 1980, Japan delivered five ro-ro ships which were procured for the IIN's amphibious and

⁶⁶ Navias and Hooton, *Tanker Wars*, 21.

⁶⁷ Mobley, "Deterring Iran, 1968–71," 114.

⁶⁸ Hesam Forozan, *The Military in Post-Revolutionary Iran: The evolution and roles of the Revolutionary Guards* (London: Routledge, 2016), 35.

⁶⁹ Office of Naval Intelligence, "Iranian Naval Forces," 8–9.

minelaying capabilities.⁷⁰ IIN manpower continued to increase to 28,000 personnel by 1978, making the IIN the largest navy among Persian Gulf nations.⁷¹ For naval warfare training, Iranian officers were welcomed to study at military institutions in the United States and across Europe. Beyond these acquisitions, the United States agreed, in principle, to sell Iran four Spruance-class destroyers, three Tang-class diesel submarines, six Type-209 class submarines and 12 F-122 class missile frigates.⁷² Among European partners, Iran had plans to acquire 12 Kortenaer-type frigates and six 209/1400 diesel electric submarines from Dutch and German shipyards.⁷³ The Islamic Revolution would bring all these prospective military acquisitions from the West to a sudden halt.

Prior to the Islamic Revolution, Iran was nearing an ideal position to exert influence within the maritime domain. Local defense of the Persian Gulf could be achieved through superior conventional sea power which would also have the means to pursue other blue-water interests across the Indian Ocean. However, the Islamic Revolution would overthrow the Shah's leadership and install a theocratic regime. The new government severed ties with the West and abandoned any ability Iran had to acquire or maintain conventional military strength.⁷⁴ Lacking the domestic defense industry necessary to foster its own development, Iran's naval build-up was only sustainable through extensive foreign support. Asset procurement, fleet maintenance, and training was impossible without an intact relationship with the United States. Prior to the outbreak of the Iran-Iraq War, the IIN had 11 major warships (destroyers, frigates, and corvettes) and 19 smaller vessels (fast attack and patrol craft).⁷⁵ The newest IIN warships with advanced weapons systems were essentially made obsolete with the withdrawal of Western technical support.

The reliance on outside entities also prevented the IIN from cultivating its own organizational practices. The IIN's managerial inefficiencies and general lack of

⁷⁰ Navias and Hooton, *Tanker Wars*, 23.

⁷¹ Crist, "Gulf of Conflict," 15.

⁷² El-Shazly, *The Gulf Tanker War*, 171.

⁷³ Navias and Hooton, *Tanker Wars*, 23.

⁷⁴ Office of Naval Intelligence, "Iran's Naval Forces," 2.

⁷⁵ Navias and Hooton, *Tanker Wars*, 23.

preparedness to carry out major combat missions became readily apparent when the Islamic Republic ended relations with the West. New leadership viewed the IIN's use of foreign military concepts and doctrines as dictating the development of Iranian national security strategy.⁷⁶ Rather than continue to borrow from the West, the Islamic Republic returned to a strategy centered around self-sufficiency. Strict adherence to self-reliance meant that a modern naval force was unmanageable. The technology to equip warships and infrastructure necessary to conduct routine maintenance were both unavailable to Iran. Furthermore, economic costs associated with international isolation significantly limited the capacity for future research and development. Providing national defense independently would force Iran to entertain alternative methods, including the use of asymmetric naval warfare.

B. IRGCN'S ORIGINS

Mohammad Reza fled Iran on January 16, 1979 in response to the rising popularity of the Islamic Revolution.⁷⁷ After five decades of Pahlavi dynastic rule, Ayatollah Ruhollah Khomeini established his theocratic regime and assumed ultimate authority over Iran's military forces. However, the abrupt change of power and ongoing revolutionary sentiment across the country led Khomeini to be weary of trusting the standing military leadership. To protect Khomeini's position and attempt to unite the numerous grassroots movements that had developed throughout the revolution, the Islamic Revolutionary Guards Corps (IRGC) was officially created on April 22, 1979.⁷⁸ Parallel security forces allow newly installed regimes to counteract the power and influence of a regular armed military.⁷⁹ The two main camps within the Islamic Revolution, Islamists and nationalists, agreed that a parallel security force was necessary to protect Khomeini from coup attempts

⁷⁶ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 15.

⁷⁷ Ardavan Khoshnood and Arvin Khoshnood, "The West's Role in the Shah's Overthrow," *Middle East Quarterly* 25, no. 3 (Summer 2018).

⁷⁸ Maryam Alemzadeh, "The Islamic Revolutionary Guards Corps in the Iran-Iraq war: an unconventional military's survival," *British Journal of Middle Eastern Studies* 46, no. 4 (2019): 627.

The IRGC is also referred to as the Pasdaran which means "Guards" in Persian.

⁷⁹ James T. Quinlivan, "Coup-proofing: Its Practice and Consequences in the Middle East," *International Security* 24, no. 2 (Autumn 1999): 141.

and loyalist movements among the Shah's remaining supporters. Military leadership needed to be vetted for allegiance to the Islamic Republic's ideals. However, disagreement among the factions centered around which group would exercise control over the IRGC. Using personal ties to Khomeini, Islamists gained immediate authority over the IRGC but heavily relied upon nationalist controlled government institutions for financing.⁸⁰ Over time, Khomeini cleverly fused Islamist religious ideology and nationalist Iranian identity to subdue factional infighting and ensure the Islamic Republic's stable hold on power.

Khomeini used the IRGC as a personal tool to limit his opposition's ability to challenge the regime's authority and to consolidate power within the new Islamic Republic.⁸¹ By labelling his opponents' actions as unjust, Khomeini legitimized the IRGC's use of intense force to crush dissent. This included authorizing the murders of senior leadership throughout the traditional military force. Eliminating top-ranking Iranian military officials meant, specifically for the navy, that experienced managers, knowledgeable instructors, and trained maintenance teams were unavailable to support the high-tech weapons systems purchased from the West.⁸² Despite Iranian naval officers being more supportive of revolutionary ideals when compared to the leadership of other military branches, the navy's defense spending was cut by one-third and approximately 5,000 sailors deserted the force.⁸³ Upon convincing clerical leadership to endorse IRGC actions and attract popular support for the security force, Khomeini transformed the early revolutionary undertones of the organization into a durable military force. The IRGC expanded its reach outside of its security activities to include intelligence gathering and economic development. This growing influence quickly made the IRGC a social and cultural force within the Islamic Republic.⁸⁴ Popular support for the IRGC was tied to the organization's adherence to revolutionary ideology that challenged Western imperialism

⁸⁰ Alemzadeh, "The Islamic Revolutionary Guards Corps in the Iran-Iraq war," 628.

⁸¹ Afshon Ostovar, *Vanguard of the Imam: Religion, Politics, and Iran's Revolutionary Guards* (New York: Oxford University Press, 2016), 41.

⁸² El-Shazly, *The Gulf Tanker War*, 182.

⁸³ Navias and Hooton, *Tanker Wars*, 24.

⁸⁴ Ostovar, *Vanguard of the Imam*, 5.

across the Middle East.⁸⁵ Decades of foreign involvement in the region fueled many of the protests during the revolution and these sentiments were widely shared throughout IRGC leadership. The IRGC's military capability, resolve, and staying power would be tested, however, during the Iran-Iraq War.

The IRGC established itself as a legitimate military force early into the conflict with Iraq. Although an overall lack of training and experience hindered the organization, aggressive human wave tactics and persuasive leadership allowed the IRGC to become a strategic component of the war effort.⁸⁶ At the outbreak of the Iran-Iraq War, the traditional military still outpaced the IRGC in funding and equipment. Despite the logistical disparity between the forces, the devotion of IRGC soldiers to Islamic Republic ideals propelled the organization's status. The purge of traditional army soldiers throughout the revolution resulted in the force being left with around one-third of its manpower.⁸⁷ The IRGC was ready to take advantage of the opportunity and were critical to repelling Iraqi advances throughout the war as a supplemental force. The prolonged nature of the Iran-Iraq War was capitalized on by IRGC leadership to consolidate Khomeini's power back home.⁸⁸ With the traditional army deployed along the western front lines and occupied with invading Iraqi forces, opportunities to challenge the Islamic Republic's regime diminished.

Due to the limited military capabilities of the IRGC in its infancy, leadership continued to rely upon the devotion of their ranks as their point of strength. By indoctrinating them with an ideology centered around religion, the revolution, and Khomeini, IRGC soldiers were willing to take extreme measures for the preservation of the Islamic Republic.⁸⁹ While the regime undoubtedly strove for clear victory in the Iran-Iraq War, the definition of success was messaged differently among the IRGC ranks.

⁸⁵ Reza Parchizadeh, "The Revolutionary Guards: The Anatomy of a State Terrorist Organization," *The Begin-Sadat Center for Strategic Studies*, BESA Center Perspectives Paper no. 1709 (August 2020).

⁸⁶ Ostovar, *Vanguard of the Imam*, 64.

⁸⁷ Alemzadeh, "The Islamic Revolutionary Guards Corps in the Iran-Iraq war," 628.

⁸⁸ Frederic Wehrey, Jerrold D. Green, Brian Nichiporuk, Alireza Nader, Lydia Hansell, Rasool Nafisi, and S.R. Bohandy, "The Rise of the Pasdaran: Assessing the Domestic Roles of Iran's Islamic Revolutionary Guards Corps," *National Defense Research Institute* (2009): 25.

⁸⁹ Ostovar, *Vanguard of the Imam*, 66.

Sacrifice and suffering for the benefit of the Islamic Republic were conveyed as the rewards of war themselves, regardless of the outcome.⁹⁰ IRGC soldiers were expected to understand that the lasting goals of the revolution warranted their steadfast resolve, even in the face of unfavorable odds. As the Iran-Iraq War continued and the IRGC's role expanded, the organization was granted a larger portion of the Islamic Republic's resources. With the IRGC offering better pay, social status, and job opportunities after time of service, recruitment among young men increased.⁹¹ Even with the war seemingly in a stalemate, the IRGC was growing in military capability, political reliability, and economic influence.

The rise of the IRGC and its evolution from a small-scale regime security service into a central military force is paralleled by the IRGCN's own growth.⁹² As the United States became more invested in the outcome of the Iran-Iraq War, their intelligence community noticed Iran's credible threat against oil shipping as early as March 1984.⁹³ Despite U.S. military presence already in the Persian Gulf, Iranian asymmetric naval warfare and the threat of kamikaze tactics by small boats armed with explosives led the United States to deploy warships in larger numbers. The IRGC began to utilize the maritime domain in 1984 during amphibious offensives in southern Iraq. Marshland boats were used to transport soldiers and supplies in a timelier fashion as the land war began to stall out.⁹⁴ The expanding use of the Persian Gulf during the Iran-Iraq War led to the IRGCN being officially established in September 1985 as an independent maritime service. In February 1986, the IRGCN played a critical role in the seizure of Iraq's al-Faw Peninsula. Using the Shatt al-Arab waterway, IRGCN small boats transported troops and supplies to aid in the war effort.⁹⁵ During their first full year of service, IRGCN operations

⁹⁰ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 35.

⁹¹ Emanuele Ottolenghi, *The Pasdaran: Inside Iran's Islamic Revolutionary Guard Corps* (Washington, D.C.: FDD Press, 2011), 9.

⁹² Himes, "Iran's Two Navies," 13.

⁹³ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 16.

⁹⁴ Haghshenass, "Iran's Asymmetric Naval Warfare," 4.

⁹⁵ Office of Naval Intelligence, "Iran's Naval Forces," 1.

would exclusively entail other support roles. In September 1986, the IRGCN began to take part in combat operations throughout the Persian Gulf.⁹⁶ In their first operation, the IRGCN temporarily seized an abandoned Iraqi offshore oil terminal that was used as an intelligence gathering outpost at the mouth of the Shatt-al-Arab.⁹⁷ The success of the IRGCN operation gave the organization confidence in their ability to widely enact naval swarming operations and led to an increased investment in IRGCN naval capabilities.

IRGCN officers and sailors were revolutionary conscripts dedicated to the Islamic Republic's cause but lacked proper naval training.⁹⁸ Religious zeal was depended upon to make up for their inexperience. Islamic Republic leadership relied on the aggressive passion of IRGCN sailors to deny culpability with the organization's earliest operations and avoid repercussions from the United States. By 1987, the IRGCN had approximately 20,000 sailors operating from two main naval bases (Abu Musa and Farsi Island).⁹⁹ The bulk of IRGCN assets came from a converted order of 45 Swedish-built, Boghammer Marin Company speedboats. Around 42 feet in length, these aluminum framed small boats could sustain speeds of 40 knots and sprint at 60 knots for short periods.¹⁰⁰ Boghammers, lightly armed with machine guns and rocket launchers, operated in patrols of three or four units and slowly began to see more operational use.¹⁰¹ The IRGCN quickly became aware of the vulnerability small boats had in suboptimal sea conditions. One of the IRGCN's most notable swarming attacks against Saudi Arabia's Khafji oilfields on October 3, 1987 resulted in the IRGCN flotilla being stranded at sea once the command boat lost its way.¹⁰² Even with deficiencies in communications and naval maneuvering, the low cost, high speed, and ease of use of IRGCN small boats caused the assets to remain a necessary part of Iranian maritime strategy. The IRGCN steadily increased attacks on carefully identified

⁹⁶ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 16.

⁹⁷ Haghshenass, "Iran's Asymmetric Naval Warfare," 5.

⁹⁸ Crist, "Gulf of Conflict," 15.

⁹⁹ Navias and Hooton, *Tanker Wars*, 151–152.

¹⁰⁰ Charles Koburger, *Narrow Seas, Small Navies, and Fat Merchantmen: Naval Strategies for the 1990s* (New York: Praeger, 1990), 111.

¹⁰¹ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 17.

¹⁰² Haghshenass, "Iran's Asymmetric Naval Warfare," 5.

oil tankers and platforms that presented easy targets. Moving forward, any attempt by Iran to challenge enemy forces within the maritime domain would be conducted with some combination of asymmetric naval threats.

C. TANKER WAR

An outgrowth of the Iran-Iraq War, the Tanker War was the maritime component to a conflict that was otherwise dominated by land and air warfare. The general military objective, from both Iran and Iraq, was to disrupt the shipment of oil and military supplies to the adversary, thereby, breaking the conflict's stalemate occurring on land.¹⁰³ Similar to how the Iran-Iraq War left a lasting imprint on the strategic development of Iranian ground forces, the Tanker War shaped Iranian naval warfare. What began in 1984 as low-scale tit-for-tat strikes on oil platforms and shipping, ended with direct involvement of U.S. conventional sea power. Over the course of the Tanker War, a total of 411 ships came under attack by land, sea, air, or mines.¹⁰⁴ Iran alone attacked 190 ships from 31 countries and drew the U.S. Navy into its largest surface battle since World War II.¹⁰⁵ Although the scale of naval warfare was vastly different between the Tanker War skirmishes and World War II battles, this demonstrates how Persian Gulf stability depended upon U.S. naval intervention and involvement in the region. Despite Iran's decisive loss in the Tanker War, asymmetric naval warfare persists as Iran's only viable means to provide coastal defense. Without the ability to obtain a large conventional naval force, Iran has no choice other than to improve upon the strategic failures observed during its last major surface engagement.

Lacking a navy capable of conducting operations in the Persian Gulf, Iraq's involvement in the Tanker War was predominantly from the air. Although Iraq proclaimed waters near the Iranian northern coast a prohibited war zone, they were unprepared to enforce such declarations by sea. Using the French-made Exocet air-to-surface missile,

¹⁰³ Harold Lee Wise, *Inside the Danger Zone: The U.S. Military in the Persian Gulf 1987–1988* (Annapolis: Naval Institute Press, 2007), 7.

¹⁰⁴ Navias and Hooton, *Tanker Wars*, 183.

¹⁰⁵ Crist, "Gulf of Conflict," 1.

Iraq threatened Iranian shipping in an extension of their air campaign.¹⁰⁶ Iraq's reduced ability to distinguish Iranian vessels from foreigners in the air slowed their execution of military operations.¹⁰⁷ A misstep could turn the international community against Saddam Hussein, therefore, Iraq remained cautious in their strikes. Iran, on the other hand, used naval surface combatants as their primary means of attacking shipping by the end of 1986. Even with operational setbacks caused by the tumultuous Islamic Revolution, Iran maintained the largest navy of Persian Gulf states. Beginning in early 1987, hit-and-run operations from swarming vessels occurred more frequently and were typically unopposed. Iran was effective in implementing a blockade on Iraqi ports and identifying merchant vessel targets.¹⁰⁸ Iran's major weapon threat was the Chinese-made Silkworm anti-ship cruise missile (ASM), which was three times larger than the Exocet missile. All shipping within the Strait of Hormuz was within Iran's range and vulnerable to missile attacks in an area labeled the Silkworm Envelope.¹⁰⁹ An additional asymmetric naval threat of sea mines deployed in the major shipping lanes of the Persian Gulf escalated operational risk in the region. Already concerned with the potential political and economic consequences of an expanding maritime conflict, the U.S. Navy entered the Tanker War in a much larger capacity by mid-1987.

