

**Strategic Empathy: Examining Pattern Breaks to Better Understand
Adversaries' Acquisition, Threat, and Use of Strategic Weapons**

By

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EXECUTIVE SUMMARY

Strategic empathy is the skill of stepping out of our own heads and into the minds of others. It is what allows us to pinpoint what truly drives and constrains the other side. (Zachary Shore¹)

One may vehemently disagree with the actions and worldview of another, but it is still possible to imaginatively see things from their perspective and understand why, to them at least, their actions might seem justified. (Joshua Baker²)

Drawing from the work of Zachary Shore and others, we define strategic empathy as “the sincere effort to identify and assess the genuine patterns of an adversary’s acquisition, threat of use, and use of strategic weapons and the underlying drivers and constraints that shape them.” This concept encapsulates a mindset, a lens, and an approach that help us to understand an adversary’s strategic thinking. In the context of this study, we apply strategic empathy as a tool to examine U.S. adversaries’ policies and actions concerning the acquisition, threat, and use of strategic weapons. It is important to clarify that strategic empathy is not synonymous with sympathy or agreement with the adversary’s viewpoint, nor does it seek to excuse or justify its actions. Instead, it operates on a policy “agnostic” basis, facilitating a more holistic, nuanced understanding of the adversary that can inform strategies of coercion, cooperation, or a mix of both, depending on the circumstances.

In this study, our approach for conducting case studies was primarily rooted in Zachary Shore’s book, *A Sense of the Enemy: The High Stakes History of Reading Your Rival’s Mind*, which focuses on examining what Shore terms “pattern breaks.” These pattern breaks encompass surprising or shocking, high-impact occurrences, and can be either events that affect an adversary or behaviors by the adversary itself. We apply this approach to examining eight pattern breaks for Russia, North Korea, and Iran related to their acquisition, threat, and use of strategic weapons. The aim of these case studies is to shed light on the adversaries’ patterns related to strategic weapons and the underlying drivers and constraints that shape them. Through this approach, strategic empathy offers a valuable tool, but it is not intended as a stand-alone approach. Rather, it offers a complementary perspective to other analytical approaches. It is also not intended as a causal theoretical framework but rather an alternative lens that can contribute to a more holistic and nuanced understanding of the adversary.

Applying strategic empathy towards adversaries can be valuable to improving both analysis and policy. For instance, it can be used to:

- Test, validate, challenge, or refine the conventional wisdom about the influence of specific events, drivers, or constraints on the acquisition, threat, and use of strategic weapons by adversary countries;

¹ Zachary Shore, *A Sense of the Enemy: The High Stakes History of Reading Your Rival’s Mind* (Oxford: Oxford University Press, 2014), Kindle edition, locations 62-63.

² Joshua Baker, “The Empathic Foundations of Security Dilemma De-escalation,” *Political Psychology*, Vol. 40, No. 6 (2019), <https://onlinelibrary.wiley.com/doi/pdfdirect/10.1111/pops.12623>, p. 1258.

- Afford a deeper awareness of how the adversary uses specific terms, concepts, and frameworks relating to the acquisition, threat, and use of strategic weapons;
- Improve policies and actions, both cooperative and coercive, such as deterring/assuring adversaries; reassuring allies and friends; managing crises, escalation, and armed conflict; negotiating agreements; and formulating unilateral risk reduction measures; and
- Assess potential adversary responses to policy initiatives.

Despite these advantages, there can be serious challenges to applying strategic empathy by both analysts and policymakers. These challenges include:

- Conducting research and analysis with little or no direct contact with the adversary;
- Dealing with domestic political constraints and challenges, including avoiding being perceived as either demonizing the adversary or defending/excusing its behavior;
- Examining a pattern break and crafting policy as that pattern break is unfolding in real-time;
- Weighing when and how to employ the insights of strategic empathy in coercive versus cooperative policies toward the adversary, or some mix of the two;
- Applying strategic empathy to analysis and policy in different strategic contexts, including conditions of peacetime competition or rivalry, periods of heightened tension, crises, and military conflict.

The results of this study point to a number of recommended approaches, as well as pitfalls to avoid, for analysts and policymakers in applying strategic empathy to address the acquisition, threat, and use of strategic weapons by adversaries. These recommendations include:

- Taking the time to establish the initial pattern before the pattern break;
- Employing multiple methodologies, using strategic empathy as a complement to other tools for understanding the adversary;
- Using multiple types of sources and perspectives to gain insights, including (1) Direct engagement with adversary officials (if possible), (2) Indirect engagement, including via mediators, Track 2 discussions, or scientific engagement; (3) The adversary's statements, policies, and actions that can be analyzed "from afar"; and (4) Outside sources such as official government reports, outside experts, and "inside-out" sources (former adversary officials or experts that have close links to adversary officials);
- Engaging, if possible, with contacts from the adversary country;
- Working in teams to draw upon a wide variety of competencies;
- Examining many pattern breaks relating to the same country;
- Avoiding the assumption that the adversary has a fixed nature and behavior, where its future actions will necessarily mirror its past behavior;
- Avoiding the assumption that the adversary will view U.S. policies and actions as non-threatening;
- Practicing "reflexivity" in viewing U.S. policies and actions, to consider how they may inadvertently influence adversary patterns, drivers, and constraints, including the role they may play in unintentionally provoking fear in the adversary; and
- Using "red teaming," or viewing an issue from the adversary's perspective.

Finally, applying strategic empathy can contribute to conflict transformation by alleviating sources of misunderstanding or mistrust that can lead to “unhealthy” or “destructive” forms of conflict between adversaries. Unhealthy or destructive forms of conflict include elements such as a lack of diplomatic contact and direct communication channels, so-called “shadow wars,” highly militarized communications that rely primarily on threats and use of force, entrenched and longstanding grievances on both sides that generate negative emotions, narratives, and myths, and an overall absence of guardrails for constraining conflict. The insights strategic empathy offers into the patterns, drivers, and constraints related to adversary policies and actions can help to usher in “healthy” (or “healthier”), more constructive, forms of conflict, or as one expert put it, “managed enmity.” With this in mind, the method in this study for applying strategic empathy may be applicable to multiple elements of conflict transformation, including:

- *Contextual knowledge*, or a deep understanding of the important underlying historical, geopolitical, social, and other factors that shape conflict. The strategic empathy approach can enhance the contextual knowledge of analysts and policymakers about the important historical, political, military, technological, organizational, and other key patterns, dynamics, and factors that shape an adversary’s approach to the acquisition, threat, and use of strategic weapons.
- *Intercultural competence*, or how to talk across differences. Because strategic empathy is fundamentally an approach that enables analysts and policymakers to better understand their adversaries, it can likewise contribute to the development of intercultural competence.
- *Critical self-awareness*, or an understanding of one’s own biases and perspectives. This aspect of conflict transformation maps onto the concept of reflexivity which entails thinking about how U.S. policies and actions may have unintended, or inadvertent, impacts on adversaries of which policymakers and analysts may have been unaware.
- *Dialogue and deliberation*. Strategic empathy can contribute to transforming unhealthy conflicts into healthy (or healthier) conflicts. One characteristic of healthy conflict is regular interaction between adversaries, whether at a government-to-government level, a military-to-military level, a Track 1.5/2 level, or in the context of scientific exchanges, to name but a few. Strategic empathy can increase opportunities for such dialogue and engagement by helping to reduce or eliminate sources of tension in U.S.-adversary relations.

INTRODUCTION

Sarah Bidgood and Jim Lamson

What is strategic empathy, and why does it matter to foreign policy? In his book, *A Sense of the Enemy: The High Stakes History of Reading Your Rival's Mind*, historian Zachary Shore offers perhaps the most formalized and comprehensive answer to this question in the existing scholarship. As he describes it, strategic empathy is the “crucial yet all-too-rare capacity for divining an enemy’s underlying drivers and constraints.”¹ It is essential not only for countering an adversary but to “avoid or ameliorate conflicts” because “understanding what truly drives others to act as they do” is critical to resolving conflict and constructing lasting peace.²

Shore’s work is novel in its focus on “pattern breaks,” or the “dramatic, high-impact events unplanned by leaders, but to which they must respond” as a means to derive these insights.³ As a concept, however, strategic empathy—or indeed, empathy in general—has long been recognized as central to the successful prosecution of foreign policy. Indeed, as Stephen Walt has observed, “the ability to see problems from another person’s (or country’s) perspective” is essential to these efforts because “it’s harder to persuade a rival to alter its behavior if you don’t understand its origins.”⁴ For Anatol Lieven, citing Hans Morgenthau, “the ability through study to see the world through the eyes of rival state elites” has “very valuable consequences for foreign policy” because “[i]t makes for an accurate assessment of another state establishment’s goals based on its own thoughts, rather than a picture of those goals generated by one’s own fears and hopes.”⁵

The importance of strategic empathy to achieving foreign policy objectives has also been widely acknowledged within the policymaking community. Indeed, it has been identified—both tacitly and explicitly—by past and current U.S. Government officials as a key ingredient to developing and implementing policy successfully. Retired Gen. H.R. McMaster, for instance, touted the importance of understanding “the ideology and the emotions and the aspirations that drive and constrain the other, especially rivals, adversaries, and enemies” during his short tenure as U.S. National Security Advisor.⁶ More recently, Brett McGurk, the former Special Presidential Envoy for the Global Coalition to Counter ISIL, attributed Joe Biden’s effective diplomacy as vice-president explicitly to his practice of “strategic empathy.”⁷

¹ Zachary Shore, *A Sense of the Enemy: The High Stakes History of Reading Your Rival's Mind* (Oxford: Oxford University Press, 2014), Kindle edition, location 3214.

² *Ibid.*, location 3294.

³ Zachary Shore, in H-Diplo Roundtable Review on *A Sense of the Enemy: The High-Stakes History of Reading Your Rival's Mind*, Vol. XIX, No. 20, January 29, 2018, <https://networks.h-net.org/system/files/contributed-files/roundtable-xix-20.pdf>.

⁴ Stephen M. Walt, “The Geopolitics of Empathy,” *Foreign Policy*, June 27, 2021, <https://foreignpolicy-com.ezproxy-miis.middlebury.edu/2021/06/27/the-geopolitics-of-empathy/>.

⁵ Anatol Lieven, “US strategists lost empathy, along with their wars,” *Responsible Statecraft*, Quincy Institute, November 3, 2020, <https://responsiblestatecraft.org/2020/11/03/how-u-s-strategists-lost-simple-empathy-along-with-their-wars/>.

⁶ “H.R. McMaster Stresses Strategic Empathy as an Effective Foreign Policy,” *GW Today*, March 29, 2021, <https://gwtoday.gwu.edu/hr-mcmaster-stresses-strategic-empathy-effective-foreign-policy>.

⁷ Michael Crowley, “‘Strategic Empathy’: How Biden’s Informal Diplomacy Shaped Foreign Relations,” *New York Times*, July 5, 2020, <https://www.nytimes.com/2020/07/05/us/politics/joe-biden-foreign-policy.html>.

Despite its importance in this regard, however, strategic empathy is rarely applied in policymaking settings. Indeed, as Fareed Zakaria has observed, “there is very little effort made to understand the other side’s views” in U.S. foreign policy, a gap which can have significant impacts on outcomes.⁸ In fact, as the late Robert Jervis argued, “failures of empathy explain a number of foreign policy disasters.”⁹ These include, prominently, cases of invasion, armed conflict, and other uses of military force.

If both scholars and practitioners appear to recognize the importance of strategic empathy and the consequences of its absence, then why do policymakers seem so reluctant to employ it? One reason may be that this concept is underspecified in ways that make its operationalization difficult.¹⁰ As a case-in-point example, there is no shared definition of either empathy or strategic empathy within the International Relations (IR) literature. For John Dale Grover, for instance, strategic empathy is a “mental tool of understanding that gathers information on another actor with the sincere goal of completely understanding them and any situation through their eyes such that one can respond with perception in the advancement of the national interest,”¹¹ while for Russian author S.V. Chugrov, it is simply the “point of view of the other party,” especially in terms of how it perceives important events.¹²

Another challenge to operationalizing strategic empathy relates to the fact that applying it requires either innate ability or practice, as well as deep knowledge, which not every actor is able or willing to acquire. This high bar is apparent in Ken Booth, Nicholas Wheeler, and Joshua Baker’s concept of security dilemma sensibility (SDS), which they describe as “an actor’s intention and capacity to perceive the motives behind, and to show responsiveness towards, the potential complexity of the military intentions of others.”¹³ Of note, they state that SDS “refers to the ability to understand the role that fear might play in their attitudes and behavior, including, crucially, the role that one’s own actions may play in provoking that fear.”¹⁴ As Wheeler asserts in his later work, *Trusting Enemies*, leaders can develop SDS through contact with their adversaries through a process of “interpersonal bonding that is made possible through face-to-face interaction.”¹⁵

An additional challenge is the fact that, even if an individual policymaker or diplomat might be quite adept at strategic empathy, he or she will likely have to overcome bureaucratic inertia, hostile domestic politics, and structural-institutional obstacles that may mitigate against its successful application. Whatever the reason for it, this gap is unfortunate in light of the many areas of foreign policymaking

⁸ Fareed Zakaria, “America’s foreign policy has lost all flexibility,” *Washington Post*, March 17, 2023, <https://www.washingtonpost.com/opinions/2023/03/17/america-foreign-policy-lacks-flexibility/>.