Iran's decision to attack the Iraqi economy and war effort through the maritime domain came with risk. Outside of attacking oil pipelines in Turkey by land, Iran was left with two maritime options: attack neutral ships bound for Kuwaiti ports or indirectly attack Iraq by striking tankers from countries supportive of Saddam Hussein.¹¹⁰ Iran proceeded with the latter option in a calculated manner to avoid confrontation with the United States. While the United States seemed willing to actively defend shipping in the Persian Gulf, Iran was confident the United States had no plans to conduct offensive attacks on Iranian

¹⁰⁶ Wise, *Inside the Danger Zone*, 7.

¹⁰⁷ Navias and Hooton, *Tanker Wars*, 28.

¹⁰⁸ Navias and Hooton, *Tanker Wars*, 31.

¹⁰⁹ Wise, *Inside the Danger Zone*, 8.

¹¹⁰ Michael Palmer, *Guardians of the Gulf: A History of America's Expanding Role in the Persian Gulf, 1833–1992* (New York: The Free Press, 1992), 120–121.

territory. To prevent war with the United States, Iran chose to strike large, slow-moving crude oil tankers rather than warships. Iranian missile attacks on stationary targets, such as Kuwaiti oil facilities and anchored vessels, demonstrated their commitment to this strategy.¹¹¹ As Iranian operations in the Tanker War expanded, Iran would slowly draw more foreign naval forces into the Persian Gulf. As the effects of the war impacted more countries, allied naval forces became critical in forcing Iranian leadership to reconsider their anti-shipping operations.¹¹² If Iran was unable to achieve victory in the maritime domain, they would be forced to abandon their campaign on land as well.

The United States was drawn into the regional conflict through the attack on the USS *Stark*, Kuwaiti's call for protection of tankers, and the lingering threat of Soviet influence making its way into the Middle East. The *Stark* was struck by two Exocet missiles from Iraqi aircraft while conducting routine operations in the Persian Gulf on May 17, 1987.¹¹³ As news of the attack returned to the United States, it became apparent that the value placed on American sailors and national reputation would force a U.S. military response. Rather than blame Iraq for the attack on *Stark*, Iran was accused of creating the confusing environment which caused the incident. A request from Kuwait for the United States to provide naval escorts for oil tankers was accepted and preparations were expedited in wake of the *Stark* incident.¹¹⁴ The United States could respond to the loss of American sailors and provide a stabilizing force in the Tanker War. While Kuwait was genuinely interested in the immediate protection of its ships, the larger goal was to end the conflict between Iran and Iraq. Kuwait was actively requesting assistance from both the United States and Soviet Union to involve a superpower in the Persian Gulf.¹¹⁵ Ending the Tanker War would normalize maritime traffic in the Persian Gulf and return economic stability to a region that depended upon the free flow of goods through the Strait of Hormuz.

¹¹¹ Haghshenass, "Iran's Asymmetric Naval Warfare," 6.

¹¹² Navias and Hooton, *Tanker Wars*, 2.

¹¹³ El-Shazly, *The Gulf Tanker War*, 282–292.

¹¹⁴ Lee Allen Zatarain, *America's First Clash with Iran: The Tanker War, 1987–1988* (Philadelphia: Casemate Publishers, 2008), 54.

¹¹⁵ Zatarain, *America's First Clash with Iran*, 30.

Operation Earnest Will, the name given to the American re-flagging and protection of Kuwaiti tankers operation, provoked an Iranian response to include mining operations within Persian Gulf shipping lanes where convoys would transit. The *Bridgeton* was the first tanker casualty under U.S. escort to withstand a mine strike. With 1–1/8 inch thick plating, compared to the 5/8 inch plating on U.S. Navy warships, the mine blast did not place the *Bridgeton* out of service. However, if one of the three escorting warships would have struck the mine, the combination of densely packed fuel and explosive ordnance onboard could have been detrimental. The *Bridgeton* sustaining only moderate damage did not prevent Iranian celebration. The Islamic Republic presented this as a major victory for Iran and a massive humiliation for the United States which had expended enormous resources in preparing for Operation Earnest Will. The United States, now aware of the danger mines presented to warships, used the *Bridgeton* as a deep draft minesweeper for the remainder of the transit. The *Bridgeton* plowed the way forward while U.S. warships fell in behind the tanker's wake. Televised images of the warships seeming to cower damaged U.S. military prestige and exposed vulnerabilities within the U.S. Navy. Silkworm missiles and swarming small boats were of a greater concern and occupied the minds of U.S. Navy leadership prior to their increased commitment to the region. The mine threat was almost an afterthought and the failure to anticipate such tactics triggered intense criticism. Iran was depending on the *Bridgeton* incident to challenge U.S. commitment in the Persian Gulf. Iran had observed the United States leaving their war in Vietnam and reflected on U.S. inaction in the aftermath of the Shah's removal during the Islamic Revolution.¹¹⁶ The asymmetric naval threat of mines would be further used to test U.S. political will.

Emboldened by their small victory, Iran continued its tactics and use of media to continue eroding the confidence of their adversary. Two more vessels would strike mines, the *Texaco Caribbean* and the *Anita*, causing the United States to plea for help from European allies for minesweeper support.¹¹⁷ The lack of minesweepers available from the

¹¹⁶ Zatarain, *America's First Clash with Iran*, 70–75.

¹¹⁷ Wise, *Inside the Danger Zone*, 84.

U.S. Navy became a glaring hole in their ability to combat the Iranian threat. It was not until the United States caught the *Iran Ajr* in the act of laying mines that the United States would win over the international community for additional assistance in the Persian Gulf.¹¹⁸ Although Iranian mining operations came to a halt, they did take advantage of the *Sea Isle City* underway without escort. Iranians attacked the vessel with a Silkworm missile and made their strategy clear. Iran would avoid direct confrontation with the United States and only strike in ways where it was difficult for the United States to warrant a clear response.¹¹⁹ While the United States and Iran had not erupted into open conflict, the potential for lower-level military action continued to rise. In response to the growing threat, the United States mobilized equipment and resources in the region to erect Mobile Sea Bases (floating military barges) which could stage small boats and helicopters.¹²⁰ These bases were typically positioned around twenty miles from Farsi Island, providing surveillance and a more rapid response to Iranian aggression against escort operations.

After an extended period without the threat of Iranian mines it seemed that the tactic was abandoned. However, when the USS Samuel B. Roberts (FFG 58) struck a mine it became evident that the threat was still real. The mine caused significant damage, astounding many experts as to how the crew saved the ship from sinking. Captain Rinn, commanding officer of *Samuel B. Roberts*, was in routine communication with U.S. Navy leadership and was questioned multiple times as to when he planned on abandoning ship. The plans were unnecessary as damage control efforts by sailors throughout the night saved the ship as it made its way back towards Bahrain. In the end, *Samuel B. Roberts*' repairs would take 18 months, amounting to \$96 million. The Iranian mine causing the extensive damage likely cost no more than \$1,500.¹²¹ In response to the *Samuel B. Roberts* mine strike, the United States began planning retaliatory strikes. The resulting operation would demonstrate Iran's willingness to challenge the United States in the maritime domain.

¹¹⁸ Zatarain, *America's First Clash with Iran*, 120.

¹¹⁹ El-Shazly, *The Gulf Tanker War*, 248.

¹²⁰ Zatarain, *America's First Clash with Iran*, 184.

¹²¹ Zatarain, *America's First Clash with Iran*, 201.

D. OPERATION PRAYING MANTIS

U.S. response to the *Samuel B. Roberts*' mine strike was carefully planned. While the United States intended to send Iran a message that attacks on U.S. warships would not go unanswered, the U.S. political climate was not conducive to escalating tensions in the Middle East. Strikes on Iran's mainland or islands were out of the question as they would be perceived as a direct siding with Iraq in the overarching conflict. Additionally, the United States wanted to keep the military response proportional to guarantee smooth execution and reduce the opportunities for failure. Iran damaging a single unit or highlighting any shortcoming of the U.S. operation could end up being an Iranian propaganda victory.¹²² Therefore, U.S. plans for Operation Praying Mantis centered around Iranian assets that were critical to their Tanker War campaign. Targets were selected that would greatly diminish Iran's ability to persist in attacking civilian shipping throughout the Persian Gulf.

Operation Praying Mantis sought to destroy Iran's Sasson and Rakesh oil platforms as well as the frigate *Sabalan*. A significant portion of Iranian attacks on shipping came within 50 nautical miles of oil platforms like these.¹²³ When the U.S. Navy launched the operation, Iranian naval forces rushed in defense. Several accounts of the operation through news and media reported Iran as losing over half of its total naval forces. In actuality, the Iranians lost about one-fifth of their naval units. The units lost, however, were significant. Half of Iran's Saam-class frigates, the *Sahand* and the *Sabalan*, were placed out of action by the end of the day's battle. The humiliating loss caused Iranian naval forces to withdraw from patrolling the Strait of Hormuz.¹²⁴ Iran was careful to not cross a U.S. redline by using Silkworm missiles during the confrontation. The United States was clear that use of the missile, or even a fire control solution, on a U.S. warship would cause a severe reaction.¹²⁵ Iran's actions throughout most of the Tanker War were highly selective and

¹²² Wise, *Inside the Danger Zone*, 190–191.

¹²³ Crist, "Gulf of Conflict," 18.

¹²⁴ Zatarain, *America's First Clash with Iran*, 291.

¹²⁵ Zatarain, *America's First Clash with Iran*, 259.

attempted to delicately balance efforts of demonstrating strength without inciting an overwhelming U.S. response. As Iranian naval forces began to respond to Operation Praying Mantis, vessels arrived on scene disjointed allowing the superior force to approach threats one at a time. Furthermore, Iran's conventional navy operated independently from the IRGCN small boats. Without efforts to coordinate their defense, the United States easily countered their threat.¹²⁶ Despite the investment in asymmetric naval warfare, Iran deviated from their strategy and attempted to combat the United States on a symmetric level. Iran's main miscalculation throughout the Tanker War was in the American resolve and political will to remain in the Middle East.¹²⁷ The United States did not depart at the first sign of Iranian resistance, they retaliated with superior force.

Despite the embarrassment felt by Iranians at the hands of Operation Praying Mantis, IRGCN leadership remains convinced that an asymmetric approach can balance against U.S. naval power. The Iranians learned many lessons from that single day of combat. This has left Iran feeling that despite their glaring mistakes in battle, if the asymmetric approach were properly applied a different outcome may have occurred.¹²⁸ Realistically, Iran has no other options to explore strategically within the maritime domain. Whether asymmetric naval strategies are best suited to counteract the U.S. Navy is irrelevant as Iran cannot commit to any other approach.

E. CONCLUSION

Iran's current approach to naval warfare is self-recognizably a suboptimal choice. However, given the economic restraints and continued isolation from the international community, Iran is left with few viable options. Any future attempt to challenge enemy forces in the maritime domain will be conducted using asymmetric naval strategies and tactics. This chapter demonstrated Iran's historical interest in the maritime domain. Favorable relations with the United States granted Iran unprecedented access to defense industries capable of providing the IIN with the latest naval technology. The Islamic

¹²⁶ Wise, *Inside the Danger Zone*, 200–201.

¹²⁷ Crist, "Gulf of Conflict," 11.

¹²⁸ Crist, "Gulf of Conflict," 16.

Revolution changed the trajectory of Iran in several aspects, to include the procurement and maintenance of a naval fleet. This event, and its ongoing effects, have altered Iran's national security strategy, economic development, and political standing in the world. Adherence to self-reliance means that Iran, with its limited domestic capability, can only use alternative and cost-effective methods of asymmetric naval warfare. Although the Islamic Republic would prefer a naval strategy based on conventional forces, the means to do so are far from their grasp. The Tanker War, ending with Operation Praying Mantis, serves as the only major naval surface engagement that Iran has had with the United States. Despite early Iranian successes with the use of sea mines, the U.S. Navy easily countered Iranian asymmetric naval threats once fully mobilized. As the United States deployed additional units to the Persian Gulf, Iran became increasingly aware that the superpower was committed to ending the Tanker War. Sustained operations from the U.S. Navy deterred Iran from using Silkworm ASMs and reduced IRGCN patrols of the Strait of Hormuz. Despite their defeat, IRGCN leadership continue to shape the organization's military doctrine, training, and asset procurement around lessons learned from the Tanker War. Iran is devoted to asymmetric naval warfare for defense of its coastal waters.

III. CAPABILITIES AND LIMITATIONS

Seeking to overcome strategic shortcomings of the Tanker War, Iran relies upon technological advancements to enhance its asymmetric naval threat. Outside of these improvements, Iran's core assets used to challenge adversaries within the maritime domain have essentially remained the same since the late 1980s. Over forty years of pursuing a national security strategy based on self-reliance has limited Iran's options in acquiring modern military weaponry. This chapter provides a broad overview of Iran's capabilities and limitations within the maritime domain. First, differences between Iran's two naval forces, the IRGCN and IRIN, are discussed. Understanding Iran's intention for each organization will better situate the capabilities and limitations that both navies have while conducting operations at sea. Second, Iran's defense industry is explored to determine the state's domestic capacity to manufacture ships and weapons in support of Iran's ambitions. Lastly, Iran's principal asymmetric naval threats are expounded upon to provide a better understanding of Iranian capability within the maritime domain. The research confirms Iran's unwavering commitment to a naval strategy based on sea denial and coastal defense. With a defense industry limited by financial constraints and infrastructure capacity, Iran continues to pursue interests in the maritime domain through comparatively inexpensive asymmetric naval assets. However, depending upon Iran's willingness to engage in transactional relationships with foreign states, Iran may become increasingly comfortable with using the maritime domain to pursue naval diplomacy with countries that also seek to challenge U.S. interests in the region. The prospect of Iran adding blue-water capabilities or coordinating naval exercises and deployments with transactional partners supplements Iran's asymmetric approach to the maritime domain.

A. IRAN'S TWO NAVIES

Devastating losses incurred during Operation Praying Mantis led Iran to reevaluate its anti-shipping campaign and patrols of the Strait of Hormuz. The remaining warships of the IIN were deemed incapable of challenging the United States in naval surface engagements. Even if IIN warships were optimally manned and outfitted with the latest

technology, Iran could not amass a conventional force large enough to challenge the U.S. Navy in symmetrical combat. Rather than spend its limited resources on conventional warships, Iran deepened its commitment to asymmetric naval warfare. Iran concluded that deterring U.S. presence in the Persian Gulf was more cost-effective and achievable through use of IRGCN FIACs, ASMs, and sea mines. Following the Tanker War, Iranian naval capabilities remained split between two distinct maritime services with overlapping areas of responsibility. Today, the IRGCN and IRIN continue to compete for financial resources and relevance within the Islamic Republic. Two-thirds of Iran's total defense budget is allotted to the IRGC and its subordinate units. The remaining one-third of Iran's defense budget is split among the traditional military force.¹²⁹ The IRGCN operates as Iran's favored naval organization because of its evolving asymmetric threat and loyalty to Islamic Republic ideals. The IRIN, primarily composed of remnants from the Shah's IIN, is maintained for use as threats against other regional navies. Until recently, the Islamic Republic's favoritism of the IRGCN pushed the IRIN to operate as nothing more than a ceremonial force. Decades of preferential treatment allowed the IRGCN to expand their maritime capability and outpace IRIN growth. In 2007, reorganization of the maritime services and their command-and-control structures clearly delineated separate mission sets for Iran's navies.¹³⁰ While the IRGCN's status within the Islamic Republic remains secure, the change has granted limited space for the IRIN to explore blue-water interests, test new oceangoing platforms, and entertain naval diplomacy with potential transactional partners.

1. IRGCN

The IRGCN, serving as Iran's premier naval force, relies upon a diverse set of asymmetric threats to project strength across the Persian Gulf, pursue regional hegemony, and deter perceptions of U.S. aggression.¹³¹ This chapter's discussion on Iranian maritime capabilities will mostly reflect assets controlled by the IRGCN. The organization's military

¹²⁹ Kenneth Katzman, *Iran's Foreign and Defense Policies*, CRS Report No. R44017 (Washington, D.C.: Congressional Research Service, 2021), <https://sgp.fas.org/crs/mideast/R44017.pdf>, 15.

¹³⁰ Himes, "Iran's Two Navies," 6.

¹³¹ Farzin Nadimi, "Iran Signals a Toughened Stance by Adding to Its Naval Arsenal," *The Washington Institute for Near East Policy*, Policy Watch 3335 (June 2020).

doctrine remains fixated around “guerilla war at sea,” as it was first characterized by United States General George Crist during the Tanker War.¹³² With an emphasis on stealth and speed, the limited capabilities of each individual IRGCN unit seek to overcome the technological superiority of adversaries by overwhelming targets with sheer numbers. The IRGCN’s official mission is to provide Persian Gulf defense and coastal security. The organization maintains approximately 20,000 sailors in active service.¹³³ IRGCN training focuses on the deployment of swarming surface vessels and weapons saturation against vulnerable shipping entering or exiting the Strait of Hormuz’s choke point. The asymmetric naval threat is maximized through the expansion of ports, offshore structures, and missile launch sites along Iran’s vast coastline. By increasing the number of sites potential threats could come from, the IRGCN attempts to complicate U.S. decision-making processes and military responses. Individual missile launch sites or weapons storage facilities are difficult to detect and an inefficient use of expensive U.S. ordinances.¹³⁴ This allows the IRGCN to conduct targeted, low-scale operations without provoking conflict with the United States.

Iran’s regional influence over the maritime domain is dependent upon the level of U.S. naval support to GCC partners. If U.S. involvement in the region decreases, Iran can exercise more control over maritime traffic and harass Gulf state rivals. The IRGCN threat cannot be evaluated exclusively on its ability to defeat conventional sea power or to exert sea control over the Persian Gulf. Evident from Operation Praying Mantis, Iran would likely lose a significant portion of their maritime assets in outright naval warfare. The IRGCN’s challenge to adversaries within the maritime domain should be measured by their advantages over Middle Eastern navies and ability to increase the risk associated with the U.S. Navy operating in the Persian Gulf.¹³⁵ Despite the IRGCN’s lack of conventional naval power, their naval force remains quantitatively and qualitatively superior to other

¹³² Crist, “Gulf of Conflict,” 4.

¹³³ Katzman, *Iran’s Foreign and Defense Policies*, 16.

¹³⁴ Anthony H. Cordesman, “Iran’s Developing Military Capabilities,” *Center for Strategic and International Studies* 27, no. 4 (2005): 64.

¹³⁵ Cordesman, “Iran’s Developing Military Capabilities,” 65.

regional navies. GCC navies have an approximate combined manpower of 24,700 sailors compared to Iran's total complement of 38,000 sailors between the IRGCN and IRIN.¹³⁶ Although the United States is confident in their ability to counter Iranian threats, the political cost of a timely asymmetric strike could cause the U.S. Navy to operate with caution. For the IRGCN's deterrence objective, causing the U.S. Navy to pause and reconsider movements in the Persian Gulf is a notable achievement.

2. IRIN

The IRIN struggled to remain a relevant naval force as Iran shifted away from conventional sea power and towards asymmetric naval warfare. The rise of the IRGCN made IRIN financial requirements and operational tasking an afterthought for decades, relegating the IRIN to a support role.¹³⁷ Reductions to IRIN budgets began shortly after Khomeini's accession as the new Islamic Republic believed that the traditional military force maintaining access to Iran's best weapons systems could assist opposition in an attempted coup.¹³⁸ The continued emphasis on asymmetric naval warfare prevented the IRIN from obtaining the funds necessary for modernization of vessels acquired during the late 1970s.¹³⁹ With approximately 18,000 sailors in the service today, the IRIN is afflicted with limitations due to lack of innovation since the Islamic Revolution.¹⁴⁰ A significant portion of IRIN resources are exclusively used to preserve an aging fleet of Western-built ships without access to Western defense industries.¹⁴¹ Despite these glaring shortfalls and the disadvantage that IRIN vessels would have in combat with the U.S. Navy, the IRIN fleet remains noteworthy by Gulf standards.¹⁴² While the IRGCN's smaller ships and

¹³⁶ Katzman, *Iran's Foreign and Defense Policies*, 29.

¹³⁷ Anthony H. Cordesman, "The Gulf: How Dangerous Is Iran to International Maritime Security?" in *Routledge Handbook of Naval Strategy and Security*, ed. Joachim Krause and Sebastian Bruns (London: Routledge, 2016), 106.

¹³⁸ Nadimi, "Iran Signals a Toughened Stance by Adding to Its Naval Arsenal."

¹³⁹ Himes, "Iran's Two Navies," 15.

¹⁴⁰ Cordesman, "The Gulf," 105.

¹⁴¹ Office of Naval Intelligence, "Iran's Naval Forces," 20.

¹⁴² Anthony H. Cordesman, *Iran's Military Forces in Transition: Conventional Threats and Weapons of Mass Destruction* (London: Praeger, 1999), 187.

assets are designed purely for asymmetric means against the U.S. Navy, the IRIN projects Iranian influence against other Persian Gulf navies.

Recent Iranian investments in the maritime domain may revive the IRIN's applicability to the government's naval strategy. Iran's Naval Industries Organization of the Armed Forces (NIO) plan to develop shipyards capable of building larger oceangoing ships through the Negin project. Created in January 2019, the NIO oversees all of Iran's naval research and development for surface assets, subsurface units, and naval weapons systems. The goal is to design and build a 5,000-7,000 ton destroyer class with vertical missile-launching capability.¹⁴³ While Iran often makes overly ambitious claims about its military capabilities, if such a project came to fruition the IRIN would likely have a role in testing these acquisitions. Until new surface combatants are available, the IRIN focuses on extending its nautical reach with its current inventory. The absence of an extensive auxiliary fleet prevents the IRIN from supporting regular rotations of blue-water deployments, but does not inhibit operations at sea with a more limited scope.¹⁴⁴ Naval force reorganization in 2007 allowed the larger surface vessels of the IRIN to focus on operations outside of the Persian Gulf. The IRIN has reduced its involvement in naval training and live fire exercises to reduce costs associated with fuel, spare parts, and supplies. At the detriment of fleet readiness and optimization, this increases resources available for deployments to places such as China, Syria, and Sudan.¹⁴⁵ The recent maiden Atlantic voyage of *Makran* and *Sahand* demonstrates Iran's commitment to expanding naval operations.¹⁴⁶ Successful long-range deployments from the IRIN will likely set the precedent for future IRGCN blue-water missions as their own maritime capabilities continue to expand. The IRGCN is currently building a new class of conventional warships based on the existing catamaran *Shahid Nazeri*.¹⁴⁷ Constructed from Shahid Mahallati

¹⁴³ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 38.

¹⁴⁴ Office of Naval Intelligence, "Iranian Naval Forces," 30.

¹⁴⁵ Harmer, "Iranian Naval and Maritime Strategy," 16.

¹⁴⁶ Farzin Nadimi, "Iran's Atlantic Voyage: Implications of Naval Deployments to Venezuela or Syria," *The Washington Institute for Near East Policy*, Policy Watch 3500 (June 15, 2021).

¹⁴⁷ H.I. Sutton, "Iran's New Missile Corvette Could Reshape IRGC Naval Doctrine," *United States Naval Institute*, (March 2021).

Shipyard in Bushehr, a small boatyard in Bandar Abbas, and a new shipyard near Shib Deraz on the island of Qeshm, the IRGCN will compete with the IRIN for control over conventional naval forces moving forward.

While the IRGCN is tasked with Persian Gulf defense and deterring U.S. involvement in the region, the IRIN is given a broader role to pursue limited blue-water interests and cultivate transactional relationships. This allows the organization to focus on operations near Iran's southeastern coast in the Gulf of Oman.¹⁴⁸ Iranian leadership foresee the expansion of IRIN deployments as part of a long-term strategy to promote Iranian influence beyond the Persian Gulf.¹⁴⁹ Naval exercises with China, India, Oman, Pakistan, and Russia demonstrate Iran's use of the IRIN as a mechanism to increase Iranian prestige.¹⁵⁰ While Iran maintains a national security strategy based on self-reliance, decades of international isolation has negatively impacted Iran's economic and military development. This has restricted Iran's options for achieving deterrence objectives. A recent openness to transactional relationships with states antagonistic to U.S. power and influence demonstrates Iran's willingness to temporarily deviate from a hardline self-sufficiency approach to national security. While transactional relationships are unlikely to blossom into lasting alliances, Iran can leverage these relationships against U.S. interests in the region. Iran's use of IRIN naval diplomacy aims to strengthen its position as a regional naval power. Since the IRGCN maintains oversight of Persian Gulf defense and sea denial strategies, the IRIN can entertain these alternative mission sets without placing Iranian national security at immediate risk.

B. IRAN'S DEFENSE INDUSTRY

Development of Iran's maritime force coincides with the regime's strategic emphasis on growing domestic defense and production capabilities. Unilateral economic sanctions from the United States have restricted Iran's ability to purchase technology and weapons from foreign markets and further reinforces their approach to indigenous asset

¹⁴⁸ Himes, "Iran's Two Navies," 19–23.

¹⁴⁹ Harmer, "Iranian Naval and Maritime Strategy," 21.

¹⁵⁰ Office of Naval Intelligence, "Iranian Naval Forces," 24.

procurement. The regime attempts to depict economic hardships as constructive for the long-term benefit of the Islamic Republic. Sanctions and economic distress are spun into a narrative to convince the public why Iran cannot fully trust anyone within the international community and must continue to focus on bolstering its own domestic defense capabilities.¹⁵¹ When Iran can acquire foreign technology, the assets are reverse-engineered and then incorporated into future designs. This approach to defense acquisitions pressures Iran's military to accept delayed production of less sophisticated and lower quality equipment.¹⁵² However, over time, an emphasis on domestic production could give Iran technical experience in advancing its defense industries. Improving proficiencies in their own production could assist in narrowing, although never overcoming, the technological gap that Iran has with the United States. The priorities of Iran's defense industry align with IRGCN requirements for Persian Gulf and Strait of Hormuz defense. Naval production focuses on smaller and faster platforms that can carry ASMs.¹⁵³ However, the division of Iran's maritime forces between the IRGCN and IRIN creates institutional tension that challenges the defense industry in meeting the needs of both organizations. Even with a clear emphasis on asymmetric naval warfare, the friction between maritime services prevents the maximization of an integrated approach to the maritime domain.¹⁵⁴ This limits Iran's defense industry effectiveness and prevents the military from obtaining the quality and quantity of assets required for national security objectives.

Iran's defense industry is stunted by economic policy decisions made by the Islamic Republic as it first came to power. International isolation caused by the Islamic Revolution, quickly followed by the prolonged Iran-Iraq War, forced the government to allocate resources towards military endeavors that could have been spent in other public sectors. Oil revenues were funding the war effort rather than being invested into education,

¹⁵¹ Maloney, *Iran's Political Economy Since the Revolution*, 474.

¹⁵² Office of Naval Intelligence, "Iranian Naval Forces," 27.

¹⁵³ Singh, "Dark Chill in the Persian Gulf," 114.

¹⁵⁴ Wehrey, Thaler, Bensahel, Cragin, Green, Kaye, Oweidat, and Li, *Dangerous But Not Omnipotent*, 39–40.

healthcare, and other basic infrastructure needs.¹⁵⁵ The long-term effects of these choices constrain Iran's economy and have reduced funds available for investment in the defense industry. Iran's domestic defense capabilities are also hindered, to some degree, by international sanctions but simultaneously reinforce the importance of developing homegrown assets in the absence of access to foreign markets. From 2013 to 2015, international sanctions reduced Iranian military spending per year by around \$9 billion.¹⁵⁶ The Trump administration claimed that its maximum pressure campaign caused Iran's defense budget to decrease by 24% for 2020–2021.¹⁵⁷ However, as a share of Gross Domestic Product, Iran's 2.7% military spending was above the global average of 2.3% from 2008 to 2017.¹⁵⁸ This indicates that international sanctions may not significantly alter Iran's economic priorities. While reductions in military spending are seen, larger impacts are evident in other sectors of the economy. Sanctions place restrictions on free trade and banking transactions that make conducting business difficult.¹⁵⁹ Nevertheless, Iran's priority on military spending has led research to conclude that U.S. unilateral sanctions a minimal long-term effect. For the United States to achieve their desired outcome, sanctions must be enforced in a multilateral effort. A coordinated effort could reduce Iranian military spending by 77% over the long-term (approximately ten years).¹⁶⁰ The Iranian economy is impacted by sanctions and a separation from the global market. Despite these obstacles, the regime has sacrificed investments in other areas to continue funding the military and defense industry for national security goals.

Naval production, in comparison to other military initiatives, requires more time, personnel, and resources. Construction is an arduous process, taking up to ten years of

¹⁵⁵ Mohammad Reza Farzanegan, "The Economic Cost of the Islamic Revolution and War for Iran: Synthetic Counterfactual Evidence," *Defence and Peace Economics* (2020): 17.

¹⁵⁶ Mohammad Reza Farzanegan, "The Effects of International Sanctions on Iran's military spending: A Synthetic Control Analysis," *Defence and Peace Economics* (2021): 10.

¹⁵⁷ Katzman, *Iran's Foreign and Defense Policies*, 15.

¹⁵⁸ Sajjad F. Dizaji and Mohammad R. Farzanegan, "Do Sanctions Constrain Military Spending of Iran?" *Defence and Peace Economics* 32, no. 2 (2021): 126.

¹⁵⁹ Mohammad Reza Farzanegan, "Military Spending and Economic Growth: The Case of Iran," *Defence and Peace Economics* 25, no. 3 (2014): 267.

¹⁶⁰ Dizaji and Farzanegan, "Do Sanctions Constrain Military Spending of Iran?" 146.

labor. Adequately training a naval force to operate warships can be just as lengthy of a process.¹⁶¹ Furthermore, a state undergoing a naval build-up must understand the initial costs, ongoing maintenance costs, and material constraints that can limit capacity. Even when the material state of a defense industry is strong, the products will hold little value if the personnel operating the equipment are unable to receive proper training.¹⁶² Budgeting for national security becomes complicated when weighing all these factors. Therefore, for Iran to optimize its spending and pose a challenge to adversaries within the maritime domain, it is critical to properly identify the most applicable threats, the best ways to counter those threats, and the availability of transactional partners willing to assist in their defense endeavors.¹⁶³ The world's shipbuilding industries of today have increasingly shifted towards dependence on other nations in a globalized society. Where a nation's domestic capacity was once critical to facilitating naval power, coordination with other nations allow medium powers additional avenues towards building naval fleets.¹⁶⁴ Due to the expense of military power, Iran is forced to balance domestic investments in the economy against the military requirements needed to protect national interests and demonstrate regional power.¹⁶⁵ Separation from the international community prevents Iran from benefitting on the increasingly interconnected shipbuilding market. While the United States can efficiently produce conventional naval power with the cooperation of partners, Iran struggles to domestically maintain an arsenal of asymmetric naval threats.

Iran's Defense Industry Organization of approximately 20,000 personnel are responsible for the production and supply of all Iran's armed forces requirements.¹⁶⁶ The NIO oversees naval research and development, focusing primarily on the advancement of blue-water capabilities. IRGCN asymmetric naval threats are produced through a coordinated effort from several other organizations. The Iran Shipbuilding and Offshore

¹⁶¹ Koburger, *Narrow Seas, Small Navies, and Fat Merchantmen*, 57.

¹⁶² J.R. Hill, *Maritime Strategy for Medium Powers* (Annapolis: Naval Institute Press, 1986), 90.

¹⁶³ Hill, *Maritime Strategy for Medium Powers*, 185.

¹⁶⁴ Hill, *Maritime Strategy for Medium Powers*, 33.

¹⁶⁵ Hill, *Maritime Strategy for Medium Powers*, 64.

¹⁶⁶ Ottolenghi, *The Pasdaran*, 49.

Industries Complex Company (ISOICO), based near Bandar Abbas, is a leading entity in shipbuilding and offshore structure construction.¹⁶⁷ While the ISOICO is known for its construction of larger cargo vessels for the Islamic Republic of Iran Shipping Line Group, they are a sister organization to other shipbuilding companies that are more directly involved with military efforts. In 2009, the IRGC-owned construction company Khatam al-Anbiya purchased 51.18% of the Iran Marine Industrial Company (SADRA).¹⁶⁸ SADRA specializes in shipbuilding and construction of docks and port facilities that are required for the IRGCN's smaller assets. The organization's construction of the supertanker *Sorocaima* for export to Venezuela became the largest ship ever built in the Middle East and points to a growing Iranian domestic capability for shipbuilding.¹⁶⁹ On the other hand, Iran's domestic shipbuilding industry does not have the access or capacity to incorporate the world's latest technology and weapons systems into ship designs. What is often touted as new by Iranian leadership are either outdated designs from the Shah's reign or prototypes that lack any evidence of operability. Reverse-engineered or restored assets from Iranian engineers are used as propaganda to assist in the continuing diversion of government funds from economic needs into military-run defense organizations. Considering Iran's economic constraints, their ability to maintain aging platforms in an operational condition is commendable. However, the capabilities of Iran's defense industry remain limited to designs deemed obsolete by U.S. standards.¹⁷⁰ Resources for future research and development remain heavily limited and will continue to lag behind defense industries of the West. Iran's narrow capacity for domestic defense production, without any significant changes, will steadily fall behind the operational needs of Iran's lofty ambitions.