⁹ Robert Jervis, “Leadership, Post-Cold War Politics, and Psychology,” *Political Psychology*, Vol. 15, No. 4 (1994), p. 771.

¹⁰ For a valuable review of the literature on strategic empathy, see: Claire Yorke, “Is empathy a strategic imperative? A review essay,” *Journal of Strategic Studies* (December 2022), pp. 1-21.

¹¹ John Dale Grover, “Strategic Empathy as a Tool of Statecraft,” Center for the National Interest, October 2016, <http://cftni.org/wp-content/uploads/2016/10/Grover-John-Official.pdf>, p. 6.

¹² S.V. Chugrov, “The Strategic Empathy in the World Politics: Is It Possible to Overcome the Rashomon Effect and Fundamental Attribution Error?” (in Russian), *Polis. Political Studies*, No. 5 (2021), pp. 109-126.

¹³ Ken Booth and Nicholas J. Wheeler, *The Security Dilemma: Fear, Cooperation and Trust in World Politics* (Basingstoke, UK: Palgrave Macmillan, 2008); Joshua Baker, “The Empathic Foundations of Security Dilemma De-escalation,” *Political Psychology*, Vol. 40, No. 6 (2019), pp. 1251-1266.

¹⁴ Booth and Wheeler, *The Security Dilemma*, p. 7, quoted in Joshua Baker, “The Empathic Foundations of Security Dilemma De-escalation,” *Political Psychology*, Vol. 40, No. 6 (2019), p. 1253.

¹⁵ Nicholas Wheeler, *Trusting Enemies: Interpersonal Relationships in International Conflict* (Oxford: Oxford University Press, 2018), p. 1.

where strategic empathy and related concepts could help improve outcomes. These include actions and behaviors that are of prime importance in the current geopolitical context, including:

- Deterring/assuring adversaries;
- Reassuring allies and friends;
- Managing crises, escalation, and armed conflict;
- Negotiating risk reduction, arms control, and confidence-building measures;
- Formulating unilateral risk reduction measures; and
- Advancing foreign policy goals even at difficult moments in relations with other countries.¹⁶

Operationalizing Strategic Empathy

Strategic Empathy and Strategic Weapons

One especially critical area of national security where strategic empathy has yet to be usefully applied relates to understanding adversaries' acquisition, threat, and use of strategic weapons. This study seeks to address this gap by applying an approach similar to Shore's to analyze Russian, North Korean, and Iranian policies and actions vis-à-vis strategic weapons and what they reveal about what each of these adversaries "values most," "really wants," or "truly seeks."¹⁷ Based in part on the experience of conducting this research, the authors then offer a series of observations on the benefits strategic empathy affords analysts and policymakers and the challenges they may face in its implementation. They conclude by presenting a series of best practices to help both communities avoid these pitfalls and reap these rewards offered by this approach.

While the focus of our study is on strategic weapons, the way we define this term departs somewhat from typical usage and therefore requires some explanation. Indeed, and in contrast with other scholars, our focus here goes beyond the traditional *sine qua non* example of a "strategic weapon"—that is, a nuclear weapon delivered by missile or bomber across intercontinental ranges¹⁸—to include those weapons that can have "strategic effects." Thus defined, weapons with "strategic effects" can include both weapons of mass destruction and conventional weapons. More specifically, we consider this category of weapons to include those that can alter the military balance between two adversaries; deter or compel one's adversaries; push adversaries to change their doctrines, operations, war plans, force structures and postures, or force modernization; drive adversaries to formulate or modify policies (e.g., negotiating stance, alliances, export controls, sanctions, covert action); transform areas from uncontested to contested (e.g., air zones, sea zones, logistics hubs); produce decisive effects on

¹⁶ Ralph K. White, *Fearful Warriors: A Psychological Profile of U.S.-Soviet Relations* (New York: Free Press, 1984), p. 160, quoted in Baker, "The Empathic Foundations of Security Dilemma De-Escalation," p. 1257.

¹⁷ Shore, *A Sense of the Enemy*.

¹⁸ For instance, see: Herbert Scoville Jr., "Strategic Weapons and their Control," *India International Centre Quarterly*, Vol. 5, No. 3 (July 1978), pp. 147-154. However, even in the more clearcut U.S.-Soviet context, things were not always simple: During the Strategic Arms Limitation Treaty (SALT) negotiations, the Soviets wanted to include any U.S. weapon that could reach key targets in the Soviet Union from Europe as a "strategic weapon." (Dennis Evans, "Strategic Arms Control Beyond New START: Lessons from Prior Treaties and Recent Developments," National Security Report, Johns Hopkins Applied Physics Laboratory, 2021, p. 43.)

the battlefield; and/or those weapons that are seen as “strategic” by the adversary itself, regardless of their range and other characteristics.¹⁹

Pattern Break Analysis

We derive our insights into the acquisition, threat, and use of these weapons in Russia, North Korea, and Iran from an analysis of eight of what Shore calls “pattern breaks.” As Shore outlines in his work, pattern breaks at their most basic should be thought of simply as “deviations from the routine.”²⁰ These deviations can be single, discrete events or behaviors—such as “Pearl Harbors” or “9/11s”—or chains, series, or clusters of events/behaviors that together comprise a cumulative pattern break. According to Shore, the most meaningful pattern breaks “are those episodes that expose an enemy’s underlying drivers or constraints”; they can act as “teachable moments” and reveal important information that may not otherwise be visible using other analytical methods.²¹

The utility of our focus on pattern breaks is reinforced by the work of scholars who examine similar occurrences—such as “contingent events” and “critical junctures”—in identifying path dependence. Path dependence is a concept according to which important decisions or events can start a trajectory that endures and becomes self-reinforcing over time.²² As the work of James Mahoney suggests, contingent events are worthwhile units of analysis because they “set into motion institutional

¹⁹ For example, we use the definition of “strategic systems” from Phillip Saunders and David Logan regarding China as a starting point: Strategic systems are those “with sufficient capability to have strategic effects, whether by deterring potential adversaries, by forcing them to make significant changes in their doctrine, war plans, or force structure, or by producing decisive effects on the battlefield.” See Phillip C. Saunders and David C. Logan, “China’s Regional Nuclear Capability, Nonnuclear Strategic Systems, and Integration of Concepts and Operations,” in James M. Smith and Paul J. Bolt, eds., *China’s Strategic Arsenal: Worldview, Doctrine, and Systems* (Washington, D.C.: Georgetown University Press, 2021), p. 130. We also draw from Janne Nolan’s treatment of ballistic missiles: The actual and perceived threats these delivery systems pose can cause the other side to “alter tactics or temper hostilities” or make changes to military acquisitions, overall preparedness, strategy, force structure, and other areas. See Janne E. Nolan, *Trappings of Power: Ballistic Missiles in the Third World* (Washington, D.C.: Brookings Institution, 1991), p. 74. Our definition of weapons with “strategic effects” is likely similar to that pursued by the U.S. and Russia in their currently suspended Strategic Stability Dialogue. For instance, that forum includes a Working Group on Capabilities and Actions With Strategic Effects, which was established to address issues such as long-range conventional or dual-capable precision fires, including hypersonic weapons, and tactical nuclear weapons. See Shannon Bugos, “U.S., Russia Establish Strategic Stability Groups,” *Arms Control Today*, November 2021, <https://www.armscontrol.org/act/2021-11/news/us-russia-establish-strategic-stability-groups>. Lastly, Carrie Lee offers a useful discussion of how new weapons technologies can create strategic effects, writing that, “In addition to warfighting advantages, new technologies can also have strategic effects on the likelihood of war, how states interact, and the ability of states to coerce and deter in the international arena. Indeed, changes in the balance of power on the battlefield affect negotiations during war, but more importantly, they affect a state’s willingness to go to war in the first place. This happens in two broad ways: by influencing a state’s ability to coerce and/or deter adversaries, and by influencing a state’s ability to signal its intentions, capabilities, and resolve.” She adds that, “In addition to altering the balance of power, new technologies can influence deterrence and coercion by improving the credibility of a threat. States that only possess weapons whose use would constitute a disproportionate response find themselves lacking credibility.” See Carrie A. Lee, “Technology Acquisition and Arms Control: Thinking Through the Hypersonic Weapons Debate,” *Texas National Security Review*, Fall 2022, <https://tnsr.org/2022/09/technology-acquisition-and-arms-control-thinking-through-the-hypersonic-weapons-debate/>.

²⁰ Shore, *A Sense of the Enemy*, location 144.

²¹ Shore, *A Sense of the Enemy*, locations 167, 286.

²² Giovanni Capoccia and R. Daniel Kelemen, “The Study of Critical Junctures: Theory, Narrative, and Counterfactuals in Historical Institutionalism,” *World Politics*, Vol. 59, No. 3 (April 2007), p. 345; Thomas Rixen and Lora Anne Viola, “Historical Institutionalism and International Relations: Towards Explaining Change and Stability in International Institutions,” in Thomas Rixen, Lora Anne A. Viola, and Michael Zürn, eds., *Historical Institutionalism and International Relations: Explaining Institutional Development in World Politics* (Oxford: Oxford University Press: 2016), p. 12.

patterns or event chains that have deterministic properties.”²³ It is for this reason that, as Erik Olson describes, “path-dependency researchers” highlight the “importance of critical junctures in the formation of path dependency, occurring after contingent events, creating ‘enduring institutions,’ and reducing the range of possible outcomes.”²⁴

While, to our knowledge, pattern breaks have yet to be analyzed to gain insights into adversary policies and actions relating to strategic weapons, the scholarship on contingent events and critical junctures points to the value of this approach in filling the gap in knowledge we have identified. For instance, as Jeannie Johnson and her colleagues have argued, “almost every nation (excluding nuclear weapon states) that has initiated efforts to acquire a nuclear weapon has done so in the immediate aftermath of a national humiliation/defeat/other crisis.”²⁵ Similarly, in his research on Iran, Olson finds that military doctrine can be “path-dependent—driven into a specific pathway (and reducing options) by history, contingent events, and institutional patterns.”²⁶ According to Nitya Singh, who applies these concepts to Iran’s nuclear program, critical junctures are like “exogenous shocks” that can “place institutions on path trajectories, which are then very difficult to alter.”²⁷

In this study, we seek to complement and enhance these earlier findings through an analysis of eight pattern breaks. These are:

- Russia’s response to the United States’ withdrawal from the Anti-Ballistic Missile Treaty (Sarah Bidgood)
- Russia’s long-range missile campaign in the Syrian conflict (Hanna Notte)
- Russia’s acquisition of Iranian-made combat drones for its war against Ukraine (Hanna Notte)
- Pyongyang’s decision to seek normalized relations with the United States (Siegfried Hecker and Robert Carlin)
- Pyongyang’s decision to develop fully as a nuclear weapon state (Siegfried Hecker and Robert Carlin)
- The Iran-Iraq War, 1980-1988 (Jim Lamson)
- Threats and opportunities faced by Iran, 2001-2003 (Jim Lamson)
- Iranian long-range strikes against state adversaries, 2019-2023 (Jim Lamson)

Although this research endeavor was a collective effort, specific team members had primary responsibility for each of these cases, as noted above. The final product reflects the deep regional expertise, foreign language skills, and wide-ranging professional experiences they brought to bear.

While diverse, all of these case studies have a number of specific features in common. Indeed, although they focus on different adversaries, strategic weapons, and periods of time, each is associated with a strategic rival of the country, whether the United States or otherwise; related to the

²³ James Mahoney, “Path Dependence in Historical Sociology,” *Theory and Society*, Vol. 29, No. 4 (2000), p. 507.

²⁴ Erik A. Olson, “Iran’s Path Dependent Military Doctrine,” *Strategic Studies Quarterly*, Vol. 10, No. 2 (Summer 2016), p. 65.

²⁵ Kerry M. Kartchner, “Strategic Culture and WMD Decision Making,” in Jeannie L. Johnson, Kerry M. Kartchner, and Jeffrey A. Larsen, eds., *Strategic Culture and Weapons of Mass Destruction: Culturally Based Insights into Comparative National Security Policymaking* (New York: Palgrave Macmillan, 2009), p. 61.

²⁶ Olson, “Iran’s Path Dependent Military Doctrine,” pp. 64-65.

²⁷ Nitya Singh, “Iran’s Quest for Nuclear Weapons Capability,” *World Affairs*, Vol. 11, No. 1 (Spring 2007), p. 50.

acquisition, threat of use, and/or use of strategic weapons; relevant to patterns, drivers, and constraints that shape the country today; is pertinent to the current decisionmakers of the country; and has implications and long-term effects for the adversary.²⁸ While some on this list constitute what we term Category 1 pattern breaks (pattern-breaking *events*), others are Category 2 pattern breaks (pattern-breaking *behaviors*) following Shore.²⁹ Consistent with this distinction, we define a pattern break as a

a sharp deviation from the adversary’s routine related to its acquisition, threat of use, or use of weapons that takes the form either of a significant *event*—or series of events—that affects the adversary’s acquisition, threat of use, or use of weapons, or a major change in the adversary’s *behavior* related to its acquisition, threat of use, or use of weapons.

In analyzing the pattern breaks above, we follow a multi-step process informed by Shore’s work and that of other scholars, including Grover,³⁰ Lieven,³¹ and Matt Waldman.³² The first step in this process entails *recognizing the adversary’s pattern* with respect to its acquisition, threat of use, and use of strategic weapons prior to a pattern break. For the purposes of this study, we consider *acquisition* to mean a state’s procurement of a strategic weapon, either by foreign purchase or domestic research, development, and production³³ and *threat of use/use* to be the state’s military strategy³⁴ and operational doctrine³⁵ that govern when and how that strategic weapon will be used, whether to deter, compel, or fight. While much of the literature on these topics understandably focuses on either acquisition of weapons or the threat of use/use of weapons in isolation—for example, the factors that shape the proliferation of nuclear weapons or those that influence military doctrines and increase the likelihood of war—we deliberately integrate these concepts this project because we believe that doing so is important to addressing the patterns and the underlying drivers and constraints that shape them.³⁶

²⁸ An important attribute of pattern breaks as stated by Shore (discussion with Shore, November 8, 2022).

²⁹ Shore, *A Sense of the Enemy*, location 144.

³⁰ Grover, “Strategic Empathy as a Tool of Statecraft.”

³¹ Lieven, “US strategists lost empathy, along with their wars.”

³² Matt Waldman, “Strategic Empathy,” New America Foundation, April 2014, https://static.newamerica.org/attachments/4350-strategic-empathy-2/Waldman%20Strategic%20Empathy_2.3caa1c3d706143f1a8cae6a7d2ce70c7.pdf.

³³ The “foreign versus domestic” methods of acquisition may not necessarily be a clear dichotomy, as a state’s acquisition strategy for a given weapon system might include a mix of foreign and domestic elements. Such foreign-domestic mixes can include obtaining technology transfer for a foreign weapon system, resulting in a domestic production capability; reverse engineering a foreign weapon system that was purchased, stolen, or captured; or the domestic improvement of a foreign weapon design.

³⁴ According to Taylor Fravel, a country’s military strategy “explains or outlines how its armed forces will be employed to achieve military objectives that advance the state’s political goals.” See M. Taylor Fravel, *Active Defense: China’s Military Strategy since 1949* (Princeton: Princeton University Press, 2019), p. 10.

³⁵ According to Scott Sagan, “Military doctrine consists of plans about how and when military force is to be used. Doctrines thus differ on many dimensions: whether they are basically offensive or defensive in character; whether they call for decisive use of force or whether they permit more limited operations; and how they define what kinds of targets—military forces, enemy leaders, or industrial capabilities—need to be destroyed in war.” See Scott D. Sagan, “The Origins of Military Doctrine and Command and Control Systems,” in Peter R. Lavoy, Scott D. Sagan, and James J. Wirtz, eds., *Planning the Unthinkable: How New Powers Will Use Nuclear, Biological, and Chemical Weapons* (Ithaca: Cornell University Press, 2000), p. 17.

³⁶ There are important exceptions to this rule, of course, including elements of the literature on military innovation that integrates analysis of technology and doctrine, causes of war literature that examines the role of “offensive” weapons in increasing the likelihood of war, and proliferation literature that addresses not just the acquisition of weapons technology but how states may incorporate it into their military strategy and doctrine.

After establishing the adversary's patterns, the second step in this process entails analyzing the *pattern breaks themselves*. In so doing, we assess adversary actions during (and after) the pattern break and what they reveal about the factors influencing its acquisition, threat of use, and use of strategic weapons. Following Shore, our focus in this regard is “on the enemy’s behavior (whatever that behavior was) at pattern breaks” rather than “a change in behavior,” *per se*.³⁷ The results help with “spotlighting what is most important” to the adversary and understanding how these factors inform its policies and actions relating to strategic weapons.³⁸

Throughout both steps in this process, we rely on a variety of primary and secondary sources to derive our insights, with a particular emphasis on garnering insights from primary sources. These include English and foreign-language sources such as press reports, official statements and documents, memoirs, interviews, meeting notes, and academic and thinktank reports. We then triangulate among these various sources to filter the “signals” from the “noise,” helping us to distinguish between messages the adversary is trying to communicate to outside observers for specific purposes and its internal perceptions and beliefs. The results reveal factors which influence these adversaries’ acquisition, threat, and use of strategic weapons that may be difficult to discern from more traditional analytical approaches alone.

It is important to point out that by using this approach, we do not aim to create a new causal theoretical framework, as a replacement or competitor for other theoretical approaches, to explain the “why” of adversaries’ policies and actions related to strategic weapons. Rather, this approach is intended at providing a valuable lens along with empirical insights that can complement other approaches—including those driven by theoretical frameworks—to gain a richer, and more nuanced, understanding of adversaries’ acquisition, threat, and use of strategic weapons.

Drivers and Constraints: A Defining Feature of Strategic Empathy

In identifying those factors that influence adversaries’ acquisition, threat, and use of strategic weapons and their policy implications, the results of our study both complement and enhance the literature on weapons proliferation, military innovation, causes of war, and use of force. Indeed, this body of research points to a veritable catalogue of factors that can affect a state’s behavior in this regard, ranging from international to national to sub-national forces that can influence innovation or the threat/use of force. In treating pattern breaks as our unit of analysis, however, we seek to go *beyond* these earlier observations to identify, specifically, the *drivers and constraints behind* adversaries’ acquisition, threat of use, and use of strategic weapons. These include, per Shore “those goals that are most important” to the adversary, or “the things that the other side wants most,” as well as those factors that limit its ability to achieve or obtain them.³⁹

Reflecting the specific focus of our study, we define drivers and constraints as those factors that push or inhibit a state in acquiring, threatening to use, and/or using strategic weapons. Correspondingly, *drivers* in this context can include not only motivations, motives, incentives, pressures, determinants, imperatives, and enablers, but also strategic goals, ambitions, interests, and

³⁷ H-Diplo Roundtable Review on *A Sense of the Enemy: The High-Stakes History of Reading Your Rival's Mind*, Vol. XIX, No. 20, January 29, 2018, <https://networks.h-net.org/system/files/contributed-files/roundtable-xix-20.pdf>.

³⁸ Shore, *A Sense of the Enemy*, location 2885.

³⁹ Shore, *A Sense of the Enemy*, location 3489.

stated “redlines.” *Constraints*, conversely, are those factors that hinder a state’s acquisition, threat of use, and/or use of weapons. As shown in the results of our study, these may include disincentives, limitations, and controls, among other forces.⁴⁰

Fundamentally, it is this focus on drivers and constraints *paired with* our analysis of patterns and pattern breaks that make our study “strategically empathic” in its character. Indeed, and recognizing that there is no shared definition of strategic empathy, we thus conceive of this term to mean

the sincere effort to identify and assess the genuine patterns of an adversary’s acquisition, threat of use, and use of strategic weapons and the underlying drivers and constraints that shape them.⁴¹

As this definition suggests, and in keeping with Booth, Wheeler, and Baker, among others, we do not consider empathy to be a synonym for sympathy or to connote agreement with the adversary’s viewpoint. On the contrary, we view it as a foundation for prudent policies and a response to Shore’s observation that

Too often in statecraft leaders focus on an enemy’s intentions and capabilities. Strategic empathies dig deeper...Both drivers and constraints operate sub rosa. They are the less obvious yet more significant factors that shape state behaviors. And they are the fodder for a strategic empathy’s success.⁴²

Having outlined the gap in knowledge we seek to fill and the methodology we employ to do so, the remainder of this report proceeds as follows: Chapters One through Nine present the results of our case study analyses of the pattern breaks identified previously, and the final section of the report describes the conclusions and recommendations we derived from our analysis.

⁴⁰ Such limitations or controls can include those that are political, military, technical, economic, or cultural in nature.

⁴¹ In our definition and overall approach to strategic empathy, we try to capture these important elements from Shore and other authors: 1. Its main aim is to understand the adversary’s underlying drivers and constraints; 2. It is policy “agnostic”: The insights gained can be used to coerce, cooperate, or both; 3. It includes a sincere willingness to empathize with the adversary; and 4. Empathy does not mean sympathy or agreement with the adversary’s viewpoint, or an effort to excuse or justify its actions.

⁴² H-Diplo Roundtable Review on *A Sense of the Enemy: The High-Stakes History of Reading Your Rival’s Mind*, Vol. XIX, No. 20, January 29, 2018, <https://networks.h-net.org/system/files/contributed-files/roundtable-xix-20.pdf>.

CHAPTER ONE

Russia's Response to the United States' Withdrawal from the Anti-Ballistic Missile Treaty

Sarah Bidgood

Introduction

This case study focuses on the impact of the United States' decision to withdraw from the Anti-Ballistic Missile Treaty in December 2001 and subsequent exit from the accord in June 2002 on Russia's acquisition, threat, and use of strategic weapons. More specifically, it seeks to pinpoint constants and changes in Moscow's pursuit and use of long-range ballistic missiles and maneuverable nuclear-capable weapon delivery systems before and after Washington left the 1972 agreement. In so doing, it proceeds from the view that, although United States had actively considered the possibility of abandoning the ABM treaty since the 1980s, the George W. Bush administration's decision to move from a *discussion* of withdrawal to *actual* withdrawal constituted a surprise to Russia and a startling break from past U.S. behavior (a Cat. 1 pattern break). At the same time, however, this case study does not ignore developments that occurred *prior* to the U.S. departure from the Cold War accord, such as the Clinton administration's efforts to amend the treaty to permit a limited national missile defense (NMD) deployment, which helped to catalyzed Russia's pursuit of long-range delivery systems that could circumvent ballistic missile defense if needed.

In analyzing Russia's behavior both pre- and post-pattern break, this case study seeks to separate changes in Moscow's nuclear posture and strategic deterrent that were already in process at the time of the Bush administration's exit from the accord from those that transpired after the fact. These include, most significantly, Russian president Vladimir Putin's decision in the summer of 2000 to forego rapid, deep, unilateral cuts to Russia's strategic forces advocated by some military officials in favor of gradual reductions and the replacement of its existing intercontinental ballistic missiles (ICBMs) with newer models. This case study also contextualizes the Bush administration's departure from the agreement within the broader landscape of U.S.-Russia relations, arguing that the impact of this event on Moscow's acquisition, threat, and use of strategic weapons was initially dulled by Russia's weak economy and Putin's desire to cooperate with his Western counterparts at the time. The results help to pinpoint the precise influence of the U.S. abrogation of the accord in the moment when compared with subsequent developments—like its plans to forward-deploy missile defense systems in Europe in the mid-2000s—to which Russia reacted more strongly.

Making these distinctions is both challenging and important because—at least in recent years—Russian official statements have framed the preponderance of Moscow's contemporary military innovations as a reaction to the U.S. exit from ABM. Indeed, in his now-infamous address before the Federal Assembly in 2018, Putin characterized each of the “novel” or “exotic” weapons systems

he debuted there as a “response to the unilateral withdrawal of the United States of America from the anti-ballistic missile Treaty and the practical deployment of their missile defense systems both in the United States and beyond their borders.”¹ Yet, as this case study finds, Putin’s initial reaction to Bush’s departure from the ABM treaty was, in fact, low-key: while he did consider Washington’s decision to be a “mistake,” it was not one that he believed would “threaten the national security of the Russian Federation” because Russia already had “an efficient system for overcoming the anti-ballistic missile defenses.”² It appears that it was only by the mid-to-late 2000s, against the backdrop of overall deteriorating U.S.-Russia relations and improving economic conditions in Russia, that Moscow’s leadership began to view the U.S. withdrawal from ABM as a symptom of its larger pretension to unipolarity, which new strategic weapons capabilities would help it to resist.

With this as its backdrop, this case study proceeds as follows: It begins with an examination of Russia’s pursuit of strategic weapons before the U.S. withdrawal from ABM, focusing on both the state of U.S.-Russia relations at the time and internal and external factors that reinforced the primacy of nuclear weapons to Russia’s national security. It then examines how Russia responded to Bush’s announcement that the United States would exit the treaty, attempting to differentiate between actions that were new and those that were simply a continuation of ongoing modernization efforts. It then concludes with a comparison of the drivers and constraints on Russia’s acquisition, threat, and use of strategic weapons before and after the demise of ABM. It finds that, although this event certainly did precipitate some changes in Russian behavior in these areas, these shifts were less pronounced or immediate than more recent statements from Moscow would suggest.