A more precise knowledge of Iran's defense industry capabilities is limited due to the classified nature of reports pertaining to Iran's research and development spending.

¹⁶⁷ Robert Czulda, "Defence Industry in Iran – Between Needs and Real Capabilities," *Defense & Security Analysis* 36, no. 2 (2020): 204.

¹⁶⁸ Robert Czulda, "Defence industry in Iran," 210.

¹⁶⁹ Harner, "Iranian Naval and Maritime Strategy," 31.

¹⁷⁰ Czulda, "Defence industry in Iran," 212–213.

Iran's defense industry has remained isolated from Western assistance since 1979 after the fall of the Shah's regime. U.S. support of Iran immediately stopped and beginning in 1984 the United States officially sanctioned any weapons sale to Iran. In 1995, all U.S. trade with Iran was banned.¹⁷¹ Within the maritime domain, Iran's defense industry has demonstrated an ability to reverse-engineer modern engines and continues to develop electronics, radar, and communication systems.¹⁷² Swarming small boats dependence on communication and navigation make advancements in these systems critical to improving Iran's asymmetric approach. Iran's improvements in shipbuilding and offshore floating oil rigs have garnered the attention of the international community.¹⁷³ Germany, Belgium, and Venezuela have all pursued contracts with SADRA and ISOICO for their own maritime needs. Iran's defense industry accomplishments, from a regional perspective, are meaningful. However, Iran will remain limited to domestic production of less sophisticated asymmetric threats. Iran's strategy within the maritime domain will continue to rely upon these inexpensive threats for use against the U.S. Navy.

C. SURFACE VESSELS

Ali Fadavi, former IRGCN Commander, stated that the speed of his small boats provided unique challenges to the modern conventional warship. His confidence was grounded in the difficulty vessels have in tracking FIAC with radar which would allow IRGCN small boats to reach their targets and employ weapons prior to being located.¹⁷⁴ Table 1 lists the IRGCN's most notable surface vessels currently in the organization's inventory. Precise figures of IRGCN assets are difficult to acquire due to the ease with which small boats can be hidden. FIAC are stored throughout Iran's coastline of inlets, coves, and other offshore structures. Furthermore, uncertainty as to whether FIAC are new construction or renovated adds to the challenge of determining accurate numbers of active IRGCN units. The Thondor fast attack craft (FAC) class, more commonly referred to as

¹⁷¹ Czulda, "Defence industry in Iran," 202–203.

¹⁷² Czulda, "Defence industry in Iran," 206.

¹⁷³ Czulda, "Defence industry in Iran," 210.

¹⁷⁴ Himes, "Iran's Two Navies," 16.

the Houdong class, was considered the IRGCN's most formidable surface vessel for years. Acquired in the 1990s from China and armed with C-802 ASMs, Iran relied exclusively on this vessel for power projection in the Persian Gulf well into the 2000s. However, due to technological advancements and the increased production of naval and airborne ASM launch platforms, the Houdong's importance has decreased.¹⁷⁵ The class remains in active service and routinely patrols Iran's coastlines among the growing arsenal of other asymmetric naval threats.

IRGCN naval asset production continues to focus on increasingly smaller, lighter, and faster craft. The Boghammer, carrying a maximum payload of 450 kilograms, is easily transported to strategic islands across the Persian Gulf by way of Amphibious Lift Ships. In addition to the IRGCN main headquarters at Bandar Abbas, the Boghammer is transported to and housed at Farsi, Sirri, and Abu Musa islands. During the IRGCN's formative years, the Boghammer was the primary surface vessel used as Iran's asymmetric naval threat during the Tanker War.¹⁷⁶ As the small boat fleet has modernized, the IRGCN has invested in other classes including the Ashoori and Seraj FIACs. The Ashoori class is a Boston Whaler type craft based on designs from the United Kingdom. Produced domestically, the Ashoori is used in multiple capacities depending on the required mission. Newer versions of the class can carry heavy machine guns, rocket launchers, or up to four contact mines.¹⁷⁷ The Seraj class, also referred to as Bladerunners, are likely the IRGCN's preferred FIAC option moving forward. The Seraj was also reverse engineered from a UK design. Its unique air-entrapment monohull gives a steadier ride at higher speeds and sea-states. Improved handling and maneuverability make this asset ideal for swarm and hit-and-run tactics.

In May 2020, Iranian media stated that 112 small boats from various FIAC classes were placed in active service by the IRGCN.¹⁷⁸ U.S. intelligence is unable to determine if

¹⁷⁵ "Islamic Revolution Guards Corps Navy – Navy," Janes, last modified October 15, 2020, <https://customer-janes-com.libproxy.nps.edu/Janes/Display/JWNA0229-JWNA>.

¹⁷⁶ Koburger, *Narrow Seas, Small Navies, and Fat Merchantmen*, 111.

¹⁷⁷ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 21.

¹⁷⁸ Janes, "Islamic Revolution Guards Corps Navy – Navy."

the vessels were upgrades from units already in service or if they truly are new additions. If the 112 units are new additions, the figure represents a considerable expansion of inshore vessels to the IRGCN inventory. These newly acquired IRGCN surface vessels claim high speeds in excess of 70 knots, carry explosives, and are intended for suicide missions. The IRGCN's surface fleet is limited by a lack of over-the-horizon weapons systems and other sensors that can extend the useful range of units. An emphasis of Iran's defense industry to upgrade radar capabilities and the expansion of miniature bases and offshore structures across the Persian Gulf seek to reduce this technological disparity.¹⁷⁹ Despite the shortcomings of individual IRGCN units, a growing inventory of FIAC expands the opportunities for swarming operations against unsuspecting vessels. As additional ports and offshore structures become readily available, IRGCN FIAC can launch offensives from a continuously expanding list of locations across the Persian Gulf. IRGCN goals to expand oceangoing capabilities are evident by new concept designs of high-aspect-ratio twin-hull support (HARTH) vessels. Based on the design of the IRGCN catamaran *Shahid Nazeri*, the organization aims to extend its naval endurance into open ocean.¹⁸⁰ These ambitions are, however, limited by the fact that the *Shahid Nazeri* has spent majority of its service time moored to a pier at IRGCN headquarters. Structural analysis of the vessel indicates that its aluminum hull is susceptible to rough seas. The IRIN's small contingency of frigates, corvettes, patrol craft, and submarines remain the only reliable blue-water capability Iran has for immediate use.

¹⁷⁹ Cordesman, "The Gulf," 105–106.

¹⁸⁰ Nadimi, "Iran Signals a Toughened Stance by Adding to Its Naval Arsenal."

Table 1. Notable IRGCN Surface Vessels. Adapted from Janes (2020).

Name	Number in Service	Design Origin	Max Speed	Weapons
Thondor (Houdong)	10	Chinese Huangfen class	35 knots	4 Noor (C-802) or 4 Ghader (C-802A)
C 14	9	Iran (two known variants)	50 knots	4 Nasr-1 (C-704)
Mk-13	10	China	60 knots	2 Nasr-1 (C-704)
Peykaap I (IPS 16)	15	North Korea	52 knots	324 mm lightweight torpedoes
Peykaap II (IPS 16 Mod)	25	North Korea	52 knots	2 Kosar (C-701) or 2 Nasr-1 (C-704)
Peykaap III	6	North Korea	52 knots	Addition of 12.7 mm machine guns to Peykaap II class
Tir (IPS 18)	10	North Korea	52 knots	533 mm torpedoes
Tarlan	15	Iran	50 knots	May support wire/laser-guided weapons system
Kashdom II	15	Iran	50 knots	12.7 mm machine guns
Shahid Nazeri	Unknown	Iran	Unknown	Used for military personnel transport
Pashe (MIG-G-1900)	10	U.S. Mk II class	36 knots	23 mm machine guns
Ghaem (MIG-S-1800)	20	Iran	18 knots	20 mm Oerlikon
Murce (MIG-G-0900)	30	Russia	30 knots	12-barrelled 107 mm rocket launcher
Ashoora I (MIG-G-0800)	100	UK	40 knots	Being replaced by Bladerunners
Boghammar	20	Iran	46 knots	RPG-7 rocket launcher and 12-barrelled 107 mm rocket launcher
Seraj (Bladerunner)	50	Iran	75 knots	12.7 mm machine gun and 11-tubed 107 mm multiple launch rocket system

Figures for IRGCN vessels in service are estimates.¹⁸¹

¹⁸¹ Janes, “Islamic Revolution Guards Corps Navy – Navy.”

D. ANTI-SHIP MISSILES

The U.S. Navy is most bothered by Iran's increasing arsenal of ASMs.¹⁸² This concern originated with Iran's acquisition of Chinese-manufactured Silkworm coastal defense cruise missiles during the Tanker War. The IRGCN's inventory of domestically produced missiles, largely based on Chinese C-802 and C-700 series cruise missiles, has expanded over the decades.¹⁸³ Attempts to modernize ASMs, extend maximum ranges, and improve accuracy are among Iran's highest priorities for naval modernization efforts.¹⁸⁴ A list of Iran's notable ASMs in service are listed in Table 2. Despite Iran's improvements in ASM technology, Iran remains unable to complete a successful widespread attack without consequence. Although Iran could feasibly carry out an initial offensive, shore-based ASM sites would immediately be exposed upon launch and serve as targets for their adversaries.¹⁸⁵ Iran mitigates the problem of U.S. retaliatory strikes by spreading the ASM threat across a growing network of launch sites. In doing so, the loss of an individual coastal defense site has minimal impact on Iran's capability to conduct further operations. Shore-based ASM sites remain attractive for Iran to employ sea denial strategies and deter security threats across the maritime domain. Since sea control remains an unattainable naval strategy for Iran to pursue, the improvement of long-range weapons systems is critical to achieving defense of territorial waters.¹⁸⁶ ASMs are used by Iran to substitute for a lack of conventional air and naval power. While Iran's missile arsenal acquired from the West during the last days of the Shah are past expiration, the operational status of domestically produced missiles remains uncertain.¹⁸⁷ A growing stockpile of advanced C-802 ASMs with increased range remains a concern for U.S. Navy warships

The Military Balance, "Chapter Seven: Middle East and North Africa," 120, no. 1 (February 2020), 348–352.

¹⁸² Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 20.

¹⁸³ Office of Naval Intelligence, "Iranian Naval Forces," 32.

¹⁸⁴ Office of Naval Intelligence, "Iran's Naval Forces," 25.

¹⁸⁵ Singh, "Dark Chill in the Persian Gulf," 122.

¹⁸⁶ Shang-su Wu, "The Modern Naval Fortress: An Additional Sea Denial Option for Coastal States," *Defence Studies* 18, no. 1 (2018): 80–81.

¹⁸⁷ Cordesman, "Iran's Developing Military Capabilities," 55.

operating in the region. Future coordination and arms deals with great powers opposed to U.S. influence could amplify the Iranian ASM threat even further.

Iranian ASM development and production is overseen by the Samen Alaeme Industrial Group which is a subordinate organization of Iran's Aerospace Industries Organization.¹⁸⁸ Various ASMs of Chinese design provide the foundation of Iran's missile defense. The Nasr (C-704) has long been the medium-range ASM of choice for Iran's Air Force and developed ship-to-ship capability as early as December 2008. In March 2014, Iran improved the Nasr by upgrading the weapon, based on Chinese C-704KD designs, with a passive television camera or infrared seeker.¹⁸⁹ The Noor (C-802) is categorized as a long-range ASM and is also in the inventory of the Iranian Air Force. The IRGCN most notably arm these ASMs on Houdong FAC but have expanded their use on other small boats as upgrades to ASM platforms are made. The radar-guided Noor ASM evolved from an earlier Chinese C-801 design and is comparable to the U.S. AGM-84 Harpoon. The Noor's improved baseline, in comparison to earlier models, comes with an increased range and warhead size. The next step in the evolution of this line of ASMs is the Ghadir. With an elongated airframe in comparison to its predecessors, the Ghadir can be deployed on an even wider array of launch mechanisms with a range of up to 300 kilometers.¹⁹⁰ Iran has also made strides in improving naval ballistic missile capabilities. The Zolfaghar Basir was unveiled in September 2020 and has a stated 700 kilometer range for coastal defense.¹⁹¹ If true, the range of this new weapon would drastically upgrade Iran's defensive capabilities and expand the reach that Iran could reliably strike targets within the maritime domain.

ASMs and ballistic missiles remain the most promising aspect of Iran's defense industry and warrants attention from the United States.¹⁹² Iran places most of its available

¹⁸⁸ The International Institute for Strategic Studies, "Open-Source Analysis of Iran's Missile and UAV Capabilities and Proliferation," (April 2021): 8.

¹⁸⁹ Janes, "Islamic Revolution Guards Corps Navy – Navy."

¹⁹⁰ Janes, "Islamic Revolution Guards Corps Navy – Navy."

¹⁹¹ Janes, "Islamic Revolution Guards Corps Navy – Navy."

¹⁹² Czulda, "Defence Industry in Iran," 207–208.

resources for future research and development into the growth of missile capabilities.¹⁹³ While all of Iran's current ASMs are subsonic, there are indications that the defense industry is aggressively seeking to acquire a ramjet engine capable of supersonic propulsion.¹⁹⁴ This upgrade, if realized, would present a significant improvement to Iran's ASM threat. Although Iran has demonstrated its ability to reverse-engineer complete missiles without modification, other hurdles remain in place. Integrating the missiles with advanced weapons systems, maintenance, testing, and overall production quality must be verified before Iran can claim success. Limited public information is available to determine Iran's entire missile production capability and stockpile. What remains certain is that Iran's missile threat remains a viable political weapon. This asymmetric naval threat is a cost-effective deterrent to U.S. naval operations in the Persian Gulf. In coordination with IRGCN surface assets, ASM weapons saturation can pressure a conventional warship's defense capabilities.

¹⁹³ Erik A. Olson, "Iran's Path Dependent Military Doctrine," *Strategic Studies Quarterly* (Summer 2016): 70.

¹⁹⁴ The International Institute for Strategic Studies, "Open-Source Analysis of Iran's Missile and UAV Capabilities and Proliferation," 26.

Table 2. Notable IRGCN Anti-ship Missiles. Adapted from Janes (2020) and *The Military Balance*.

Name	Year in Production	Range	Notes
Hormuz series	2011	300 km	Active radar-guidance system
Nasr	2010	35 km	TV-guidance like Chinese C-704KD
Nasr-e Basir	2014	35 km	Anti-jamming capabilities
Khalij Fars	2011	150 km	Based on Fateh-110 tactical ballistic missile
Zafar	2011	25 km	Short-range radar-guided optimized for use on FAC
Noor	2004	120 km	Based on Chinese C-801
Ghadir	2015	300 km	Based on Chinese C-802 and evolved form of Noor
Ya Ali	2014	700 km	Designed to be used on a cruise missile with fixed wings
Kosar	2004	15 km	Older version of the Zafar
HY-2 (CH-SSC-3 Seersucker)	1995	105 km	Possibly stopped development
K-300P	Not yet acquired	300 km	Russian coastal defense system
Zolfaghar Basir	2020	700 km	Naval ballistic missile for coastal defense system

Ranges given are approximate or stated figures from IRGC leaders. Not all systems verified in testing.¹⁹⁵

¹⁹⁵ Janes. “Islamic Revolution Guards Corps Navy – Navy.”

The Military Balance, “Chapter Seven: Middle East and North Africa,” 348–352.

E. SEA MINES

Although difficult to accurately assess Iran's inventory, mines remain an efficient way to ensure coastal defense. The IRGCN considers minelaying to be one of its most important tools in providing defense throughout the Persian Gulf and would be vital in any effort to close the Strait of Hormuz. The development of more sophisticated mines appears to be within Iran's technological capability considering other advances the country has made in its missile program. Iran's self-proclaimed proliferation of limpet mines, moored contact mines, bottom-laying influence mines, and remote-controlled mines present a comprehensive sea mine threat.¹⁹⁶ If the IRGCN does have access to this assortment of mines, the Iranian asymmetric naval threat becomes more credible. The Strait of Hormuz typically retains tidal currents of up to four knots which makes reliably setting mines in precise locations near impossible.¹⁹⁷ Further development of advanced mines may change the strategic landscape in Iran's favor. If different types of mines can be deployed with higher precision, the IRGCN could partially block access to the Strait of Hormuz while simultaneously leaving room for Iran to use alternative clear passages. Minesweepers from the U.S. Navy would take several weeks in verifying the Strait of Hormuz clear of mines. For weapons that cost in the thousands of dollars, their economic impact on the global market would be vast if used to halt trade in the Persian Gulf.