Establishing the Pattern

U.S.-Russia Relations Pre-Pattern Break

Assessing the impact of the U.S. withdrawal from the ABM treaty on Russia’s acquisition, threat, and use of strategic weapons requires a clear understanding of the evolving relationship between Washington and Moscow prior to this pattern break. A review of the documentary record shows that, by the mid-1990s, the dissolution of the Soviet Union and resulting end of the Cold War had given rise to a period of relative stability between the two nuclear rivals. Indeed, recently declassified transcripts of U.S. President Bill Clinton’s interactions with his Russian counterpart Boris Yeltsin showcase the unusually close partnership between two leaders, one characterized by a high degree of trust and confidence. As Yeltsin observed to Clinton in May 1998, for instance, their “excellent relationship” amounted to “more than just friendship. It’s what I would call co-leadership.”³

By Clinton and Yeltsin’s waning days in office, however, the easy rapport and close cooperation that had previously characterized their interactions had begun to erode. Masha Gessen points to one

¹ Vladimir Putin, “Annual Address to the Federal Assembly of the Russian Federation,” May 26, 2004, <http://en.kremlin.ru/events/president/transcripts/22494>.

² “Russia: Putin Calls U.S. ABM Decision A Mistake,” *Radio Free Europe*, December 13, 2001, <https://www.rferl.org/a/1098252.html>.

³ Memorandum of Telephone Conversation, “Telcon with Russian President Boris Yeltsin,” May 17, 1998, Declassified Documents Concerning Russian President Boris Yeltsin, Clinton Digital Library, <https://clinton.presidentiallibraries.us/items/show/57569>, p. 317.

specific event—the war in Kosovo—as the “conflict that would undo their relationship.”⁴ Indeed, Yeltsin made it clear to Clinton at the time that, “significant damage has occurred to U.S.-Russian relations” as a result of NATO’s bombing of Yugoslavia in 1999.⁵ Further, as Vladimir Brovkin observes, the war’s negative impact on Russia’s perceptions of the West and Yeltsin’s pro-Western policies was further exacerbated by a series of developments that occurred almost simultaneously, including the August 1998 collapse of the ruble; the U.S. bombing of Iraq that same year without forewarning Russia; and U.S. strategic and conventional modernization more broadly.⁶

Correspondingly, by the time the war in Yugoslavia had concluded, the prevailing perception within the Russian Federation was that relations with the United States had changed fundamentally.⁷ While Yeltsin did indicate to Clinton at a meeting on June 20th, 1999 on the margins of the G-8 Economic Summit that he was prepared to “see if we can continue to be friends,”⁸ he also reiterated later in this same conversation that “the Kosovo crisis put a lot of our problems in stark relief.”⁹ Importantly, from a military perspective, Alexei Arbatov finds that “the Kosovo war caused Russia to reconsider the basic tenets of its security structure,” as well. In his analysis, the NATO attacks against Yugoslavia were seen in Moscow as an indication of the Alliance’s transformation from a “defensive coalition of states” to what he calls “by far the most powerful military force in the world.”¹⁰

One manifestation of this transformation, which made a significant impression on observers in Moscow, was the advanced conventional capabilities—including precision guided munitions (PGMs)—that the United States and NATO brought to bear in this conflict. Indeed, of the 23,315 munitions the United States expended during the 78 day bombing effort, nearly thirty percent were precision-guided, representing a three-fold increase over the quantity of PGMs used in Operation Desert Storm.¹¹ In contrast, Russia’s once-impressive conventional capabilities had grown

⁴ Masha Gessen, “The Undoing of Bill Clinton and Boris Yeltsin’s Friendship and How It Changed Both of Their Countries,” *The New Yorker*, September 5, 2018, <https://www.newyorker.com/news/our-columnists/the-undoing-of-bill-clinton-and-boris-yeltsin-friendship-and-how-it-changed-both-countries>.

⁵ Memorandum of Telephone Conversation, “Telephone Conversation with Russian President Yeltsin,” April 19, 1999, Declassified Documents Concerning Russian President Boris Yeltsin, Clinton Digital Library, <https://clinton.presidentiallibraries.us/items/show/57569>, p. 439.

⁶ Vladimir Brovkin, “Discourse on NATO In Russia During the Kosovo War,” *Demokratizatsiya* 7 (1999), https://demokratizatsiya.pub/archives/07-4_brovkin.pdf, pp. 544-560.

⁷ Alexei Arbatov, “The Transformation of Russian Military Doctrine: Lessons Learned from Kosovo and Chechnya,” *The Marshall Center Papers*, No. 2 (July 2000), <https://www.marshallcenter.org/en/publications/marshall-center-papers/transformation-russian-military-doctrine-lessons-learned-kosovo-and-chechnya/transformation-russian-military#toc-kosovo-s-impact-on-russian-perceptions-of-war-and-politics>.

⁸ Memorandum of Telephone Conversation, “Telcon with Russian President Boris Yeltsin,” April 25, 1999, Declassified Documents Concerning Russian President Boris Yeltsin, Clinton Digital Library, <https://clinton.presidentiallibraries.us/items/show/57569>, p. 499.

⁹ Memorandum of Conversation, “Meeting with President Yeltsin of Russia,” June 20, 1999, Declassified Documents Concerning Russian President Boris Yeltsin, Clinton Digital Library, <https://clinton.presidentiallibraries.us/items/show/57569>, p. 502.

¹⁰ Alexei Arbatov, “The Transformation of Russian Military Doctrine: Lessons Learned from Kosovo and Chechnya,” *The Marshall Center Papers*, No. 2 (July 2000), <https://www.marshallcenter.org/en/publications/marshall-center-papers/transformation-russian-military-doctrine-lessons-learned-kosovo-and-chechnya/transformation-russian-military#toc-kosovo-s-impact-on-russian-perceptions-of-war-and-politics>.

¹¹ Benjamin Lambeth, “NATO’s Air War for Kosovo: A Strategic and Operational Assessment” (Santa Monica: RAND, 2001), https://www.rand.org/content/dam/rand/pubs/monograph_reports/MR1365/RAND_MR1365.pdf, p. 88.

significantly weaker and contained few of the advanced weapons the United States now boasted.¹² As a consequence, its military—according to one unnamed Russian general at the time—was “not only unable to win a large-scale war, but could ‘hardly even manage a local war.’”¹³

These realities had a direct impact upon Moscow’s thinking with respect to both the threat and use of strategic weapons in the late 1990s. As Kristin ven Bruusgaard explains, they compelled Russian military planners to see nuclear weapons as a tool for escalation management that could compensate for their country’s conventional inferiority vis-à-vis the West.¹⁴ Exemplifying this view, Yeltsin reportedly indicated at a meeting of Russia’s Security Council on April 29th 1999 that, “nuclear weapons are a ‘key element in ensuring the country’s national security’ and signed two decrees on the development of both strategic and tactical nuclear weapons.”¹⁵ That same year, Russia also conducted its first nuclear wargame since the dissolution of the USSR—Zapad-99¹⁶ which, per Minister of Defense Igor Sergeev—“tested one of the provisions of Russia’s military doctrine concerning a possible use of nuclear weapons when all other measures are exhausted.”¹⁷

The central importance of Russia’s nuclear deterrent to its national security was further institutionalized in April 2000 when newly appointed President Vladimir Putin approved a Military Doctrine that lowered considerably the threshold for nuclear use.¹⁸ As Nikolai Sokov observed at the time, this new declaratory policy abandoned “sole purpose” and instead articulated two new missions for Russia’s nuclear arsenal,¹⁹ namely “ensuring the military security of the Russian Federation and its allies and of maintaining international stability and peace” and as a “response to a large-scale aggression involving conventional weapons in situations that are critical for the national security of the Russian Federation and its allies.”²⁰ Further, as Sokov also points out, the Military Doctrine of 2000 identified regional conflicts for the first time as scenarios in which nuclear weapons could be used.²¹ This change was accompanied by the emergence of a new term—“expanded deterrence”—which referred in Russian military strategy to the use of nuclear weapons “to ‘de-escalate’ a regional war.”²²

As ven Bruusgaard is careful to note, however, not all Russian defense officials embraced the lowering of Russia’s nuclear threshold as a sustainable or permanent means of compensating for its

¹² Michael R. Gordon, “Maneuvers Show Reliance on Nuclear Arms,” *New York Times*, July 10, 1999, <https://www.nytimes.com/1999/07/10/world/maneuvers-show-russian-reliance-on-nuclear-arms.html>.

¹³ Deborah Yarsike Ball, “How Kosovo Empowers the Russian Military,” PONARS Policy Memo 61, May 1999, https://www.ponarseurasia.org/wp-content/uploads/attachments/pm_0061.pdf, p. 3.

¹⁴ Kristin ven Bruusgaard, “Russian nuclear strategy and conventional inferiority,” *Journal of Strategic Studies*, Vol. 44, No. 1 (2021), p. 13.

¹⁵ Deborah Yarsike Ball, “How Kosovo Empowers the Russian Military,” PONARS Policy Memo 61, May 1999, https://www.ponarseurasia.org/wp-content/uploads/attachments/pm_0061.pdf, p. 5.

¹⁶ Dave Johnson, “Russia’s Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds,” Livermore Papers on Global Security No. 3, February 2018, <https://cgsr.llnl.gov/content/assets/docs/Precision-Strike-Capabilities-report-v3-7.pdf>, p. 11.

¹⁷ Jacob Kipp, “Russia’s Northwest Strategic Direction,” *Military Review*, July-August 1999, <https://nuke.fas.org/guide/russia/agency/rusnwstrat.htm>.

¹⁸ Nikolai Sokov, “Do States Rely on Nuclear Weapons? The Case of Russia and Beyond,” *Nonproliferation Review*, Vol. 9, Issue 2 (Summer 2002), <https://www.nonproliferation.org/wp-content/uploads/npr/92sokov.pdf>, p. 104.

¹⁹ Nikolai Sokov, “Russia’s 2000 Military Doctrine,” *NTI*, September 30, 1999, <https://www.nti.org/analysis/articles/russias-2000-military-doctrine/>.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.

conventional weaknesses. She writes that “even then, Russian strategists identified the key vulnerability in nuclear de-escalation, that of credibility and escalation management...”²³ Indeed, although Sergeev believed at the time that Russia “needed an enhanced capability for strategic deterrence of large-scale conventional attack by a technologically superior adversary,” General Chief of Staff Anatoly Kvashnin had reached the opposite conclusion. In Kvashnin’s view, in contrast, Russia did not need a stronger nuclear capability but rather “a modernized conventional force”—one that would better enable it to “fight wars such as counterinsurgencies.”²⁴

A Decision on the Fate of Russia’s Strategic Arsenal

The differences between Sergeev and Kvashnin’s perspectives erupted in what Sokov describes as “an intense struggle within the Russian military establishment, which directly affected the country’s strategic posture, the relative influence of various military services, and the fate of high-level commanders of the Russian Armed Forces” in the summer of 2000.²⁵ At the center of this dispute, Sokov writes, was a proposal that Kvashnin put forward to reduce significantly Russia’s strategic forces and to direct the resulting savings toward building up its conventional capabilities. As part of these efforts, Sokov explains, Kvashnin recommended demoting Russia’s Strategic Rocket Forces from a separate element of the Armed Forces into a command, possibly under the oversight of the air force, and to reduce Russia’s ICBMs to just 150 within three years.²⁶ The objective of this plan was to ensure “that by 2016 Russia could create the ‘foundation’ for a ‘future conventional capability’” that would put it on par with the West.²⁷

As Sokov describes, Sergeev was deeply opposed to these proposed changes and reportedly “threatened to resign if Kvashnin’s plan was adopted.”²⁸ For reasons explained below, his position appears to have been linked in part to concerns over how Kvashnin’s plans would affect U.S. decisionmaking on national missile defense.²⁹ These concerns were front of mind in 2000 following efforts by the Clinton administration the year prior to seek Russia’s agreement to modify the ABM treaty and permit the deployment of 100 interceptor missiles at a single site in Alaska.³⁰ As Alexander Pikaev describes, however, Moscow had rejected these efforts in part out of fear that the United States in fact was seeking a “radical expansion of the NMD...system”—one that would threaten the strategic deterrent upon which Russia was almost wholly reliant at the time.³¹

In order to disincentivize the United States from moving ahead with plans to deploy NMD, therefore, the Russian military had sought to create what Sokov calls a “complicated ‘web of incentives’” which linked the future of U.S.-Russia arms control to the United States remaining in

²³ ven Bruusgaard, “Russian nuclear strategy and conventional inferiority,” p. 8.

²⁴ ven Bruusgaard, “Russian nuclear strategy and conventional inferiority,” p. 13.

²⁵ Sokov, “Russia’s 2000 Military Doctrine.”

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

²⁹ “Clinton Administration Offers Russia Inducements for Modifying ABM Treaty,” *The Jamestown Foundation Monitor* Volume 5, Issue 192 (1999), <https://jamestown.org/program/clinton-administration-offers-russia-inducements-for-modifying-abm-treaty/>.

³⁰ “National Missile Defense: Russia’s Reaction,” *Congressional Research Service* report, June 14, 2002, <https://crsreports.congress.gov/product/pdf/RL/RL30967/3>, p. 2.

³¹ Alexander Pikaev, “ABM Treaty Revision: A Challenge to Russian Security,” *Disarmament Diplomacy*, Issue No. 44 (March 2000), <http://www.acronym.org.uk/old/archive/44abm.htm>.

the ABM treaty.³² Indeed, Russia had tied its ratification of the 1993 Strategic Arms Reduction Treaty (START) II by law to the U.S. ratification of a September 1997 MOU confirming that the Soviet successor states would become the legal parties to the ABM treaty.³³ This move was designed to ensure that ABM opponents in the U.S. Senate would not be given a pretext for claiming that the 1972 accord was null and void because the USSR no longer existed—a move that could pave the way for the deployment of national missile defense capabilities.³⁴ For similar reasons, as Sokov describes, Russia’s military had also indicated that any U.S. deployment of national missile defense would result in “a refusal to reduce strategic arms and a limited modernization effort” on the part of Moscow.³⁵

Against this backdrop, Sergeev’s objections to Kvashnin’s plan appear to reflect at least in part a concern that, by gutting its strategic capabilities unilaterally, Russia would reduce incentives for the United States to remain in Cold War accord. Whether Putin himself subscribed to this logic or not, the bureaucratic infighting of the summer of 2000 did force him to make decisions about the future of Russia’s nuclear deterrent that had major implications for his country’s acquisition, threat, and use of strategic weapons down the road. Indeed, in August 2000, Putin reportedly committed to “eventually” reducing Russia’s nuclear arsenal to 1500 warheads—a nod to Kvashnin—but to do so in a manner that would be “gradual and linked to the expiration of the service of life of individual weapons systems.”³⁶ Although he simultaneously demoted the Strategic Rocket Forces as Kvashnin had suggested, Putin’s actions during this period ensured—per Sergeev’s proposal—that Russia would retain its nuclear triad and maintain a robust strategic capability for the foreseeable future.

Russia’s Reaction to the U.S. Withdrawal from ABM

While the “complicated ‘web of incentives’” that Russia’s military had woven to keep the United States in the ABM treaty might have worked on President Bill Clinton—who himself doubted the efficacy of national missile defense³⁷—they apparently held little sway over George W. Bush. Not only was Bush largely disinterested in legally binding arms control agreements—meaning that the carrot Russia was offering held little appeal—but even as a candidate, he had made ballistic missile defense a focus of his campaign. In one revealing 1999 speech, for instance, he indicated that he would “offer Russia the necessary amendments to the Anti-Ballistic Missile Treaty,” but that “if Russia refuses the changes we propose, we will give prompt notice under the provisions of the treaty that we can no longer be party to it.”³⁸ Once elected, Bush prepared to make good on these promises almost immediately, delivering a speech at National Defense University in May 2001 in which he outlined the need for “a new framework that allows us to build missile defenses to counter

³² Sokov, “Russia’s 2000 Military Doctrine.”

³³ Alexander Pikaev, “ABM Treaty Revision: A Challenge to Russian Security,” *Disarmament Diplomacy*, Issue No. 44 (March 2000), <http://www.acronym.org.uk/old/archive/44abm.htm>; Office of the Spokesman, “Fact Sheet: Memorandum of Understanding on Succession,” U.S. Department of State, September 26, 1997, https://1997-2001.state.gov/global/arms/fs-abm_succ_mou_970926.html.

³⁴ Anupam Srivastava, “A Russian Re-Evaluation of the ABM Treaty? Implications for US-Russia Relations and Arms Control in Asia,” *Disarmament Diplomacy*, Issue No. 39 (1999), <http://www.acronym.org.uk/old/archive/textonly/dd/dd39/39reeva.htm>.

³⁵ Sokov, “Russia’s 2000 Military Doctrine.”

³⁶ *Ibid.*

³⁷ “Remarks by President Bill Clinton On National Missile Defense” *Arms Control Today*, September 1, 2000, <https://www.armscontrol.org/act/2000-09/remarks-president-bill-clinton-national-missile-defense>.

³⁸ “Bush promises to ‘renew bond of trust’ between president, military,” CNN, September 23, 1999, <https://www.cnn.com/ALLPOLITICS/stories/1999/09/23/president.2000/bush.speech/>.

the different threats of today's world" and "to move beyond the constraints of the 30-year-old ABM Treaty."³⁹

After delivering this speech, the new American president began what Lynn Rusten describes as "an intensive 7-month period of consultation and diplomacy," the goal of which was to "seek the acquiescence of allies and countries such as Russia and China to a 'new strategic framework' that would include not only missile defenses, but also nonproliferation, counterproliferation, and unilateral nuclear reductions."⁴⁰ Instead of seeking Russian agreement to modify the treaty, however, John Bolton and Donald Rumsfeld, who were charged with negotiating with Moscow on this issue, began pushing for the United States and Russia to "withdraw from the ABM Treaty simultaneously."⁴¹ This approach prompted a flurry of articles in Russian media and think tank publications about how Moscow should respond should Washington pull out of the accord. The vast majority of these called for a rejection of any U.S. efforts either to modify ABM or withdraw from it entirely.

In a July 2001 piece for *Nezavisimaya Gazeta*, for example, Alexey Arbatov outlined how a modification of ABM would exacerbate the missile race and hurt U.S.-Russia engagement on nonproliferation-related issues.⁴² That same month, the *Washington Post* cited Igor Sergeev, the former defense minister and security advisor to Putin, as having indicated that "he has produced 30 different options for a Russian response" should the Bush administration move forward with plans for the deployment of a national missile defense capability.⁴³ In an article that the Center for Arms Control, Energy and Environmental Studies at MIPT published in August 2001, meanwhile, Soviet diplomat Gennady Khromov expressed the view that the collapse of ABM would lead to further instability and spell the end of U.S.-Russia arms reductions.⁴⁴ That same month, an article in *Kommersant* alleged that the United States was not engaging in good faith negotiations on ABM.⁴⁵

In this article, the head of the Russian military General Yuri Baluyevsky expressed frustration that the United States had never said explicitly what the deficiencies of the ABM treaty were from its perspective.⁴⁶ A December 2001 piece in *RLA Novosti* described, meanwhile, how a U.S. withdrawal from the treaty would be "unacceptable" to the Russian Federation on the grounds that it would undermine strategic stability.⁴⁷ According to analysis published in *Pravda* on the 13th of that month,

³⁹ Lynn Rusten, "U.S. Withdrawal from the Antiballistic Missile Treaty," Center for the Study of Weapons of Mass Destruction Case Study 2 (Washington, DC: National Defense University Press, 2010),

https://ndupress.ndu.edu/Portals/97/Documents/Publications/Case%20Studies/cswmd_cs2.pdf, p. 1.

⁴⁰ Rusten, "U.S. Withdrawal from the Antiballistic Missile Treaty," p. 7.

⁴¹ Rusten, "U.S. Withdrawal from the Antiballistic Missile Treaty," p. 6.

⁴² Arbatov, Alexei. "Eshhe Raz o PRO [Once Again On ABM]," *Nezavisimaya Gazeta*, July 4, 2001, https://www.ng.ru/ideas/2001-07-04/6_pro.html.

⁴³ Peter Baker, "Russia Says Alaska Test Site Would Break ABM Pact," *Washington Post*, July 20, 2001, <https://www.washingtonpost.com/archive/politics/2001/07/20/russia-says-alaska-test-site-would-break-abm-pact/7cf277f2-7c1a-487b-a86b-6cb6303e1345/>.

⁴⁴ Gennady Khromov, "Assessing Prospects for Development of U.S.-Russian Strategic Relations," Center for Arms Control, Energy and Environmental Studies, August 1, 2001, <http://armscontrol.ru/start/exclusive/gkk080101.htm>.

⁴⁵ Ilya Bulanov, "SShA Ne Znajut, Kak Narushit' Dogovor Po PRO" [The U.S. Does Not Know How to Violate the ABM Treaty], *Kommersant*, August 11, 2001, <https://www.kommersant.ru/doc/278112>.

⁴⁶ Ibid.

⁴⁷ "Vyhod Iz Dogovora Po PRO Nepriemlem Dlja Rossii Ni Pri Kakih Obstoitel'stvah" [Withdrawal from the ABM Treaty Is Unacceptable for Russia under Any Circumstances], *RLA Novosti*, December 10, 2001, <https://ria.ru/20011210/31924.html>.

Kvashnin himself expressed concern that a unilateral U.S. withdrawal from the treaty would “launch another round of arms race.”⁴⁸ As these perspectives indicate, both practitioner and expert opinion in Russia was that the demise of ABM would have major implications for U.S.-Russia relations and the future of strategic stability.

At a leadership level, however, Putin appeared determined to strike a balance between these two camps in his public response to Bush’s comments. He had at least three opportunities to do so at joint events with the American president in the summer and fall of 2001, where the future of ABM was a prominent topic of conversation. Following their first face-to-face meeting at a joint summit in Slovenia in June 2001, for instance, Bush had reiterated his belief that it was important to usher in a new era of U.S.-Russia relations including, “a new approach” that “protects both our people and strengthens deterrence by exploring and developing a new attitude toward defenses in missile defenses.”⁴⁹ Although Putin pushed back, repeating that ABM treaty remained “the cornerstone of the modern architecture of international security,” he nevertheless agreed that it was important for the United States and Russia to look jointly at emerging threats and “then make some decisions as to how we have to counter them.”⁵⁰

The Russian leader’s willingness to engage in a dialogue on the future of ABM, rather than rejecting the Bush administration’s talking points out of hand, seems to be explained at least in part by his desire to grow the Russian economy in ways that required cooperation with the United States. When Putin visited Bush at his ranch in Crawford in November 2001, for instance, he described Russia as being in a state of transformation in a Q and A session with high school students. He stressed in particular the fact that “the Russian economy is on the rise”—a surprise to many outside observers just three years after the 1998 collapse of the ruble.⁵¹ At the same time, however, he also articulated his view that his country just needed “one thing to develop normally,” namely “formal standards, conditions and relations with all the leading economies of the world, and primarily with the United States.”⁵²

Another important factor that appears to have tempered Putin’s response to Bush’s critiques of ABM during this period was the closeness of his relationship with his American counterpart following the September 11th terrorist attacks against the United States. Indeed, as Angela Stent relates, the Russian president had called Bush two days prior to the tragedy to inform him of the assassination of anti-Taliban leader Ahmad Shah Massoud and to share his “foreboding that something was about to happen, something long in preparation.”⁵³ When tragedy did strike, Putin was reportedly the first foreign leader to call the White House, and he contributed actively to

⁴⁸ “Chief Of Russian General Staff Believes US Withdrawal From Treaty Will Not Cause Military Problems to Russia,” *Pravda*, December 13, 2001, <https://english.pravda.ru/news/russia/25225-n/>.

⁴⁹ “Transcript: Bush, Putin news conference,” *CNN*, June 18, 2001, <http://edition.cnn.com/2001/WORLD/europe/06/18/bush.putin.transcript/>.

⁵⁰ *Ibid.*

⁵¹ “President Bush and President Putin Talk to Crawford Students,” The White House, November 15, 2001, <https://georgewbush-whitehouse.archives.gov/news/releases/2001/11/20011115-4.html>; “Russia’s Economy Improved in 2001, But Many Left Behind,” *VOA*, October, 27, 2009, <https://www.voanews.com/a/a-13-a-2001-12-25-2-russia-s-66432702/550359.html>.

⁵² “President Bush and President Putin Talk to Crawford Students.”

⁵³ Angela Stent, “The impact of September 11 on US-Russia relations,” *Brookings*, September 8, 2021, <https://www.brookings.edu/blog/order-from-chaos/2021/09/08/the-impact-of-september-11-on-us-russian-relations/>.

building what John O’Loughlin et al. refer to as an “international coalition to conduct the war on terrorism” in the aftermath.⁵⁴ Despite deep domestic opposition in Russia to these actions, Nadya Arbatova argues that Putin saw in them an opportunity to rebuild Russia’s status “on equal footing, as an equal partner of the West”—a goal which would ultimately come to guide his foreign policy vis-à-vis the United States.⁵⁵

Russia’s Reactions to the U.S. Withdrawal from ABM

It was against this backdrop that on December 13, 2001, Bush announced that he had notified the Russian Federation of his plan to withdraw the United States from the ABM treaty. As he indicated, his decision to do so flowed from his conclusion that “the ABM treaty hinders our government’s ability to develop ways to protect our people from future terrorist or rogue state missile attacks.” At the same time, the American president also indicated that he and Putin had “agreed that my decision to withdraw from the treaty will not in any way undermine our new relationship or Russian security.”⁵⁶ Although Bush’s actions followed months of speculation and bilateral discussion about the future of ABM, that he ultimately did decide to leave the treaty was a surprise to at least some in Moscow.