Mining coastal waters, to the extent that a blockade would be enforced, likely remains outside of Iran's interest.¹⁹⁸ As rudimentary as mine warfare may seem, effective employment of mines requires a refined approach. While the IRGCN has recently demonstrated their use of limpet mines against commercial maritime traffic, widespread mining operations of the Strait of Hormuz have not been conducted in decades. An individual mine has limited capability, however, the strategic positioning of a minefield can cause an adversary to proceed with caution. To maximize the effect of a minefield, military strategists and planners must understand the capabilities and limitations of their

¹⁹⁶ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 24.

¹⁹⁷ Howard S. Levie, *Mine Warfare at Sea* (Boston: Martinus Nijhoff Publishers, 1992), 97.

¹⁹⁸ Hill, *Maritime Strategy for Medium Powers*, 57.

mines and what measures would be needed to counter their presence. Successful mine warfare requires a level of training and time to plan.¹⁹⁹ The Iranian mine threat includes a stockpile of over 6,000 mines. Iran has developed a range of platforms across surface, subsurface, and air delivery mechanisms to deploy these low-cost, low-tech, high-impact assets. Furthermore, the ability to lay mines covertly, whether by using unsuspecting commercial vessels or small craft, gives Iran a layer of anonymity.²⁰⁰ The ability to deny culpability in a possible mine strike allows Iran to provide coastal defense without granting the United States explicit evidence to warrant retaliation with conventional force. Meanwhile, even the threat of a minefield will cause the U.S. Navy to proceed with caution while operating in the Persian Gulf. The resources needed to counter suspected mine areas would require massive mobilization. The IRGCN deploying mines in a large-scale effort will likely remain a last resort option. Iran continues to depend upon uninterrupted access of the Strait of Hormuz for trade. However, if left with no other strategic alternatives, sea mines are an effective asymmetric naval threat for sea denial strategies.

F. CONCLUSION

Since the end of the Tanker War, Iran's naval forces have emphasized the asymmetric naval threat for coastal defense and sea denial. For nearly three decades, Iran neglected its remaining conventional naval assets to expand upon smaller, lighter, and faster units. A naval reorganization in 2007 has granted the IRIN limited space to remain relevant in Iran's strategic vision of the maritime domain. While the IRGCN remains the premier naval force, tasked with responsibility of Persian Gulf defense, the IRIN has opportunity to pursue blue-water interests and explore tenets of naval diplomacy with partners. The prospect of IRIN deployments showcases an Iranian interest within the maritime domain that extends beyond the Persian Gulf. While these deployments remain limited in scope compared to the U.S. Navy, the move has implications for future Iranian national defense goals. The Iranian defense industry, despite its notable progress since the 1980s, lacks in its ability to widely produce modern military assets. Although difficult to

¹⁹⁹ Levie, *Mine Warfare at Sea*, 178.

²⁰⁰ Cordesman, "The Gulf," 105.

ascertain exact figures, the Iranian defense industry will remain limited to producing asymmetric naval threats. The Iranian naval surface threat is centered around the proliferation of small boats. Iran's missile threat is the foundation of its military power as Iran's geography is advantageous to the proliferation of shore-based launch sites. As smaller, faster, and cheaper surface vessels improve their ASM capability, the Iranian missile threat will continue to threaten U.S. naval operations from various sources. Lastly, the mine threat remains an affordable asymmetric naval threat that can slow maritime traffic throughout the Persian Gulf and have global economic consequences.

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IV. STRATEGY AND TACTICS

Technological improvements have magnified the Iranian asymmetric naval threat but the strategic approach continues to limit the scope of Iranian maritime operations. Asymmetric warfare is not suitable as an offensive military strategy against great powers. As a result, the U.S. Navy does not perceive Iran as an imminent maritime threat. If increasing tensions between Iran and the United States culminated in war, U.S. conventional sea power would decisively route Iranian maritime forces.²⁰¹ Iran understands that interactions with the U.S. Navy must be calculated and fall short of provoking outright conflict. Implementation of specific strategies and tactics allow Iran to leverage asymmetric threats and pursue deterrence objectives without enticing a U.S. response. This chapter concentrates on how Iran deploys its asymmetric naval threat to achieve desired outcomes within the maritime domain. First, Iran's overarching sea denial and deterrence-based strategy will be reviewed. Next, discussion of Iran's geographic advantages, use of swarming vessels, and information operations will further explain Iran's desired application of asymmetric naval threats. The chapter will then consider Iran's relationships with Russia and China as an indirect challenge to the United States. These relationships could expand the presence of Eastern naval forces in the Persian Gulf and present a greater threat to U.S. interests in the region. Finally, the chapter will briefly examine two interactions at sea with Iranian naval forces. These events demonstrate Iran's willingness to use the maritime domain in challenging the status quo, but also demonstrates their caution in pursuing aggressive courses of action.

A. SEA DENIAL

Conventional naval forces pursue command of the sea and unobstructed use of waters for their state's own purposes.²⁰² Iran's asymmetric naval force is incapable of achieving sea control. Instead, Iran implements a sea denial and deterrence-based strategy

²⁰¹ Ottolenghi, *The Pasdaran*, 50.

²⁰² Koburger, *Narrow Seas, Small Navies, and Fat Merchantmen*, 41.

to challenge the enduring presence of the U.S. Navy in the region.²⁰³ Sea denial is a maritime strategy for weaker powers which attempts to interrupt sea control of a superior naval force.²⁰⁴ Iran can utilize narrow waterways to compress distances for surprise attacks, limit adversary's response times to threats, and deter the U.S. Navy from conducting operations near their coastlines. Sociopolitical developments of the modern world contribute to Iran's ability to challenge great powers. The international community's emphasis on state rights, territorial sovereignty, and self-defense places restrictions on U.S. military action.²⁰⁵ Weaker powers, such as Iran, that do not place themselves under the same set of rules can violate international norms with minimal repercussions. The speed at which media outlets can falsely present developing events can cause further problems for the United States to overcome. Without a favorable political narrative, U.S. military action is difficult to justify. Lastly, the U.S. Navy faces limitations to power projection in the maritime domain unless local partners are willing to provide continued support for their mission.²⁰⁶ Access to ports and logistics are critical to keeping the U.S. Navy on station for extended periods. If there were ways to undermine U.S. support, Iran could incidentally limit the U.S. Navy's presence in the region.

Superior conventional sea power is not required to successfully implement a sea denial strategy. Technological advancements of FIACs, ASMs, and sea mines allow weaker powers to challenge sea control in an efficient manner. Improvements in the range and accuracy of weapons systems allow for even rudimentary munitions to contest navies operating near coastlines. Specifically, the extended range of asymmetric naval threats means that conventional sea power can only remain unchallenged in waters that are a safe distance from their adversary's weapons systems.²⁰⁷ Correspondingly, conventional sea power tactics that require close distances to shore, such as blockade, are diminished by weaker powers' access to modern technology. In today's maritime environment, great

²⁰³ Hill, *Maritime Strategy for Medium Powers*, 84.

²⁰⁴ Koburger, *Narrow Seas, Small Navies, and Fat Merchantmen*, 53.

²⁰⁵ Koburger, *Narrow Seas, Small Navies, and Fat Merchantmen*, xiv-xvii.

²⁰⁶ Kemp and Harkavy, *Strategic Geography and the Changing Middle East*, 303.

²⁰⁷ Koburger, *Narrow Seas, Small Navies, and Fat Merchantmen*, xv.

powers that wish to exert sea control, especially in areas that have narrow waterways, must arrive on station with overwhelming force. However, great powers must also ensure they maintain space in deep water that allows maneuverability.²⁰⁸ Confining a small number of units in restricted waters presents vulnerable targets for asymmetric naval threats. Sea denial operations can remain limited in scope while maintaining their desired effect. Sporadic hit-and-run tactics or the threat of a mined waterway can make the adversary question their level of sea control.²⁰⁹ Therefore, small-scale sea denial operations from an asymmetric naval force can cause conventional naval forces to pause when implemented correctly and serve as a viable deterrent factor.

The Islamic Republic constantly analyzes the political scene for opportunities to increase its leverage and compel change among its adversaries' policy in the Middle East.²¹⁰ The IRGCN's occasional aggressive behavior in their perceived defense of the Persian Gulf is one of the primary ways the regime uses the maritime domain to challenge U.S. presence in the region. With lessons learned from the Tanker War, the IRGCN has steadily built its self-confidence in asymmetric naval warfare.²¹¹ Using islands and offshore platforms, the IRGCN has grown its network of asymmetric power projection in the Persian Gulf. Threats against the closure of the Strait of Hormuz are aimed to escalate the cost of conflict and deter the United States from protracted war in the region. The threats are backed by Iran's arsenal of missiles and mines deployed by their array of small boats.²¹² Hostile actions against regional adversaries' oil platforms and civilian maritime traffic aim to increase the costs associated with operating in the Persian Gulf and remind the region of Iran's hegemonic ambitions. Regardless, the IRGCN is careful to contain their operations within the cover of gray zone conflict. The organization is careful to not overtly break international law and avoid unwanted escalation. Sea denial strategy and

²⁰⁸ Koburger, *Narrow Seas, Small Navies, and Fat Merchantmen*, 133.

²⁰⁹ Koburger, *Narrow Seas, Small Navies, and Fat Merchantmen*, 126.

²¹⁰ Afshon Ostovar and Ariane M. Tabatabai, "Iran, the Unitary State: Tehran's Foreign-Policy Makers Act as One." *Foreign Affairs*, last modified October 18, 2019, <https://www.foreignaffairs.com/articles/middle-east/2019-10-18/iran-unitary-state>.

²¹¹ Crist, "Gulf of Conflict," 23.

²¹² Crist, "Gulf of Conflict," 30.

asymmetric naval warfare give Iran the greatest flexibility and affordability in maintaining a level of influence in the maritime domain.

B. GEOGRAPHY

Iran benefits from its geography by utilizing a string of strategic islands located within immediate range of the Strait of Hormuz. These positions defend access to economic resources and place IRGCN assets in close proximity to all nautical traffic entering or exiting the Strait of Hormuz.²¹³ Islands, inlets, coves, and offshore structures all extend IRGCN main base operations and serve as the primary links to the navy's surveillance system of the Persian Gulf.²¹⁴ The Tunb Islands and Abu Musa are likely the most important pieces of this IRGCN network. Territorial dispute over these islands remains an ongoing source of tension between Iran and the United Arab Emirates. While Iran has maintained its physical presence on the islands, the UAE continues to appeal to the international community for its own lawful claims of sovereign control over the territories. Control over the Tunb Islands and Abu Musa grant Iran legal claim to underwater mineral rights and wider claims to territorial waters.²¹⁵ Since Iran already claims that it can legally control access to the Strait of Hormuz, claiming ownership of disputed islands further legitimizes their view as being guardians of the Persian Gulf.²¹⁶ Iran continues to press its claims and reserves rights to create artificial islands and offshore structures in the future to extend its influence in the region.

Confined waters of the Strait of Hormuz, in addition to Iran's chain of islands, greatly impacts ships' ability to freely maneuver. The strait's choke point grants Iran an advantage in deploying small boats and weapons against defenseless targets. The IRGCN's asymmetric tactics in this small area capitalize on the already confusing environment. With thousands of vessels transiting throughout the Persian Gulf daily, IRGCN vessels can hide amongst civilian traffic and impact their adversary's ability to distinguish a hostile target.

²¹³ Haghshenass, "Iran's Asymmetric Naval Warfare," 1.

²¹⁴ Crist, "Gulf of Conflict," 23.

²¹⁵ Harmer, "Iranian Naval and Maritime Strategy," 18.

²¹⁶ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 12.

Sirri Island, Larak Island, and Qeshm were all integral parts of Iran's war effort during the Tanker War. Chinese Silkworm missiles were positioned at these strategic locations in the chance that conflict escalated. Iran never targeted U.S. warships with the Silkworm missiles out of fear of retaliation, however, Iran has certainly placed more advanced weapons at these locations today. Additionally, photographic evidence of Qeshm demonstrates how the IRGCN uses geography to disguise its units. Part of the naval base includes an underground pen suspected of housing manned and unmanned speedboats.²¹⁷ Waterborne improvised explosive devices and suicide boats add another element to the IRGCN threat base. Shallow waters of the southern Persian Gulf are strewn with numerous small coral islands, underwater mounds, and offshore structures which restrict navigation and force traffic to utilize designated deep-water channels.²¹⁸ IRGCN surveillance of these channels allows coastal weapons systems to be prepared for attack and surface vessels to rapidly respond to a contact of interest.

The growing demand for navies to operate in or near the littorals has a significant impact on the future of naval warfare. Playing into Iranian geographic advantages, the littorals provide shorter distances for IRGCN vessels to travel and reduce the time the U.S. Navy has in making decisions. Of all the geographical factors that influence naval warfare, distance remains the element that will present the greatest challenges to overcome. Even with technological advances in transportation and communications, distance can affect the success on an operation.²¹⁹ Larger, deep draft vessels face even more dangers as they are drawn into conducting operations in the littorals. Islands, shoals, reefs, rocks, and sand bars create advantages for Iran's coastal defense and challenges for their adversaries.²²⁰ Without open water, conventional sea power is susceptible to the many shore-based weapons systems and offshore defensive structures that Iran has built. The presence of both natural obstacles to navigation and man-made structures present serious hazards to naval

²¹⁷ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 32–33.

²¹⁸ Haghshenass, "Iran's Asymmetric Naval Warfare," 8.

²¹⁹ Michael Lindberg and Daniel Todd, *Brown-, Green- and Blue-Water Fleets: The Influence of Geography on Naval Warfare, 1861 to the Present* (London: Praeger, 2002), 225.

²²⁰ Michael S. Lindberg, *Geographical Impact on Coastal Defense Navies: The Entwinning of Force Structure, Technology and Operational Environment* (London: Macmillan Press, 1998), 48–49.

operations in the littorals.²²¹ Iran's naval forces hold distinct mobility advantages in their littorals. Their shallow draft, smaller vessels can overcome the distance factor efficiently and is the distinct advantage Iran has over adversarial naval forces.²²² Lastly, bad weather can adversely affect the electronics of modern warships. The typical hot and humid weather of the Persian Gulf, in addition to the occasional sandstorm, reduce visibility and the viability of radar and weapons systems.²²³ Within the littorals, where U.S. warships are already constrained, if access to advanced electronic systems is impaired IRGCN assets pose a greater threat.

C. SWARMING

According to Arquilla and Ronfeldt, swarming is “the systematic pulsing of force and/or fire by dispersed, internettted units, so as to strike the adversary from all directions simultaneously.”²²⁴ While swarming tactics do not necessitate a complete encirclement of an enemy target, the approach places units in a position where they can strike from several positions at any given moment. A successful execution of the swarming tactic must meet a minimum of two criteria: (1) proper communication and coordination among attacking units to maximize attack angles against the adversary and (2) in addition to the strike operations, the units must conduct surveillance and communicate observations back to a central command center.²²⁵ In 2007, Iranian military leadership made the decision to reorganize its maritime services' areas of responsibility.²²⁶ Alongside this decision, Iran decentralized its command structure to decrease reliance on communications.²²⁷ In the event of a large-scale attack, centralized control over large swarms of FIAC could slow response time. Decentralization grants more autonomy to naval districts in executing their

²²¹ Lindberg and Todd, *Brown-, Green- and Blue-Water Fleets*, 145.

²²² Lindberg and Todd, *Brown-, Green- and Blue-Water Fleets*, 226.

²²³ Haghsheh, “Iran's Asymmetric Naval Warfare,” 9.

²²⁴ John Arquilla and David Ronfeldt, “Swarming & The Future of Conflict,” *National Defense Research Institute* (2000): 8–9.

²²⁵ Arquilla and Ronfeldt, “Swarming & The Future of Conflict,” 22.

²²⁶ Office of Naval Intelligence, “Iranian Naval Forces,” 11.

²²⁷ Office of Naval Intelligence, “Iran's Naval Forces,” 7–8.

commander's intent. The changes to command-and-control, alongside the decision to restructure water-space management between the IRGCN and IRIN, also mitigated the potential issues that each maritime force would have in communicating with one another.²²⁸ The reorganization of naval forces allows local commanders of IRGCN units to coordinate swarming tactics independently. The emphasis is now placed on direct communication between the vessels in immediate proximity to one another, with surveillance and further information relayed to main headquarters for follow-on tasking guidance. IRGCN small boats are no longer waiting on decisions from the top of military leadership to execute a given mission. Moreover, the autonomy given to local IRGCN commanders makes it difficult for U.S. intelligence to determine who is issuing orders for an attack. If the Islamic Republic wanted to deny culpability to an aggressive action, they could blame the event on the misunderstandings of an overzealous unit and attempt to prevent further escalation.