This, however, was the precise opposite of the message Putin conveyed in his public response to this news. In an address following the announcement, the Russian president stated explicitly that “This step was not a surprise for us.” Although, in his view, Bush’s decision was “a mistake,” he was careful to note that the U.S. withdrawal did “not threaten the national security of the Russian Federation.” This was in part because, as Putin indicated, “Russia, as well as the United States and unlike the rest of the nuclear powers, has long designed an efficient system for overcoming the anti-ballistic missile defenses.”⁵⁷

Putin’s words support Rusten’s observation that “Little pageantry or protest marked the U.S. move abrogating the ABM treaty and its prohibition against nationwide missile defenses...”⁵⁸ Indeed, in the days that followed Bush’s announcement, the reaction from members of Russia’s foreign policy community largely aligned in tone and substance with that of their leader. Former Soviet ambassador to the United States Anatoly Dobrynin asserted on December 14th, for example, that nothing should be done in retaliation to the U.S. departure from the accord given that, “at the end of the day, Bush never said that he intended to renew” the treaty.⁵⁹ Sergey Rogov, for his part, doubted that the case of the U.S. withdrawal from ABM was even closed, observing that there were still divisions within government regarding whether to exit from the agreement.⁶⁰

⁵⁴ John O’Loughlin, et al., “A ‘Risky Westward Turn?’ Putin’s 9-11 Script and Ordinary Russians,” *Europe-Asia Studies*, Vol. 56, No. 1 (2004), <https://www.jstor.org/stable/4147436>, p. 3.

⁵⁵ Nadya Arbatova, Thomas Graham, and Nicholas Tenzer, “9/11 and US Russia Relations” Transcript, Chatham House, September 9, 2021, <https://chathamhouse.soutron.net/Portal/Public/en-GB/DownloadImageFile.ashx?objectId=4971&ownerType=0&ownerId=189818>, p. 3.

⁵⁶ “U.S. quits ABM Treaty” CNN, December 14, 2001, <https://www.cnn.com/2001/ALLPOLITICS/12/13/rec.bush.abm/>.

⁵⁷ “Russia: Putin Calls U.S. ABM Decision A ‘Mistake.’”

⁵⁸ Rusten, “U.S. Withdrawal from the Antiballistic Missile Treaty,” p. 12.

⁵⁹ “Prjamaja Rech’ SShA v Odnostoronnem Porjadke Vyshli Iz Dogovora Po PRO” [Direct Speech: The U.S. Unilaterally Withdrew from the ABM Treaty], *Kommersant*, December 13, 2001, <https://www.kommersant.ru/doc/301713>.

⁶⁰ Vladimir Ardayev, “PRO Horonjat” [ABM Is Buried], *BBC Russian Service*, December 14, 2001, http://news.bbc.co.uk/hi/russian/news/newsid_1711000/1711871.stm.

Part of the reason for this mild-mannered response was the determination of those in Russia's cooperative camp not to jeopardize negotiations on a legally-binding strategic arms control agreement with the Bush administration, which had gotten underway less than two months after the American leader announced his withdrawal from the Cold War accord. Indeed, the fact that Washington had come to the arms control negotiating table at all during this period was somewhat surprising, considering that Bush had, per Rusten, "no interest in negotiated reductions" of the kind that Moscow sought.⁶¹ In February 2002, however, Bush conceded to Putin's calls for a formal agreement limiting both sides' strategic arsenals, a decision that led to the conclusion of the Strategic Offensive Reductions Treaty (SORT), or Moscow Treaty, three months later in May 2002. According to John Bolton, Bush's willingness to make this concession was rooted in a belief that Putin would become politically vulnerable were he not seen to have secured something from the United States—such as a legally binding commitment to reduce its strategic nuclear forces—in the aftermath of its withdrawal from ABM.⁶²

At the same time, however, not all within Russian government or civil society were prepared to accept the U.S. exit from the 1972 treaty quietly in exchange for the prospect of progress on arm control. On the contrary, a series of media reports published in the six months between Bush's announcement and the U.S. formal departure from the accord highlighted the reactions of Russian parliamentarians and elected officials, many of which echoed earlier talking points that unilateralist Russian experts and commentators had invoked prior to December 2001. At least one observer—the deputy chairman of the Duma's international affairs committee—noted that the U.S. decision to abrogate stood in opposition to the "new climate of trust and cooperation" that had arisen between the United States and Russia following 9/11.⁶³ Another—First Deputy Chair of the Duma Lyubov Sliska—called for a calm reaction but speculated that it might be necessary to assess carefully the "needs of the military budget in the coming years."⁶⁴

Going a step further, ultranationalist leader of the Russian political party LDPR Vladimir Zhirinovskiy observed, meanwhile, that a unilateral U.S. withdrawal from ABM was in fact "beneficial for Russia because it frees our hands."⁶⁵ Governor of Voronezh Vladimir Kulakov remarked ominously that, "although we do not consider the US an enemy, we are obligated to take adequate measures."⁶⁶ The *Christian Science Monitor* quotes Dmitri Rogozin, then chairman of the Duma's international affairs committee, as having said that, "If the ABM treaty ceases to exist, it follows that Russia should have a free hand in nuclear planning." Under these circumstances, he continued, "Logic dictates that we should move to offset the damage done to our security."⁶⁷

Russia's Acquisition of Strategic Weapons

⁶¹ Rusten, "U.S. Withdrawal from the Antiballistic Missile Treaty," p. 8.

⁶² Rusten, "U.S. Withdrawal from the Antiballistic Missile Treaty," p. 12.

⁶³ Ardayev, "PRO Horonjat" [ABM Is Buried].

⁶⁴ "Prjamaja Rech' SShA v Odnostoronnem Porjadke Vyshli Iz Dogovora Po PRO" [Direct Speech: The U.S. Unilaterally Withdrew from the ABM Treaty].

⁶⁵ "Deputaty Gosdumy otkazalis' podderzhat' proekt obrashcheniya k congressu SShA v svyazi s vykhodom Soedinnikh Shtatov iz Dogovora po PRO," *RIA*, December 14, 2001, <https://ria.ru/20011214/35090.html>.

⁶⁶ "Prjamaja Rech' SShA v Odnostoronnem Porjadke Vyshli Iz Dogovora Po PRO" [Direct Speech: The U.S. Unilaterally Withdrew from the ABM Treaty].

⁶⁷ Fred Weir, "US arms move could spark political fallout for Putin," *Christian Science Monitor*, December 14, 2001, <https://www.csmonitor.com/2001/1214/p6s1-woeu.html>.

At least initially, Russia's response to the U.S. withdrawal from ABM from the standpoint of its acquisition of strategic weapons appeared to sit somewhere in between these two camps. While it had little impact on Russia's overall nuclear posture, Washington's exit from the accord does appear to have accelerated efforts within Russia's military industrial complex to revive a number of once-promising but abandoned R&D projects designed to circumvent ballistic missile defense.⁶⁸ In the still somewhat financially austere environment in which Russia found itself in the early 2000s, this approach—which made use of fundamental research that had been conducted during the Soviet period—was one that made sense from a resource perspective. It also aligned largely with Putin's State Armament Plan (SAP) for 2002-2010 which, per Marcel de Haas, allocated the majority of available funds to “extensive R&D” in the area of military innovation rather than procurement.⁶⁹

Among the long-range, maneuverable Soviet-era delivery systems that Russia revisited during this period was the nuclear-capable hypersonic boost glide vehicle now called *Avangard*. Research on *Avangard* had been paused in the early 1990s, and while available evidence suggests that it was restarted no later than 1998—three years prior to the U.S. withdrawal from ABM⁷⁰—it was not until 2001 that the program was officially brought back to life.⁷¹ According to previous research conducted by two of the authors of this report (Bidgood and Notte), it was none other than Igor Sergeev who had pushed for the revival of *Avangard*.⁷² A live test of the HGV is believed to have been conducted in 2004 during Russia's Security-2004 [Безопасность-2004] war games,⁷³ where Putin announced “with satisfaction” that the “experiments” conducted in conjunction with these military exercises validated “the latest technical systems” which are “able to hit targets at intercontinental depths with hypersonic speeds and high accuracy with the possibility of deep maneuvers in altitude and in course.”⁷⁴

A second long-range, maneuverable Soviet-era delivery system that appears to have been brought back to life in response to U.S. plans to withdraw from ABM is the *Burevestnik* nuclear powered cruise missile. As the same two authors found in their earlier study, work on this delivery system was initiated in 2001 “as the George W. Bush administration was preparing to withdraw from the ABM Treaty.”⁷⁵ Although little is known about the technical specifications or innovation lifecycle of *Burevestnik*, it appears that its ability to attack from the South and, thus, avoid either early-warning or missile defenses may to explain the sustained support the cruise missile has enjoyed despite some devastating public setbacks in recent years.⁷⁶ While Soviet efforts to develop nuclear powered cruise missiles predate work on *Burevestnik* by decades, it is likely that renewed U.S. interest in a national

⁶⁸ “Russia: Putin Calls U.S. ABM Decision A ‘Mistake.’”

⁶⁹ Marcel de Haas, “Russia's Military Reforms: Victory after ‘Twenty Years of Failure?’” Clingendael Paper No. 5 (Netherlands Institute of International Relations ‘Clingendael,’ November 2011), https://www.clingendael.org/sites/default/files/pdfs/20111129_clingendaelpaper_mdehaas.pdf, p. 13.

⁷⁰ Hanna Notte et. al., “Russia's novel weapons systems: military innovation in the post-Soviet period,” *Nonproliferation Review*, Vol. 28, Issue 3 (2021), p. 8.

⁷¹ Notte, et al., “Russia's novel weapons systems,” p. 9.

⁷² Notte, et al., “Russia's novel weapons systems,” pp. 9-10.

⁷³ Dave Majumdar, “Here Is Everything We Know (And Don't) About Russia's Mysterious ICBM Tests,” *National Interest*, September 27, 2017, <https://nationalinterest.org/blog/the-buzz/here-everything-we-know-dont-about-russias-mysterious-icbm-22502>.

⁷⁴ Vladimir Putin, “Zayavlenie dlya pressy i otvety na voprosy vo vremya poseshcheniya kosmodroma Plesetsk,” February 18, 2004, <http://kremlin.ru/events/president/transcripts/22357>.

⁷⁵ Notte, et al., “Russia's novel weapons systems,” p. 73.

⁷⁶ Notte, et al., “Russia's novel weapons systems,” p. 74.

missile defense capability—as manifest not just by its withdrawal from ABM but also actions that preceded it—breathed new life into these efforts.⁷⁷

A third long-range, maneuverable Soviet-era delivery system in which Russian interest may have intensified following the U.S. withdrawal from ABM is the maneuverable reentry vehicle, or MaRV. The shifting path taken by these warheads upon reentering the atmosphere renders interception more challenging, making them ideal for circumventing ballistic missile defenses. Indeed, as Nikolai Sokov has summarized, the Soviet/Russian effort to develop MaRVs “was launched in mid-1980s as part of response to Star Wars [and] reached prototype stage by 1990-1991” before ultimately being shelved.⁷⁸ According to Sokov, however, the Russian MaRV program—like *Avangard*—was “resurrected in 1997 or 1998”—several years *prior* to the U.S. withdrawal from ABM.

Because these programs advanced in tandem with much broader efforts initiated in the early-to-mid 2000s to modernize Russia’s aging strategic capabilities, it is difficult to determine conclusively which of them were a direct response to the U.S. withdrawal from ABM and which would have been carried out regardless.⁷⁹ Indeed, upgrades to Russia’s strategic forces would have been necessary whether or not the United States remained in the Cold War accord in light of Moscow’s continued reliance upon nuclear weapons for deterrence purposes and the fact that, per Philipp Bleek, “Russia’s current land-based missiles (with the exception of the *Topol-M*) will all have reached or exceeded the end of their normal service lives by the end of the decade” [2010].⁸⁰ And yet, it is significant that the day after the U.S. withdrawal from the ABM treaty, Russia declared that it would no longer abide by the terms of the not-yet-in-force START II and would correspondingly extend the service life of its existing MIRVed ICBMs until 2016.⁸¹ Although then-Minister of Defense Sergey Ivanov claimed the following month that Moscow’s decision to do so was unrelated to Washington’s exit from ABM, this event certainly helped to create an environment in which Russia could retain components of its arsenal that it considered valuable with fewer political consequences.

Russia’s larger efforts to both preserve and modernize its strategic nuclear deterrent during this period were accompanied by a reinstatement of the Strategic Rocket Forces as a central component of its nuclear triad.⁸² Yet, while this bureaucratic/organizational change further cemented the importance of Russia’s strategic missiles, it also came on the heels of the conclusion of the Strategic Offensive Reductions Treaty for which, as described previously, Putin had been strongly in favor. This legally binding agreement capped both the Russian and American deployed strategic nuclear forces at 1,700-2,200 warheads, suggesting that Moscow was not looking to the U.S. withdrawal from ABM at the time as a pretext to engage in unfettered nuclear arms racing. Nevertheless, Moscow’s behavior during this period does suggest, as Sokov has, that Washington’s exit from the Cold War accord in conjunction with the

⁷⁷ Notte, et al., “Russia’s novel weapons systems,” p. 72.

⁷⁸ Majumdar, “Here Is Everything We Know (And Don’t) About Russia’s Mysterious ICBM Tests.”

⁷⁹ Amy Woolf, “Russia’s Nuclear Weapons: Doctrine, Forces, and Modernization,” *Congressional Research Service* report, March 1, 2022, <https://crsreports.congress.gov/product/pdf/R/R45861/9>.

⁸⁰ Philipp Bleek, “Russia Approves Topol-M; Warns Missile Could Defeat U.S. Defense,” *Arms Control Today*, June 2000, <https://www.armscontrol.org/act/2000-06/news/russia-approves-topol-m-warns-missile-could-defeat-us-defense>.

⁸¹ Sokov, “The Nuclear Debate of Summer 2000.”

⁸² *Ibid.*

continued eastward enlargement of NATO, and the establishment of US military bases in Central Asia [were] all viewed in Russia as a potential threat and would not have been left without a response (including first and foremost a higher profile for nuclear weapons.)⁸³

Correspondingly, as Putin indicated in his 2004 State of the Union Address—his first following his overwhelming reelection to the presidency—“modernizing the Russian Armed Forces remains a very important task, including equipping strategic nuclear forces with the most modern systems of strategic armaments.”⁸⁴ On this basis, and against the backdrop of continuing rapid economic growth,⁸⁵ he approved his second SAP in 2006. In contrast with the SAP for 2002-2010, which allocated the majority of available funds to R&D, this SAP, per Marcel de Haas, was aimed at ensuring that Russia was “fully equipped with modern weapons systems—that is, a ratio of 70 per cent modern versus 30 per cent old weapons” by 2025.⁸⁶ In partial fulfillment of this goal, Russia began to pursue so-called “next generation” ICBMs which, like their Soviet analogs, were of carrying MIRVs that could circumvent, evade, or overwhelm ballistic missile interceptors.⁸⁷

Among the “next generation” missiles Russia began to develop against this backdrop was the RS-24 *Yars*⁸⁸—a solid fueled ICBM that can be either silo-based or road-mobile. According to Franz-Stefan Gady, *Yars* is a MIRVed version of a Topol ICBM and is equipped with active and passive decoys which, per Russian military outlet *Top War*, “dramatically increases its value in the context of the deployment of a global missile defense system.”⁸⁹ Another missile system whose development followed the U.S. withdrawal from ABM was the RS-28 *Sarmat*,⁹⁰ which Pavel Podvig has described as a “silo-based liquid fuel ICBM” whose throw-weight “enables the missile to carry a larger number of warheads and counter-measures.”⁹¹ In 2010, Russian media reported that the contract for the development of *Sarmat* had been awarded to the Makeev State Missile Center, and that its maneuverable warheads were “invulnerable to air and missile defense systems” [translation mine].⁹²

While the technical specifications of both *Yars* and *Sarmat* suggest that they were conceived of exclusively as a means to overcome U.S. national missile defenses, Putin’s own comments from the mid-2000s suggest that other considerations helped to drive their acquisition, as well. Indeed, as the president indicated during his aforementioned State of the Union Address in 2004, he considered

⁸³ Ibid.

⁸⁴ Vladimir Putin, “Annual Address to the Federal Assembly of the Russian Federation,” May 26, 2004, <http://en.kremlin.ru/events/president/transcripts/22494>.

⁸⁵ Douglas Busvine, “Update 2-Russia’s GDP rises 6.7 pct in 2006- stats office,” *Reuters*, January 31, 2007, <https://www.reuters.com/article/economy-russia/update-2-russias-gdp-rises-6-7-pct-in-2006-stats-office-idUKL3174468820070131>.

⁸⁶ de Haas, “Russia’s Military Reforms: Victory after Twenty Years of Failure?” p. 13.

⁸⁷ Putin, “Presidential Address to the Federal Assembly,” March 1, 2018.

⁸⁸ RS-24 *Yars* (SS-27 Mod 2), *Missile Threat: CSIS Missile Defense Project*, August 12, 2021, <https://missilethreat.csis.org/missile/rs-24/>.

⁸⁹ “Russia adopted the RS-24 *Yars* division,” *Top War*, July 20, 2010, <https://en.topwar.ru/735-rossiya-prinyala-na-vooruzhenie-divizion-rs-24-yars.html>.

⁹⁰ “Key facts about Russia’s advanced Sarmat ICBM system,” *Tass*, March 1, 2018, <https://tass.com/defense/992360>; Pavel Podvig, “New ICBM contract reportedly went to Makayev Design Bureau,” *Russian Forces*, May 14, 2011, https://russianforces.org/blog/2011/05/new_icbm_contract_reportedly_w.shtml.

⁹¹ Pavel Podvig, “Russia’s Current Nuclear Modernization and Arms Control,” *Journal for Peace and Disarmament Studies*, Vol. 1, No. 2 (2018), p. 259.

⁹² Anton Balagin, “Poyavilos’ pervoe izobrazhenie tyazhelej rakety ‘Sarmat,’” *Rossijskaya gazeta*, <https://rg.ru/2016/10/23/poiavilos-pervoe-izobrazhenie-tiazhelej-rakety-sarmat.html>.

strengthening Russia's strategic nuclear forces to be a necessity in order to "secure our country from any forms of military and political pressure and foreign aggression."⁹³ Putin touched upon similar themes two years later, observing that the United States' "defense budget in absolute figures is almost 25 times bigger than Russia's." On this basis, he believed that "we also need to build our home and make it strong and well protected" because

the wolf knows who to eat, as the saying goes. It knows who to eat and is not about to listen to anyone, it seems.⁹⁴

Putin's remarks are revealing both of the changing nature of U.S.-Russia relations during this period and the manner in which these shifts influenced views in Moscow about the threat posed by missile defense. While there is little evidence to suggest that Russian military and political figures perceived a greater threat from U.S. national missile defense by the mid-2000s than they had immediately following Washington's withdrawal from the ABM treaty, there are indications that Moscow increasingly objected to what were seen as the Bush administration's efforts to create and maintain a unipolar world order *as evidenced*—in their view—by its exit from the Cold War accord. These objections were fueled by the U.S. invasion of Iraq in 2003, the expansion of NATO, and the Rose and Orange Revolutions in Georgia and Ukraine, respectively.⁹⁵ They were further confirmed by Washington's efforts to place forward-deployed missile defense capabilities in territories which Russia considered to be within its traditional sphere of influence.

The latter of these developments came to a head in October 2007, when Bush announced that he planned to "deploy a system made up of 10 ground-based interceptors located in Poland and an X-Band tracking radar located inside the Czech Republic" to defend against Iranian missiles.⁹⁶ In response, Putin delivered a blistering set of remarks at the Munich Security that year which he accused the United States of "overstep[ing] its national borders in every way" as manifest by "the economic, political, cultural and educational policies it imposes on other nations."⁹⁷ In this same speech, while acknowledging that he still considered George W. Bush to be his "friend" and a "decent person," the Russian leader also predicted that the U.S. pursuit of missile defense would render the balance of power "absolutely destroyed." While he acknowledged that he did not believe that U.S. missile defense was, in fact, aimed at Russian missiles, he nevertheless considered it important to develop an asymmetric response to U.S. ABM efforts "so that everybody can understand that the anti-missile defense system is useless against Russia."⁹⁸

Against this backdrop, it appears that Russia's pursuit of *Sarmat*, *Yars*, and other maneuverable delivery systems in the mid-to-late 2000s can best be understood *not only* as a reaction to the security concerns resulting from the U.S. pursuit of ABM *but also* to what Washington's withdrawal from the treaty appeared to signify about its attitude toward Moscow and the world. Correspondingly, by 2007—and in contrast with his initial sanguine reaction to Bush's departure from the treaty—Putin

⁹³ Putin, "Annual Address to the Federal Assembly of the Russian Federation," May 26, 2004.

⁹⁴ Vladimir Putin, "Annual Address to the Federal Assembly," May 10, 2006, <http://en.kremlin.ru/events/president/transcripts/23577>.

⁹⁵ Thomas Ambrosio, "The Russo-American Dispute over the Invasion of Iraq: International Status on the Role of Positional Goods," *Europe-Asia Studies*, Vol. 57, No. 8 (December 2005), p. 1190.

⁹⁶ "President Bush Visits National Defense University, Discusses Global War on Terror," White House press release, October 23, 2007, <https://georgewbush-whitehouse.archives.gov/news/releases/2007/10/20071023-3.html>.

⁹⁷ Putin, "Speech and the Following Discussion at the Munich Security Conference on Security Policy."

⁹⁸ *Ibid.*

appears to have considered it important to show that his American counterpart could no longer take unilateral actions without regard for Russia's security concerns and expect Moscow not to respond. More than a decade later, Putin made this connection explicit during his 2018 State of the Union Address, where he debuted *Sarmat* and a number of the revived delivery systems described earlier in this case study. Although he identified each as a "response to the unilateral withdrawal of the United States of America from the anti-ballistic missile Treaty and the practical deployment of their missile defense systems both in the US and beyond their borders,"⁹⁹ he acknowledged that they were also intended to elicit respect from Washington, observing that "nobody really wanted to talk to us about the core of the problem, and nobody wanted to listen to us. So listen now."¹⁰⁰

As these findings suggest, the most immediate impacts of the U.S. withdrawal from the ABM treaty on Russia's acquisition of long-range nuclear and dual-capable delivery systems were (a) to catalyze the revival of once-promising but abandoned Soviet capabilities aimed at evading ballistic missile defense and (b) to provide a further rationale for strategic modernization efforts on which Moscow was already embarking. A secondary impact of the Bush administration's departure from the accord, which only began to manifest in the mid-2000s amidst the souring of U.S.-Russia relations, was to spur Russia's pursuit of new delivery systems that could force Washington to take Moscow seriously. These findings align with previous work by two of the authors which highlights the role of prestige, among other internal and external forces, in sustaining Russia's pursuit of novel delivery systems.¹⁰¹ They also appear to reflect the Russian population's growing belief during this period in the importance of nuclear weapons and missiles to achieving great power status.¹⁰²

Russia's Threat and Use of Strategic Weapons

In contrast with the preceding discussion of Russia's acquisition of strategic weapons, Russia's declaratory policy, which outlines the role of nuclear weapons and the circumstances under which it would use them, does not appear to have changed at all in the aftermath of the Bush administration's withdrawal from ABM. On the contrary, having just issued a new military doctrine in 2000, Putin did not approve further revisions until 2010—eight years after the United States left the accord. Moreover, although the consensus among experts at the time was that the 2000 doctrine had lowered the threshold to nuclear use by specifying that Russia could

use nuclear weapons in response to the use of nuclear and other types of weapons of mass destruction against it and (or) its allies, *as well as in response to large-scale aggression utilizing conventional weapons in situations critical to the national security of the Russian Federation*¹⁰³

these changes appeared *prior* to the U.S. abrogation of the 1972 accord. Significantly, when Putin did issue his revised military doctrine in 2010, meanwhile, the language on nuclear weapons use above did not change at all.

⁹⁹ Putin, "Presidential Address to the Federal Assembly," March 1, 2018.

¹⁰⁰ Ibid.

¹⁰¹ Notte, et al., "Russia's novel weapons systems," p. 70.

¹⁰² "68% of Russian Citizens Consider Russia a Superpower," *Levada* press release, December 23, 2014, <https://www.levada.ru/en/2014/12/23/68-of-russian-citizens-consider-russia-a-superpower/>.

¹⁰³ "Russia's Military Doctrine," *Arms Control Today*, undated, <https://www.armscontrol.org/act/2000-05/russias-military-doctrine>.

It is the case that, one year after the Bush administration pulled out of ABM, Sergei Ivanov issued document on “Russia’s Geopolitical Priorities and Armed Forces” in which he expressed concern over “a possible re-emergence of nuclear weapons as a real military instrument.”¹⁰⁴ In his view, this development represented an “extremely dangerous tendency that is undermining global and regional stability.” While Ivanov did not consider any “existing conflicts beyond Russia” to be posing a “direct military threat to its security,” he perceived that “even a modest lowering of the threshold for the employment of nuclear weapons would still demand that Russia rebuild its troop control systems, as well as the principles for the combat employment of its troops.”¹⁰⁵ Yet, nowhere in this document does he mention the potential threat posed by the U.S. deployment of national missile defense or suggest that these developments would merit such a response.