The elements of surprise, deception, and decentralization among a group of highly maneuverable units play into IRGCN swarm tactics.²²⁹ The concept is similar to the human wave attacks that IRGC ground forces used throughout the Iran-Iraq War. The stealth element of unconventional naval warfare is amplified within the operational factor of space. Due to small distances being involved in these operations, close-range missions and engagements can reduce the technological advantages held by U.S. conventional sea power.²³⁰ Swarming tactics involve deploying dozens, or even hundreds, of armed small boats from a variety of locations to converge on an isolated target.²³¹ Iran has been working on developing swarming formations since the Tanker War. Compared to conventional naval warfare, swarming small boats are deemed to be the more cost-effective approach to challenging U.S. presence in the Persian Gulf.²³² The addition of around 1,500 remote-controlled suicide drone boats along key Persian Gulf coastal areas makes the

²²⁸ Himes, "Iran's Two Navies," 12.

²²⁹ Office of Naval Intelligence, "Iranian Naval Forces," 23.

²³⁰ Haghshenass, "Iran's Asymmetric Naval Warfare," 7.

²³¹ Katzman, Merurkar, O'Rourke, Mason, and Ratner, *Iran's Threat to the Strait of Hormuz*, 5.

²³² Crist, "Gulf of Conflict," 25.

IRGCN threat seem more credible.²³³ Despite the attention that Iranian swarming tactics receives, the IRGCN has only executed such attacks on two occasions. During Operation Praying Mantis, IRGCN forces gathered around 50 small boats at Abu Musa Island. Once gathered, the two attacks were made using less than five boats each time. When U.S. forces sunk a Boghammer with relative ease, the spare small boats remained pier side.²³⁴ Naval exercises are executed to demonstrate IRGCN swarming tactics, but little evidence has been shown to determine if Iran can use such attacks effectively in an actual conflict.

Disadvantages of swarming tactics limit their potential effectiveness against perceived U.S. aggression in the region. Despite efforts to reorganize the naval forces, the IRGCN has not faced a test of their command-and-control system since the Tanker War. During that conflict, when attacks began all forms of communication were abandoned which allowed the U.S. conventional force to isolate and destroy incoming threats with ease. In their routine patrols, the IRGCN is rarely caught operating in groups larger than three to five vessels.²³⁵ The ability to deploy swarms of hundreds of vessels successfully seems doubtful. Effective swarming continues to depend upon high levels of communication and the flow of information. Without information passing between networked units, swarming tactics cannot effectively or efficiently target enemy warships.²³⁶ Additionally, small boats must have perfect sea conditions and close operating ranges to be effective. High sea states or distances far from shore prevent small boats from effectively deploying their weapons.²³⁷ When small boats are in weapons range of their target, accuracy is yet another obstacle to overcome. Ship instability makes it difficult for a small boat to hit any target aside from a large and slow-moving oil tanker. Finally, U.S. Special Warfare sailors are better equipped and trained than their IRGCN counterparts.²³⁸ Although significant time and resources would need to be allocated in

²³³ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 22.

²³⁴ Crist, "Gulf of Conflict," 19.

²³⁵ Crist, "Gulf of Conflict," 31.

²³⁶ Arquilla and Ronfeldt, "Swarming & The Future of Conflict," 70.

²³⁷ Office of Naval Intelligence, "Iran's Naval Forces," 23.

²³⁸ Crist, "Gulf of Conflict," 31.

transporting U.S. expeditionary forces to the Persian Gulf, once they are in the region, they can effectively respond to Iran in additional ways. During the Tanker War floating barge bases stationed off Farsi Island allowed rapid deployment of patrol craft and helicopters to counter IRGCN small boats attempting to disrupt U.S.-led convoys through the Persian Gulf. Swarming tactics remain a consideration for the U.S. Navy, however, Iran must depend on its full array of tactics to threaten their adversaries more credibly.

D. INFORMATION OPERATIONS

The use of media and strategic messaging further the IRGCN's goal of deterrence in the Persian Gulf. Mass coverage of military exercises attempt to portray Iranian military capability in an elevated manner. The effort is an attempt to convince domestic audiences in the strength of the regime's hold on power and international audiences in the likely severe cost that outright conflict with Iran would inflict.²³⁹ In addition to military exercises, political rhetoric and aggressive harassment of U.S. warships in the Persian Gulf are publicized to further the same messages.²⁴⁰ Overly ambitious military claims are made to exaggerate capabilities, including the IRGCN's announcements about building their own aircraft carriers.²⁴¹ When the IRGC is unable to push favorable news and media coverage for public consumption, more hard-lined approaches of censorship are utilized. The IRGC frequently monitors the use of internet communications to intercept and silence foreign ideals or messaging that challenges the authority of the regime.²⁴² At times of heightened tension between Iran and the United States, the IRGCN is known to conduct series of naval exercises to flex its maritime capability.²⁴³ The most popular naval exercise is Noble Prophet. During a recent rendition of the exercise, IRGCN forces sunk a mock-up aircraft carrier to display Iran's supposed ability to counter U.S. naval presence in the Persian Gulf. Military exercises or drills are typically conducted with no warning which increase the

²³⁹ Harmer, "Iranian Naval and Maritime Strategy," 13–14.

²⁴⁰ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 43.

²⁴¹ Himes, "Iran's Two Navies," 18.

²⁴² Wehrey, Green, Nichiporuk, Nader, Hansell, Nafisi, and Bohandy, "The Rise of the Pasdaran," 53.

²⁴³ Office of Naval Intelligence, "Iran's Naval Forces," 21.

sensational effect of the event and consciously undermine safety of navigation.²⁴⁴ These events are almost certain to follow enactment of new U.S. policies that attempt to weaken the regime. Iran wants to illustrate their resolve and persistence in presenting territorial defense.

E. PARTNERSHIPS WITHIN THE MARITIME DOMAIN

The IRIN, as it operates today, is primarily used to facilitate partnerships of interest to the regime. Deployments and naval exercises with countries such as Russia and China attempt to solidify the relationship that Iran has with them. This general “Turn to the East” is an attempt by Iran to navigate the sanctions and demanding economic situation that the United States has unilaterally placed them in. Despite a national security strategy that has emphasized self-reliance, Iran has become flexible in the face of dire circumstances. The lack of available options has pressured the Iranian regime to accept transactional relationships with outside powers that would have otherwise never happened.²⁴⁵ These relationships, by all parties involved, began as purely transactional. Shared appreciation for culture or genuine desire to build friendships are not the foundational elements. However, the transactional nature of these relationships has evolved. Signed agreements that cement relationships for decades into the future demonstrates Iran’s commitment to the East. Expanding Russian and Chinese influence in the Persian Gulf, by way of Iran’s flexible national security strategy, opens new potential threats to the United States. Access to ports, such as Bandar Abbas, means that Russian and Chinese warships that present more comparable conventional threats to the United States will have the option to patrol the Persian Gulf. In tandem with Iran’s asymmetric naval threat, the challenge could be difficult for the United States to overcome alone. Furthermore, if Iran could secure stronger relations with Russia and China, it could mean greater access to naval technology and shipyards. This would improve Iran’s own shipbuilding infrastructure and be a long-term pay-off in modernizing their own fleet. With Russia and China as collaborators against

²⁴⁴ Farzin Nadimi, “Iran Applies Maximum Power to Annual IRGC Naval Exercise,” *The Washington Institute for Near East Policy*, Policy Watch 3362 (August 2020).

²⁴⁵ Emil Avdaliani, “Why Iran is Turning East,” *The Begin-Sadat Center for Strategic Studies*, BESA Center Perspectives Paper No. 1711 (August 2020).

U.S. global dominance, Iran aspires to have a powerful position in a new world order.²⁴⁶ By aligning itself favorably with Russia and China, Iran believes it can strengthen its position in the international community and secure national defense.

1. Russia

Iran and Russia, in addition to being proponents of the Assad regime in Syria, have common interests in the Caspian Sea and Caucasus region.²⁴⁷ The Caspian Sea is host to large oil and gas reserves, however, waterborne access is only possible through Russia's Volga-Don and Volga-Baltic waterways.²⁴⁸ The depth of the Iranian side of the Caspian Sea makes oil and gas exploration difficult. Expansion of Iranian economic activity in this region will require additional investment. The strategic relationship between Russia and Iran has developed amidst the growing tension with the United States.²⁴⁹ Both are interested in challenging U.S. interests around the globe. An Iranian relationship with the Russian Navy would significantly enhance Russia's ability to rotate its fleet from the Pacific into the Mediterranean. Access to Iranian port facilities at Bandar Abbas would allow Russian ships to rest, refuel, and replenish supplies in support of global operations.²⁵⁰ Furthermore, a closer relationship with Russia means that Iran has easier access to purchasing weapons technology than it has in the recent past. The U.S. Navy would have to make difficult decisions deploying carrier strike groups to the Persian Gulf if Iran had greater access to Russian long-range, supersonic ASMs.²⁵¹ Russia and Iran have agreed to conduct regular naval exercises in the Caspian Sea, Persian Gulf, and Strait of Hormuz. Alarming as this is for the United States, Russia has not yet utilized Iranian naval bases offered to them in support of deployments. Russian warships utilizing facilities

²⁴⁶ Jamsheed K. Choksy and Carol E. B. Choksy, "China and Russia Have Iran's Back: Tehran May Be Less Open Than Ever to Threats or Persuasion," *Foreign Affairs* (November 17, 2020).

²⁴⁷ Harmer, "Iranian Naval and Maritime Strategy," 6.

²⁴⁸ Haghshenass, "Iran's Asymmetric Naval Warfare," 3.

²⁴⁹ Harmer, "Iranian Naval and Maritime Strategy," 30.

²⁵⁰ Harmer, "Iranian Naval and Maritime Strategy," 25.

²⁵¹ Reuben F. Johnson, "The Dangers Presented by Russian and PRC Weapons Sales to Iran," *Middle East Institute* (August 2020).

at Chabahar, Bandar Abbas, and Bender-Busher would expand its ability to project influence within the Persian Gulf and beyond.²⁵² Whether Russian warships acted independently or in coordination with IRGCN small boats, the addition of regularly deploying Russian warships to the region add an additional threat that U.S. Navy carrier strike groups would have to consider prior to entering the Persian Gulf.

2. China

IRIN deployments to China seek to expand Iran's relationship built on economic investment into the country. China has exported military equipment and key technologies that remain the cornerstone of Iran's military defense industry.²⁵³ Nearly all of Iranian ASM capability is of Chinese design. Since 2000, China has sold Iran 930 ASMs, 1,750 portable surface-to-air missiles, six surface-to-air missile systems, three air search radars, and nine catamaran missile boats.²⁵⁴ China remains the single largest importer of Iranian oil and has often served as a political voice for Iran at the United Nations and Security Council.²⁵⁵ By serving as a roadblock for the international community's decisions concerning Iran, China uses Iran as leverage against U.S. global influence. Chinese investment was also critical to the development of naval base facilities at Chabahar, Bandar Abbas, and Bender-Busher.²⁵⁶ When China conducts naval exercises with Iran, as it had in 2017 and 2019, China was careful to conduct similar drills with Saudi Arabia.²⁵⁷ China has committed itself equally to Iraq, Pakistan, the United Arab Emirates, Saudi Arabia, and Turkey as much as it has to Iran.²⁵⁸ Iran's economic potential has significant restraints that cause China to look elsewhere in the region for investment. The Iranian domestic market

²⁵² Paul Goble, "Russia, Iran Expand Military Cooperation Against U.S. and Europe in Gulf," *The Jamestown Foundation* 17, no. 137 (October 2020).

²⁵³ Harmer, "Iranian Naval and Maritime Strategy," 6.

²⁵⁴ Lucille Greer and Esfandiyar Batmanghedlidj, "Last Among Equals: The China-Iran Partnership in a Regional Context," *Wilson Center*, Occasional Paper Series no. 38 (September 2020), 18.

²⁵⁵ Harmer, "Iranian Naval and Maritime Strategy," 22.

²⁵⁶ Johnson, "The Dangers Presented by Russian and PRC Weapons Sales to Iran."

²⁵⁷ Greer and Batmanghedlidj, "Last Among Equals," 16.

²⁵⁸ Greer and Batmanghedlidj, "Last Among Equals," 3.

remains underdeveloped, U.S. sanctions make business difficult, and regional tensions make Chinese investors pause.²⁵⁹ Despite these obstacles, China remains watchful for economic opportunities in the region and is willing to negotiate advantageous agreements with Iran to extend its own global influence.

China's interest in the Persian Gulf is tied to the long-term commercial benefits of the region. While dialogue with Iran is a critical component to their strategy, the Chinese balance their relations with Iran against many other nations in the Middle East.²⁶⁰ New deals struck between China and Iran demonstrate China's political acumen and sense of Iran's weak position among the international community. Iran's need for extensive investment led Iran to accept deals that were optimal for Chinese companies in the long-term.²⁶¹ China is careful to not antagonize or choose sides in regional conflicts and will not be willing to deploy soldiers in Iran. Maintaining a balanced relationship with Iran is important for China's economic vision.²⁶² China will continue to assist Iran in limited ways while remaining politically unattached to issues specific to the region. China has no willingness to be dragged into armed conflict with Iran and its regional rivals. However, Iran holds value in challenging U.S. global hegemony. Iranian activity that challenges U.S. interests in the Persian Gulf, even if limited, detract the United States from other possible commitments across the world. In global competition with the United States, China is willing to economically assist Iran if they can cause regional instability and harm U.S. interests in the Middle East.²⁶³ Iran is aware that its relationship with China was not agreed upon with the most advantageous terms. Tougher trade terms that limit Iranian economic growth will not likely set the stage for a lasting friendship.²⁶⁴ However, with lack of

²⁵⁹ Greer and Batmanghedlidj, "Last Among Equals," 14.

²⁶⁰ Sima Shine, Eval Propper, and Bat Chen Druyan Feldman. "Iran and China: On the Way to a Long-Term Strategic Agreement?" *INSS Insight*, no. 1352 (July 23, 2020).

²⁶¹ Shine, Propper, and Feldman, "Iran and China."

²⁶² Sheng Zhang, "The 25-Year Agreement between China and Iran: A Continuation of Previous Policy," *The Washington Institute for Near East Policy*, (August 2020).

²⁶³ Zhang, "The 25-Year Agreement between China and Iran."

²⁶⁴ Avdaliani, "Why Iran is Turning East."

options available to Iran and an interest in challenging U.S. interests in the Middle East, Iran will continue to turn East in the immediate future.

F. INTERACTIONS AT SEA

Analysis of interactions at sea between vessels and the IRGCN help understand how Iran's security strategy is realized in the maritime domain. Central to United States and other Western partners is freedom of navigation in the Persian Gulf. IRGCN activity in the region indicates its willingness to challenge the presence of other vessels, both military and civilian. The IRGCN is viewed, by the U.S. Navy, as the less professional naval force of Iran. Radio communications with FIAC can be challenging to coordinate and, even when established, IRGCN units are often unwilling to cooperate with U.S. requests. Without proper communication between the IRGCN and other vessels operating in the Persian Gulf, opportunities for miscalculation arise.²⁶⁵ Depending on the political environment and state of relations between Iran and the U.S., IRGCN activities could be deemed hostile by U.S. Navy leadership. Unsafe and unprofessional interactions could lead the U.S. Navy to act in self-defense. On the other side, IRGCN units could misunderstand an order and unnecessarily press the level of aggression in its interactions with maritime traffic. Therefore, to understand Iran's approach to the maritime domain, further investigation as to how asymmetric naval assets are used on a regular basis is necessary. In doing so, the United States can understand patterns of behavior and how far Iran is willing to push its sea denial and deterrence strategy.

1. IRGCN Captures U.S. Sailors near Farsi Island

The humiliating incident of two U.S. riverine boats being seized along with ten U.S. sailors into the custody of the IRGCN posed a scenario that could have easily led to escalation. On the night of January 12, 2016, two riverine boats were underway in route from Kuwait to Bahrain when a series of issues arose.²⁶⁶ First, the ranking officer claimed

²⁶⁵ Himes, "Iran's Two Navies," 22.

²⁶⁶ W. J. Hennigan and Tracy Wilkinson, "How sailors ran into trouble off Iran; New details of the tense encounter emerge as critics question treatment of detained Navy crew," *Los Angeles Times*, January 15, 2016, <https://search-proquest-com.libproxy.nps.edu/docview/1756833276?pq-origsite=primo>.

that failure of navigation equipment led the vessels off course in their transit of the Persian Gulf. Secondly, the vessels were beginning to run low on fuel for their journey back to base. When IRGCN vessels noticed the U.S. riverine boats entering territorial waters near Farsi Island, IRGCN vessels began to make their approach. The U.S. vessels attempted to increase speed, exit territorial waters, and proceed out of range of the IRGCN. However, when one of the vessels incurred an engineering casualty, the crews and crafts were seized shortly after. Adding to the riverine boats' difficulties, radio communication with 5th Fleet's command center had been lost and left military leadership unaware of the unfolding details. The IRGCN held the U.S. sailors in custody for approximately 16 hours before their release. While in IRGCN hands, the sailors were fed, given blankets, and eventually allowed to sail back to a U.S. warship awaiting their release. During their time in IRGCN custody, video was taken showing the Americans kneeling with hands behind their heads. Another video showed the ranking officer apologizing profusely for their navigational errors causing the scenario to unfold. Other images of American sailors with tears in their eyes were used by the IRGCN to harm U.S. prestige.²⁶⁷ Many government officials at the time attributed the ability to negotiate the release of the U.S. sailors to the ongoing discussions over the nuclear deal. Secretary of State John Kerry had a planned phone call with Iranian Foreign Minister Mohammad Javad Zarif before the incident had even occurred.²⁶⁸ Without the improved lines of communication, perhaps negotiating the U.S. sailors' release would have been more difficult.

In 2007, fifteen British sailors were taken into Iranian custody following an inspection of a merchant ship based on the claim that the vessel had entered territorial waters. The British sailors were in Iranian custody for 13 days before finally released. This stands in contradiction to U.S. sailors who were in custody for less than 24 hours. In part, this could be attributed to the ongoing talks between the United States and Iran related to the nuclear deal. The increased communication, which had not been seen for years, resulted

²⁶⁷ Eisenstadt, "Operating in the Gray Zone," 19.

²⁶⁸ Howard LaFranchi, "Iran's Capture of U.S. Sailors Shows How It Is Acting Better – And Worse," *The Christian Science Monitor*, January 13, 2016, <https://search-proquest-com.libproxy.nps.edu/docview/1756322610?pq-origsite=primo>.

in a deal much faster than could otherwise be considered. However, the IRGCN likely acted in a restrained manner due to the chance that escalating the situation any further would have had drastic consequences. First, economic relief associated with the nuclear deal could have been in jeopardy. More importantly, aggressive or hostile action against U.S. Navy sailors could legitimize conflict for which Iran is ill-prepared. Rather than chance an escalation of force, Iran used the opportunity for propaganda. Videos showcased Iran's ability to patrol and defend their waters.²⁶⁹ Furthermore, the videos were embarrassing images for the United States to see and caused some to question the course of operations being taken in the Persian Gulf. The event demonstrated how volatile the environment can be in the Persian Gulf and how unexpected events can develop into potentially catastrophic international incidents.²⁷⁰ At the same time, restraint by IRGCN forces showed their understanding of the political situation. Hostile action against U.S. Navy riverine boats or poor treatment of U.S. Navy sailors while in IRGCN custody could have set the stage for a conventional military response.

2. Stena Impero

While transiting the Strait of Hormuz, British tanker *Stena Impero* was detained by IRGCN forces on July 19, 2019. Iran accused *Stena Impero* of colliding with a fishing boat and failing to answer calls, all accusations that the ship's owner denies. A Royal Navy frigate was deployed to aid the *Stena Impero* as IRGCN forces approached, however, they did not arrive in time. Armed speedboats intercepted the tanker and Sepah Navy Special Forces (IRGCN's expeditionary force) boarded the vessel via a Mi-171 helicopter.²⁷¹ IRGCN forces led the *Stena Impero* into Iranian territorial waters and to the port of Bandar Abbas. A total of 23 crew members were held in Iranian custody while the vessel remained at anchor and a court case was issued in Iran over the incident. The vessel remained

²⁶⁹ Ramin Mostaghim and Patrick J. McDonnell, "Waters calmed in Persian Gulf," *Chicago Tribune*, January 14, 2016, <https://search-proquest-com.libproxy.nps.edu/docview/1756474290?pq-origsite=primo>.

²⁷⁰ Englund, "A Dangerous Middle-Ground," 401.

²⁷¹ Nadimi, "Iran's Evolving Approach to Asymmetric Warfare," 31.

anchored in vicinity of Bandar Abbas until September 27, 2019.²⁷² This incident likely occurred in response to a British seizure of an Iranian tanker in vicinity of Gibraltar by the UK Royal Marines. Iranian tanker *Adrian Darya-1* was seized on suspicion of violating European Union sanctions against Syria. The United States supported the action, threatening to impose sanctions on any buyer of the 2.1 million barrels of oil being carried onboard the Iranian tanker.

This incident occurred among a series of escalating IRGCN attacks on Saudi Arabian oil platforms as well as other foreign maritime traffic in the region. Iranian aggressiveness was linked in part to President Trump's withdrawal from the Joint Comprehensive Plan of Action and following rhetoric against the Islamic Republic. IRGCN response to perceived attacks on the regime are meant to be a show of force. When a response to Iranian aggression is given, the IRGCN will typically cease harassing activity for some time. Without a response, IRGCN forces are emboldened to press the level of aggression and see how far they can take their behavior.

G. CONCLUSION

IRGCN naval doctrine, in more recent times, largely remains untested. Simulating widespread training events that would mimic a counteroffensive against U.S. conventional naval forces is difficult. Nevertheless, the West has grown to recognize the potential of the IRGCN's asymmetric strategy and have been incorporating training of their own to combat the threat. Political tensions between the United States and Iran provide a unique maritime atmosphere for naval forces to operate in. A minor skirmish between a U.S. warship and an overzealous IRGCN small boat could escalate into an unintended regional conflict. Iran continues to implement sea denial and deterrence-based strategies to limit the presence of the U.S. Navy in the region. Using geography to its advantage, Iran spreads its asymmetric naval threat across its vast coastline, islands, and offshore structures. Together, swarming vessels and shore-based weapons systems seek to saturate and overwhelm modern

²⁷² Jonathan Marcus, "Stena Impero: Seized British tanker leaves Iran's waters," *BBC News*, September 27, 2019, <https://www.bbc.com/news/world-middle-east-49849718#:~:text=A%20British%20flagged%20oil%20tanker,for%20allegedly%20breaking%20maritime%20rules.&text=The%20vessel%20was%20taken%20in,of%20the%20UK%20Royal%20Marines>.

conventional sea power. Iran continues to explore transactional partnerships with states wanting to challenge U.S. global influence. Expanding economic relief, weapons procurement, and naval coordination with Russia and China add a dynamic component to Iran's own asymmetric naval threat. While interactions with the IRGCN at sea challenge international norms, Iran remains calculated in its approach to the maritime domain. Iran will continue to test the boundaries of U.S. presence in the region, but remain outside of any action that would clearly warrant an overt military response.

V. CONCLUSION

This thesis examined Iran's challenge to U.S. naval operations in the Persian Gulf. Iranian asymmetric naval warfare seeks to deter U.S. conventional sea power through a myriad of threats distributed across Iran's extensive coastline and other strategic positions near the Strait of Hormuz. By increasing political costs and risk to operations, Iran believes it can create an intolerable price for the United States to sustain presence in the region. The introductory chapter proposed three hypotheses concerning Iran's approach to the maritime domain. This chapter will revisit each hypothesis and discuss whether they reflect Iran's current condition. The first hypothesis stated that Iran enhanced its naval capability in response to past failures during the Tanker War. As a result, Iran's asymmetric naval threat sufficiently challenges U.S. conventional sea power and Iran can reliably achieve national defense objectives in the Persian Gulf. The second hypothesis stated that Iran's improvements in asymmetric naval warfare fall short of legitimately challenging U.S. operations in the maritime domain. Therefore, conventional sea power persists in countering Iran's unconventional approach and inhibits the state's ability to secure national defense. The third hypothesis stated that Iran will never meet security objectives within the maritime domain until it can procure a conventional naval force comparable to the United States. The following analysis will discuss the suitability or shortfalls of each hypothesis.

Research conducted for this thesis largely affirms the first hypothesis. Today's geopolitical environment grants additional space for Iran to exercise coercive capabilities and counteract U.S. presence in the Persian Gulf.²⁷³ Political barriers to U.S. action allow Iran space within the gray zone to leverage its asymmetric naval threats. IRGCN actions against civilian vessels have seemingly violated redlines without a firm response. Iran's increased use of swarming small boats, limpet mines, and boardings against civilian vessels indicates an unwillingness of the United States and GCC partners to escalate tensions further. Iran will likely continue to conduct similar actions in the future to determine how much influence the IRGCN can exert unopposed in the maritime domain. Although it is

²⁷³ Spencer Lawrence French, "Embracing Asymmetry: Assessing Iranian National Security Strategy, 1983–1987," *Joint Force Quarterly* 101 (2nd Quarter 2021): 76.

unlikely the U.S. Navy will completely abstain from operating in the Persian Gulf, the evolution of Iran's asymmetric naval threats causes the U.S. Navy to carefully consider movements. Recent U.S. hesitation to deploy carrier strike groups into the region further supports the notion that Iran's asymmetric naval threat provides a level of deterrence.²⁷⁴ The United States will not pursue military operations in the Persian Gulf that unnecessarily place high-value units at risk.

The prospect of prolonged conflict in the Middle East adds to U.S. reluctance to commit resources to the region and provides Iran with additional leverage in the maritime domain. Operating in the Persian Gulf for extended periods of time is a costly endeavor for the U.S. Navy. Even with GCC and Western partners supporting U.S. naval operations, deploying large contingencies of surface vessels to the region is a major investment that could be used elsewhere. The rise of great power competition challenges the United States as a leader of the international community and its prioritization of resources across the globe. Assets that the United States commits to the Middle East must be viewed within the scope of rising competition with other states. Specifically, Russian and Chinese interests in challenging U.S. hegemony and creating a multipolar international system coincides with Iranian interests. Iran's naval force cannot defeat the U.S. Navy in symmetrical combat. However, Iran can raise the cost of operating in the Persian Gulf and make U.S. politicians question their investment to the region. Enticing a U.S. withdrawal from the region meets Iran's primary goal within the maritime domain. Any reduction of U.S. commitment to the Persian Gulf will allow the IRGCN to solidify regional interests and open possibilities for Iranian maritime influence beyond the Strait of Hormuz.

Revolutionary fervor alone cannot overcome superior weaponry. Technological advancements have improved Iran's asymmetric naval threat and serve as a reasonable deterrent to widespread U.S. naval operations in the region. Reorganization of command-and-control structures, development of advanced coastal cruise missiles, and procurement of hundreds, possibly thousands, of additional small boats reinforce Iran's commitment to coastal defense. FIAC, ASMs, and sea mines are central to the Iranian asymmetric naval

²⁷⁴ Eisenstadt, "Operating in the Gray Zone," 17.

threat. Modern upgrades have enabled Iran's domestic defense industry to develop smaller, faster, and cheaper small boats that can carry munitions for a variety of missions. The prospect of Iran adding unmanned vessels as suicide boats to their arsenal represents a continuing evolution of the surface naval threat Iran can pose. ASMs remain a critical component to Iran's deterrence strategy. As weapons systems achieve longer ranges and improved accuracy, Iran can threaten shipping from coastline defenses with increased credibility. The expansion of ports and shore-based ASM sites across the Persian Gulf distribute Iran's asymmetric naval threat and decrease the impact of possible U.S. retaliatory strikes. The destruction of a single port or launch site does not drastically reduce Iranian defense capability. Lastly, sea mines continue to pose a low-cost, high-impact solution to potential escalating tensions in the Persian Gulf. The Persian Gulf remains critically important to the health of the global economy. Safe and reliable passage through the Strait of Hormuz brings stability to the world energy market. The combination of Iran's asymmetric naval threats can credibly threaten economic stability and deter U.S. Navy operations in the region.

The second hypothesis understates Iran's asymmetric naval threat and willingness to engage U.S. military forces. While research confirms that Iran is aware of their inability to defeat the United States in a symmetric confrontation, Iran does maintain a valid network of defense systems that can harm U.S. naval forces operating in the region. Iran's ability to enact weapons saturation doctrine and overwhelm adversaries has steadily improved over the decades. Iranian retaliatory missile strikes on Ayn Al Asad base in Iraq in January 2020 is one of many cases that indicate Iran's commitment to military action when pressured to act.²⁷⁵ IRGCN harassment of U.S. Navy vessels on April 15, 2020 also demonstrate a willingness to test U.S. presence in the Persian Gulf. During this event, 11 IRGCN small boats conducted dangerously close maneuvers to U.S. Navy warships.²⁷⁶ The boldness of IRGCN units to act remains and their capability to coordinate larger groups of small boats seems to indicate an improvement in command-and-control. Iran's approach

²⁷⁵ Katzman, *Iran's Foreign and Defense Policies*, 13.

²⁷⁶ Farzin Nadimi, "Iran Gets Aggressive in the Northern Gulf Following U.S. Military Exercises," *The Washington Institute for Near East Policy*, Policy Watch 3302 (April 2020).

to the maritime domain does not seek outright conflict with the U.S. Navy. IRGCN efforts aim to raise the costs of sustained U.S. operations in the Persian Gulf and, hopefully, grant Iran opportunities to pursue regional ambitions unopposed. The absence of U.S. naval forces also begins to open possibilities for Iran to pursue maritime interests beyond the Persian Gulf. To assess Iran's naval force effectiveness in achieving national security goals it is important to look beyond the advantages that U.S. naval power has over asymmetric naval threats within the narrow definition of war.

Conventional sea power is not a requirement to meet deterrence-based or defense-oriented security goals. This finding refutes the third hypothesis. Prior to the Islamic Revolution, Iran was well-positioned to develop a conventional naval force with the support of the West. However, U.S. partnership and defense industry support vanished once the Shah of Iran was overthrown and the Islamic Republic was established. The abrupt regime change had massive implications for how Iran was perceived in the world and how Iran chose to pursue foreign policy. Once relations with the United States was broken, Iran was not able to support a conventional naval force. Aiming to deter Western interference in regional affairs, Iran took new strategic approaches to maintain some level of influence within the maritime domain. The adoption of asymmetric naval warfare was a decision made of necessity and a lack of alternative options. Today, the IRIN operates a small contingency of conventional naval forces. These vessels are either direct remnants from the IIN or are moderately improved versions of the Shah's navy. This grants the IRIN limited opportunities to pursue blue-water interests, conduct naval exercises with partners, and test new oceangoing platforms. The IRGCN has also proclaimed interests in acquiring larger, more capable assets for future operations. However, financing and domestically constructing a conventional naval force is a massive undertaking for Iran. These ambitious plans will take decades to realize under a self-reliance strategic approach. While relationships with Russia and China could expedite the development of blue-water capability and influence, Iran does not place conventional sea power as a requirement to pursue interests in the maritime domain.

The IRGCN remains Iran's preferred naval organization due to its experience with asymmetric naval threats. Since its founding in 1985, the IRGCN has steadily outpaced its

rival organization, the IRIN, for resources and prestige. While the IRIN remains in operation, until a larger contingent of conventional naval power is attainable the organization will remain in a subservient role. Long-range deployments indicate an Iranian interest to pursue influence within the maritime domain beyond its coastal waters. However, the immediate focus of Iran remains fixated on securing regional position. Although restricted to sea denial strategies, Iran has progressively developed its domestic defense industry capability and attempts to maximize production of various asymmetric naval threats. Iran's goal is not to sink all U.S. warships in the region, it is simply to compel a withdrawal and end U.S. interference in Middle Eastern affairs. Since Iran does not have a maritime strategy that seeks to decisively defeat U.S. naval forces in combat, conventional naval power is not a requirement to meet more limited deterrence-based and defense-oriented goals. The small number of conventional IRIN units are significant enough to project influence against Gulf state rivals. Meanwhile, the IRGCN can focus its resources on cost-effective asymmetric naval threats to combat U.S. Navy presence in the Persian Gulf. Technological advancements continue to narrow the gap and allow sea denial strategies to become increasingly effective.

Iran will continue to use sea denial strategies within the maritime domain. Sea control is not currently within Iranian capability. Geography alone gives Iran significant advantages over staging its asymmetric naval threats and overcoming the critical operational factor of space. Short distances allow surface vessels to respond to threats quicker, ASMs to reach most of the crowded shipping lanes of the Strait of Hormuz, and sea mines to halt lanes of maritime traffic. Despite Iran's inability to credibly display its proficiency in carrying out the command-and-control requirement for successful swarming tactics, the prevalence of small boats being added to its inventory demonstrate an upgraded capability from the last surface engagement with the United States. Partnerships with Russia and China present an intriguing challenge to U.S. interests in the Middle East. Iran's desperation for economic relief and assistance with developing military capability has led the regime to entertain slight deviations from a self-reliant national security approach. Although Iran is unlikely to make any lasting alliances with these larger powers, the relationships for the short-term are mutually beneficial. Russia and China can use the

maritime domain to spread its level of influence in the Persian Gulf and secure their own economic interests for future growth. Iran can leverage its own asymmetric naval threats with the addition of foreign conventional warships operating in or near the Persian Gulf. Alone, the addition of Russian and Chinese warships operating in the region would present a significant challenge to U.S. interests. If these powers are willing to coordinate to an even greater degree, Iran could more credibly threaten U.S. presence in the region. The trade-off that Iran makes to remove U.S. influence are the attachments to Russian and Chinese demands. Deepening commitments to Russia or China to help deter the threat of the United States still erodes the independence that Iran seeks to act with.

International initiatives, such as the International Maritime Security Construct, could remove the burden of U.S. carrier strike groups from operating in the Persian Gulf without abandoning all U.S. interests. U.S. development of newer surface platforms are also likely to change the U.S. Navy's strategic approach in the long-term. The addition of new classes of frigates and other smaller surface combatants that are equipped with FIAC and ASM self-defense capabilities could relieve the rotation of carrier strike groups and allow smaller surface action groups to fill in for U.S. interests more manageably. The United States must continue to be aware that any decision to downsize U.S. naval commitment to the Persian Gulf will send a clear message to Iran. With the United States absent from the maritime domain, Iran has greater opportunity to undermine international law, harass civilian shipping, and pursue hegemonic ambitions.²⁷⁷ Iran poses a credible challenge to the United States within the maritime domain. Decades of adherence to asymmetric naval warfare has given Iran time to improve upon strategic approaches. Technological advances continue to narrow the gap between conventional sea power and unconventional tactics. The modern sociopolitical environment adds additional obstacles for the United States to navigate and allows Iran opportunity to challenge U.S. interests in the Persian Gulf.

²⁷⁷ Nadimi, "Iran Signals a Toughened Stance by Adding to Its Naval Arsenal."

LIST OF REFERENCES

- Alemzadeh, Maryam. "The Islamic Revolutionary Guards Corps in the Iran-Iraq War: An unconventional military's survival." *British Journal of Middle Eastern Studies* 46, no. 4 (2019): 622–639.
- Arquilla, John and David Ronfeldt. "Swarming & The Future of Conflict." *National Defense Research Institute* (2000).
- Arreguin-Toft, Ivan. *How the Weak Win Wars: A Theory of Asymmetric Conflict*. New York: Cambridge University Press, 2005.
- Avdaliani, Emil. "Why Iran Is Turning East." *The Begin-Sadat Center for Strategic Studies*, BESA Center Perspectives Paper No. 1711 (August 2020).
- Axworthy, Michael. *Revolutionary Iran: A History of the Islamic Republic*. Oxford: Oxford University Press, 2016.
- Barnett, Roger W. *Asymmetrical Warfare: Today's Challenge to U.S. Military Power*. Washington, D.C.: Brassey's Inc., 2003.
- The Center for Strategic and International Studies. "The Gulf: Implications of British Withdrawal." Georgetown University, Special Report Series no. 8 (February 1969).
- Choksy, Jamsheed K. and Carol E. B. Choksy. "China and Russia Have Iran's Back: Tehran May Be Less Open Than Ever to Threats or Persuasion." *Foreign Affairs* (November 17, 2020).
- Colgan, Jeff D. "Fueling the Fire: Pathways from Oil to War." *International Security* 38, no. 2 (Fall 2013): 147–180.
- Cordesman, Anthony H. "Iran's Developing Military Capabilities." *Center for Strategic and International Studies* 27, no. 4 (2005).
- . "The Gulf: How dangerous is Iran to international maritime security?" In *Routledge Handbook of Naval Strategy and Security*, edited by Joachim Krause and Sebastian Bruns, 103–117. London: Routledge, 2016.
- . *Iran's Military Forces in Transition: Conventional Threats and Weapons of Mass Destruction*. London: Praeger, 1999.
- Crist, David B. "Gulf of Conflict: A History of U.S.-Iranian Confrontation at Sea." *The Washington Institute for Near East Policy*, Policy Focus 95 (June 2009).

- Czulda, Robert. "Defence Industry in Iran – Between Needs and Real Capabilities." *Defense & Security Analysis* 36, no. 2 (2020): 201–217.
- Dizaji, Sajjad F. and Mohammad R. Farzanegan. "Do Sanctions Constrain Military Spending of Iran?" *Defence and Peace Economics* 32, no. 2 (2021): 125–150.
- Eisenstadt, Michael. "Operating in the Gray Zone: Countering Iran's Asymmetric Way of War." *The Washington Institute for Near East Policy*, Policy Focus 162 (January 2020).
- El-Shazly, Nadia El-Sayed. *The Gulf Tanker War: Iran and Iraq's Maritime Swordplay*. London: Macmillan Press, 1998.
- Englund, Scott H. "A Dangerous Middle-Ground: Terrorists, Counter-Terrorists, and Gray-Zone Conflict." *Global Affairs* 5, no. 4–5 (December 2019): 389–404.
- Farzanegan, Mohammad Reza. "Military Spending and Economic Growth: The Case of Iran." *Defence and Peace Economics* 25, no. 3 (2014): 247–269.
- . "The Economic Cost of the Islamic Revolution and War for Iran: Synthetic Counterfactual Evidence." *Defence and Peace Economics* (2020).
- . "The Effects of International Sanctions on Iran's military spending: A Synthetic Control Analysis." *Defence and Peace Economics* (2021).
- Forozan, Hesam. *The Military in Post-Revolutionary Iran: The evolution and roles of the Revolutionary Guards*. London: Routledge, 2016.
- French, Spencer Lawrence. "Embracing Asymmetry: Assessing Iranian National Security Strategy, 1983–1987." *Joint Force Quarterly* 101 (2nd Quarter 2021).
- Goble, Paul. "Russia, Iran Expand Military Cooperation Against U.S. and Europe in Gulf." *The Jamestown Foundation* 17, no 137 (October 2020).
- Greer, Lucille and Esfandiyar Batmanghedlidj. "Last Among Equals: The China-Iran Partnership in a Regional Context." *Wilson Center*, Occasional Paper Series no. 38 (September 2020).
- Haghshenass, Fariborz. "Iran's Asymmetric Naval Warfare." *The Washington Institute for Near East Policy*, Policy Focus No. 87 (September 2008).
- Hammes, Thomas X. *The Sling and the Stone: On War in the 21st Century*. Minneapolis: Zenith Press, 2004.
- Harmer, Christopher. "Iranian Naval and Maritime Strategy." *Institute for the Study of War*. Middle East Security Report 12 (June 2013).

- Hennigan, W. J. and Tracy Wilkinson. "How Sailors Ran into Trouble Off Iran; New Details of the Tense Encounter Emerge as Critics Question Treatment of Detained Navy Crew." *Los Angeles Times*, Jan 15, 2016. <http://libproxy.nps.edu/login?url=https://www-proquest-com.libproxy.nps.edu/newspapers/how-sailors-ran-into-trouble-off-iran-new-details/docview/1756833276/se-2?accountid=12702>.
- Hill, J.R. *Maritime Strategy for Medium Powers*. Annapolis: Naval Institute Press, 1986.
- Himes, Joshua. "Iran's Two Navies: A Maturing Maritime Strategy." *Institute for the Study of War*. Middle East Security Report 1 (October 2011).
- The International Institute for Strategic Studies. "Open-Source Analysis of Iran's Missile and UAV Capabilities and Proliferation." (April 2021).
- Janes. "Islamic Revolution Guards Corps Navy – Navy." Last modified October 15, 2020. <https://customer-janes-com.libproxy.nps.edu/Janes/Display/JWNA0229-JWNA>.
- Johnson, Reuben F. "The Dangers Presented by Russian and PRC Weapons Sales to Iran." *Middle East Institute*, (August 2020).
- Katzman, Kenneth, Neelesh Nerurkar, Ronald O'Rourke, R. Chuck Mason, and Michael Ratner. *Iran's Threat to the Strait of Hormuz*. CRS Report No. R42335. Washington, D.C.: Congressional Research Service, 2012. <https://fas.org/sgp/crs/mideast/R42335.pdf>.
- . *Iran's Foreign and Defense Policies*. CRS Report No. R44017. Washington, DC: Congressional Research Service, 2021. <https://sgp.fas.org/crs/mideast/R44017.pdf>.
- Kemp, Geoffrey and Robert E. Harkavy. *Strategic Geography and the Changing Middle East*. Washington, D.C.: Brookings Institution Press, 1997.
- Khoshnood, Ardavan and Arvin Khoshnood. "The West's Role in the Shah's Overthrow." *Middle East Quarterly* 25, no. 3 (Summer 2018).
- . "Russia and Iran Sign an Intelligence Pact." *The Begin-Sadat Center for Strategic Studies*, BESA Center Perspectives Paper No. 1948 (March 2021).
- Koburger, Charles W. *Narrow Seas, Small Navies, and Fat Merchantmen: Naval Strategies for the 1990s*. New York: Praeger, 1990.
- LaFranchi, Howard. "Iran's Capture of U.S. Sailors Shows How It Is Acting Better - And Worse." *The Christian Science Monitor*, Jan 13, 2016. <http://libproxy.nps.edu/login?url=https://www-proquest-com.libproxy.nps.edu/newspapers/irans-capture-us-sailors-shows-how-is-acting/docview/1756322610/se-2?accountid=12702>.

- Levie, Howard S. *Mine Warfare at Sea*. Boston: Martinus Nijhoff Publishers, 1992.
- Lindberg, Michael and Daniel Todd. *Brown-, Green- and Blue-Water Fleets: The Influence of Geography on Naval Warfare, 1861 to the Present*. London: Praeger, 2002.
- Lindberg, Michael S. *Geographical Impact on Coastal Defense Navies: The Entwining of Force Structure, Technology and Operational Environment*. London: Macmillan Press, 1998.
- Mack, Andrew. "Why Big Nations Lose Small Wars: The Politics of Asymmetric Conflict." *World Politics* 27, (1975): 175–200.
- Maloney, Suzanne. *Iran's Political Economy Since the Revolution*. New York: Cambridge University Press, 2015.
- Mao Tse-tung. "On Protracted War," *Selected Works of Mao Tse-tung*, Vol. II, pp. 113–194. Peking: Foreign Languages Press, 1967.
- Marcus, Jonathan. "Stena Impero: Seized British tanker leaves Iran's waters." *BBC News*. September 27, 2019. <https://www.bbc.com/news/world-middle-east-49849718#:~:text=A%20British%2Dflagged%20oil%20tanker,for%20allegedly%20breaking%20maritime%20rules.&text=The%20vessel%20was%20taken%20in,of%20the%20UK%20Royal%20Marines>.
- Meierding, Emily. "Dismantling the Oil Wars Myth." *Security Studies* 25, no. 2 (May 2016): 258–288.
- Merom, Gil. *How Democracies Lose Small Wars: State, Society, and the Failures of France in Algeria, Israel in Lebanon, and the United States in Vietnam*. New York: Cambridge University Press, 2003.
- Metz, Steven and Douglas V. Johnson. "Asymmetry and U.S. Military Strategy: Definition, Background, and Strategic Concepts." *Strategic Studies Institute* (January 2001).
- The Military Balance*. "Chapter Seven: Middle East and North Africa." 120, no. 1 (February 2020): 324–387.
- Mobley, Richard. "Deterring Iran, 1968–71: The Royal Navy, Iran, and the Disputed Persian Gulf Islands." *Naval War College Review* 56, no. 4 (Autumn 2003): 107–119.

- Mostaghim, Ramin and Patrick J. McDonnell. "Waters Calmed in Persian Gulf: Iran Frees 10 U.S. Sailors, Averting Crisis." *Chicago Tribune*, Jan 14, 2016. <http://libproxy.nps.edu/login?url=https://www-proquest-com.libproxy.nps.edu/newspapers/waters-calmed-persian-gulf/docview/1756474290/se-2?accountid=12702>.
- Nadimi, Farzin. "Iran Applies Maximum Power to Annual IRGC Naval Exercise." *The Washington Institute for Near East Policy*, Policy Watch 3362 (August 2020).
- . "Iran Gets Aggressive in the Northern Gulf Following U.S. Military Exercises." *The Washington Institute for Near East Policy*, Policy Watch 3302 (April 2020).
- . "Iran Signals a Toughened Stance by Adding to Its Naval Arsenal." *The Washington Institute for Near East Policy*, Policy Watch 3335 (June 2020).
- . "Iran's Atlantic Voyage: Implications of Naval Deployments to Venezuela or Syria." *The Washington Institute for Near East Policy*, Policy Watch 3500 (June 15, 2021).
- . "Iran's Evolving Approach to Asymmetric Warfare: Strategy and Capabilities in the Persian Gulf." *The Washington Institute for Near East Policy*, Policy Focus 164 (April 2020).
- Navias, Martin S. and E.R. Hooton. *Tanker Wars: The Assault on Merchant Shipping During the Iran-Iraq Crisis, 1980–1988*. New York: Tauris Publishers, 1996.
- Office of Naval Intelligence. "Iran's Naval Forces: From Guerilla Warfare to a Modern Naval Strategy." (Fall 2009).
- . "Iranian Naval Forces: A Tale of Two Navies." (February 2017).
- Olson, Erik A. "Iran's Path Dependent Military Doctrine." *Strategic Studies Quarterly* (Summer 2016): 63–93.
- Organization of the Petroleum Exporting Countries. "Annual Statistical Bulletin 2020." Accessed November 7, 2020. https://asb.opec.org/ASB_Charts.html?chapter=18.
- . "OPEC Share of World Crude Oil Reserves, 2018." Accessed November 7, 2020. https://www.opec.org/opec_web/en/data_graphs/330.htm.
- Ostovar, Afshon and Ariane M. Tabatabai. "Iran, the Unitary State: Tehran's Foreign-Policy Makers Act as One." *Foreign Affairs*. Last modified October 18, 2019. <https://www.foreignaffairs.com/articles/middle-east/2019-10-18/iran-unitary-state>.
- . "The Islamic Republic of Recklessness." *Foreign Policy*. Last modified June 18, 2019. <https://foreignpolicy.com/2019/06/18/the-islamic-republic-of-recklessness/>.

- . *Vanguard of the Imam: Religion, Politics, and Iran's Revolutionary Guards*. New York: Oxford University Press, 2016.
- Ottolenghi, Emanuele. *The Pasdaran: Inside Iran's Islamic Revolutionary Guard Corps*. Washington, D.C.: FDD Press, 2011.
- Owen, R.P. "The British Withdrawal from the Persian Gulf." *The World Today* 28, no. 2 (February 1972): 75–81.
- Palmer, Michael A. *Guardians of the Gulf: A History of America's Expanding Role in the Persian Gulf, 1833–1992*. New York: The Free Press, 1992.
- Parchizadeh, Reza. "The Revolutionary Guards: The Anatomy of a State Terrorist Organization." *The Begin-Sadat Center for Strategic Studies*, BESA Center Perspectives Paper No. 1709 (August 2020).
- Quinlivan, James T. "Coups-proofing: Its Practice and Consequences in the Middle East." *International Security* 24, no. 2 (Autumn 1999): 131–165.
- Roberts, Mervyn. "Operation Countenance: The 1941 Invasion of Iran and the Clash of Propaganda Narratives." *Iranian Studies* 52, no. 3–4 (2019): 589:610.
- Shine, Sima, Eyal Propper, and Bat Chen Druyan Feldman. "Iran and China: On the Way to a Long-Term Strategic Agreement?" *INSS Insight*, no. 1352 (July 23, 2020).
- Singh, Abhijit. "Dark Chill in the Persian Gulf – Iran's Conventional and Unconventional Naval Forces." *Maritime Affairs* 6, no. 2 (Winter 2010): 108–132.
- Sutton, H. I. "Iran's New Missile Corvette Could Reshape IRGC Naval Doctrine." *United States Naval Institute* (March 2021).
- Tabatabai, Ariane M. *No Conquest, No Defeat: Iran's National Security Strategy*. Oxford: Oxford University Press, 2020.
- Thornton, Rod. *Asymmetric Warfare*. Cambridge: Polity Press, 2007.
- Wehrey, Frederic, David E. Thaler, Nora Bensahel, Kim Cragin, Jerrold D. Green, Dalia Dassa Kaye, Nadia Oweidat, and Jennifer Li. *Dangerous But Not Omnipotent: Exploring the Reach and Limitations of Iranian Power in the Middle East*. Santa Monica: RAND, 2009.
- , Jerrold D. Green, Brian Nichiporuk, Alireza Nader, Lydia Hansell, Rasool Nafisi, and S.R. Bohandy. "The Rise of the Pasdaran: Assessing the Domestic Roles of Iran's Islamic Revolutionary Guards Corps." *National Defense Research Institute* (2009).

Wise, Harold Lee. *Inside the Danger Zone: The U.S. Military in the Persian Gulf 1987–1988*. Annapolis: Naval Institute Press, 2007.

Wu, Shang-su. “The Modern Naval Fortress: An Additional Sea Denial Option for Coastal States.” *Defence Studies* 18, no. 1 (2018): 76–94.

Zatarain, Lee Allen. *America’s First Clash with Iran: The Tanker War, 1987–1988*. Philadelphia: Casemate Publishers, 2008.

Zhang, Sheng. “The 25-Year Agreement between China and Iran: A Continuation of Previous Policy.” *The Washington Institute for Near East Policy* (August 2020).

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