A shift did emerge in the rhetoric of Putin and other high ranking Russian officials, however, once the Bush administration appeared to near the completion of an agreement to forward-deploy missile defense capabilities in Poland and the Czech Republic.¹⁰⁶ During his 2007 address before the Munich Security Conference referenced previously, for instance, the Russian president informed his audience that “Plans to expand certain elements of the anti-missile defense system to Europe cannot help but disturb us.”¹⁰⁷ In particular, he rejected the rationale that the placement of U.S. missile defenses in Europe was directed toward so-called rogue nations. Instead, he observed that “any hypothetical launch of, for example, a North Korean rocket to American territory through western Europe obviously contradicts the laws of ballistics. As we say in Russia, it would be like using the right hand to reach the left ear.”¹⁰⁸

Shortly thereafter, Putin and other senior Russian officials began to issue threats against countries in the region that had agreed or appeared to be considering hosting U.S. missile defense systems on their territory. During an early 2008 meeting with then-Ukrainian president Viktor Yushchenko, for instance, Putin indicated that “Russia could target its missile systems at Ukraine” if Kyiv decided to host U.S. missile defense systems on its territory.¹⁰⁹ In August 2008, Colonel General Anatoly Nogovitsyn issued a similar threat to the leadership in Warsaw. As he explained, Poland was “exposing itself to a strike-100%” by becoming a part of the United States’ missile defense shield.¹¹⁰

As history shows, however, Russia did not make good on these threats. Furthermore, although any Russian attack against a NATO state could lead to a U.S.-Russia military confrontation, Washington’s withdrawal from ABM and subsequent deployment of missile defense in Europe did not elicit direct threats of strategic weapons use against the United States from Russian officials at the time. Moreover, Russia has not used any of the long-range “next-generation” ballistic missiles or maneuverable delivery systems highlighted in this case study in combat despite the fact that most have now been deployed. The main exceptions in this regard are *Sarmat*, which appears to have been

¹⁰⁴ For an English translation, see Sergei Ivanov, “Russia’s Geopolitical Priorities and Armed Forces,” *Global Affairs*, No. 1, January/February 2004, <https://eng.globalaffairs.ru/articles/russias-geopolitical-priorities-and-armed-forces/>.

¹⁰⁵ Ibid.

¹⁰⁶ Megan Scully, “Lawmaker plans to attach strings to missile defense funds,” *Government Executive*, April 10, 2008, <https://www.govexec.com/defense/2008/04/lawmaker-plans-to-attach-strings-to-missile-defense-funds/26673/>.

¹⁰⁷ Putin, “Speech and the Following Discussion at the Munich Security Conference on Security Policy.”

¹⁰⁸ Ibid.

¹⁰⁹ Luke Harding, “Putin issues nuclear threat to Ukraine over plan to host US shield,” *The Guardian*, February 13, 2008, <https://www.theguardian.com/world/2008/feb/13/russia.putin>.

¹¹⁰ Ian Traynor, et al., “Moscow warns it could strike Poland over US missile shield,” *The Guardian*, August 15, 2008, <https://www.theguardian.com/world/2008/aug/15/russia.poland.nuclear.missiles.threat>.

tested unsuccessfully in late February 2023, and *Burevestnik*, which made headlines in 2019 when an effort to recover it from the ocean floor resulted in a deadly explosion.¹¹¹

Nevertheless, in the period following the Bush administration's withdrawal from ABM, Russia did use other forms of coercive signaling—such as military exercises—to demonstrate its long-range strategic and maneuverable capabilities to outside observers in the West. For instance, and as described previously, Russia used its Security-2004 war games to test a Topol ICBM mounted with what is now presumed to have been an *Avangard* hypersonic glide vehicle. Although Chief of the General Staff Colonel General Yuri Baluevski denied vigorously at the time that the exercises were targeted against the United States, these claims were met with skepticism by observers.¹¹² Indeed, as Vladimir Dvorkin concluded then, “In spite of what seems to be a partnership with the United States and the ongoing dialogue in the area of strategic cooperation, the state of mutual nuclear deterrence continues.”¹¹³

Analysis

Drivers and Constraints on Strategic Weapons Acquisition Pre-Pattern Break

The preceding analysis shows that, in the period just *prior* to the U.S. withdrawal from ABM, Moscow's views about the utility of nuclear weapons was being informed primarily by two factors: The first and most significant of these were Russia's insecurities resulting from its inferior conventional capabilities vis-à-vis NATO, which drove Russia to rely heavily upon its existing nuclear arsenal for de-escalation and immediate deterrence purposes. A second factor driving Russia's retention, if not acquisition, of strategic weapons during this period was its desire to force the United States to remain in the ABM treaty and to leave the treaty unchanged. Indeed, some within Russia's defense enterprise feared that any unilateral reductions of the country's strategic forces would limit Moscow's ability to threaten the United States with either an end to arms control or a military buildup if it left the 1972 accord.¹¹⁴

Against this backdrop, it is unsurprising that Putin rejected proposals to gut Russia's strategic forces in order to allocate more funds to building up a conventional deterrent in the summer of 2000. At the same time, however, Russia's ability to do much more than maintain its existing strategic weapons arsenal was severely limited during this period by the austere economic landscape that followed the 1998 collapse of the ruble. Further, despite the downturn in relations between Presidents Yeltsin and Clinton at the ends of their respective terms in office, Vladimir Putin appears to have perceived that there were economic and geopolitical benefits to be gained by building a closer and more cooperative relationship with his counterpart in Washington. It is possible that his desire to reap these benefits curtailed his interest in devoting limited resources to a significant buildup of Russia's strategic capabilities in the period prior to the U.S. withdrawal from ABM in order to avoid alienating policymakers in Washington.

¹¹¹ Oren Liebermann and Natasha Bertrand, “US believes Russia had failed intercontinental test around when Biden was in Ukraine,” *CNN*, February 22, 2023, <https://www.cnn.com/2023/02/21/politics/russia-intercontinental-ballistic-missile-test/index.html>.

¹¹² Nikolai Sokov, “Military Exercises in Russia,” *Nonproliferation.org*, February 24, 2004, <https://nonproliferation.org/military-exercises-in-russia/>.

¹¹³ As quoted by Nikolai Sokov in *ibid.*

¹¹⁴ Sokov, “The Nuclear Debate of Summer 2000.”

Drivers and Constraints on Strategic Weapons Acquisition Post-Pattern Break

In the immediate aftermath of the U.S. withdrawal from ABM, meanwhile, Russia's pursuit of strategic weapons appears on the surface to have been driven by the same considerations outlined above *plus* a perceived need to circumvent national ballistic missile defense. Russia's ability to pursue maneuverable capabilities that could fulfill this mission set was increased by (a) the availability of once-promising but abandoned Soviet weapons programs designed for this purpose and (b) its decision not to abide by the limits imposed by START II, which enabled it to retain and extend the life of its Soviet-era MIRVed ICBMs. If Putin is to be taken at his word, however, he did not consider Washington's withdrawal from ABM to be a major threat to the Russian Federation at the time because it already had "an efficient system for overcoming the anti-ballistic missile defenses."¹¹⁵ His comments in this regard—paired with Sokov's observation that the "retention of old, Soviet-time ICBMs, and continued ICBM modernization... could not have been avoided under any circumstances" call into question the degree to which security concerns posed by NMD were, in fact, a primary factor behind Russia's pursuit of these capabilities.¹¹⁶

In the years that followed the Bush administration's withdrawal from ABM, the downturn in relations between Washington and Moscow appears to have strengthened normative incentives for Russia to pursue new long-range and maneuverable capabilities, including "next generation" MIRVed ICBMs. Indeed, by the mid-2000s, Putin had grown increasingly outspoken against perceived U.S. efforts to establish a unipolar world order through unilateral actions that ignored Russia's security interests—of which its abrogation of the ABM treaty appeared to be part. Against this backdrop, the Russian president's rhetoric in the period from 2004–2007 suggests that a major driver behind the pursuit of strategic weapons became his desire to show the United States that Russia and its security concerns had to be taken seriously. These findings complement insights derived from earlier research on Russia's novel weapons, which highlight the role of prestige in driving post-Soviet military innovation.

A primary constraint on Moscow's pursuit of strategic weapons immediately following the U.S. exit from ABM, meanwhile, remained Russia's weak economy. Indeed, while Russia's financial circumstances were improving by 2002, its still-limited resources were likely in part behind its interest in reviving once-promising Soviet R&D efforts and modernizing existing capabilities rather than pursuing wholly new weapons systems. Further, although it appears that Putin's desire to continue cooperation with the United States—including in the area of strategic arms control—may have initially acted as a brake on his pursuit of strategic weapons, these constraints lost some of their potency as bilateral relations soured. While Putin continued to describe George W. Bush as his friend throughout the mid-2000s and to tout the value of U.S. and Russian leadership in areas such as the prevention of nuclear terrorism, it is not clear that these considerations had a significant restraining influence on his pursuit of strategic weapons at the time.

Drivers and Constraints on Russia's Threat and Use of Strategic Weapons Pre-Pattern Break

Prior to the pattern break in question, Russia communicated threats to use its nuclear and strategic weapons primarily through its declaratory policy, war games, and military exercises. Particularly in

¹¹⁵ "Russia: Putin Calls U.S. ABM Decision A 'Mistake.'"

¹¹⁶ Bleek, "Russia Approves Topol-M; Warns Missile Could Defeat US Defense."

the aftermath of the war in Kosovo, which changed significantly how Russia perceived NATO and the United States, Russia appears to have been driven to communicate these threats as a way of compensating for its weak conventional capabilities—signaling that it could use nuclear weapons as a means to “‘de-escalate’ a regional war.”¹¹⁷ To this end, and as described above, Putin issued a new military doctrine in 2000 that reduced Russia’s threshold for nuclear use. In contrast with its previous military doctrine, the new version specified that Russia could

use nuclear weapons in response to the use of nuclear and other types of weapons of mass destruction against it and (or) its allies, *as well as in response to large-scale aggression utilizing conventional weapons in situations critical to the national security of the Russian Federation* [emphasis mine].¹¹⁸

The credibility of Russia’s “expanded deterrence” had been demonstrated the year prior through its first nuclear wargame since the dissolution of the USSR—Zapad-99.¹¹⁹ Per *Arms Control Today*, this exercise “simulated a conventional NATO attack against Russian territory,” and it centered on a scenario in which “Russian conventional troops were unable to repel the NATO attack, prompting Russia to use several nuclear weapons.”¹²⁰ Jacob Kipp has described how “For the first time in a decade, Russian super-sonic, cruise-missile-armed Tu-160 ‘Blackjack’ bombers streaked down the coast of Norway while Tu-95 ‘Bears’ probed Iceland’s airspace” in conjunction with this exercise.¹²¹ Igor Sergeev reportedly explained at the time that it had “tested one of the provisions of Russia’s military doctrine concerning a possible use of nuclear weapons when all other measures are exhausted.”¹²²

In addition to signaling threats of strategic use through its military doctrine and wargames during this period, Russian leaders also conveyed tacit threats to use nuclear/strategic weapons through official statements—albeit very infrequently. Indeed, in one rare instance in December 1999, Boris Yeltsin responded to Bill Clinton’s criticisms of Russia’s attacks on Chechnya by observing that his American counterpart appeared to have “for a minute, for a second, for half a minute, forgotten that Russia has a full arsenal of nuclear weapons.”¹²³ Yeltsin’s statement appears to have been designed primarily to deter the Clinton administration from taking action against Russia—including sanctions—in conjunction with its efforts to bring an end to Russian bombing and missile strikes against the region. More broadly, however, it also seemed to have been intended as a reminder to policymakers in Washington that Moscow should not be dismissed as a former great power.

Although Russia did communicate threats of strategic weapons use through its declaratory policy, war games, and official statements prior to the U.S. withdrawal from ABM, however, it largely avoided nuclear saber-rattling during this period. On the contrary, and in contrast with the present day, Russia did not conduct any regular military exercises following the dissolution of the Soviet Union aside from Zapad-99, and it is difficult to find many instances where Putin or Yeltsin issued

¹¹⁷ Sokov, “The Nuclear Debate of Summer 2000.”

¹¹⁸ “Russia’s Military Doctrine,” *Arms Control Today*.

¹¹⁹ Johnson, “Russia’s Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds,” p. 11.

¹²⁰ “Russia Adopts New Security Concept,” *Arms Control Today*, undated, https://www.armscontrol.org/act/2000_01-02/rujf00.

¹²¹ Kipp, “Russia’s Northwest Strategic Direction.”

¹²² Ibid.

¹²³ Michael Laris, “In China, Yeltsin Lashes Out at Clinton,” *Washington Post*, December 10, 1999, <https://www.washingtonpost.com/wp-srv/WPcap/1999-12/10/123r-121099-idx.html>.

explicit nuclear threats other than that identified above. While it is impossible to say conclusively what accounts for this fact, deterrence and Russia's desire to avoid a direct military confrontation with the West almost certainly served as the primary constraint on Moscow's behavior in this regard. Additionally, it is likely that Russia's largely positive relationship with the West just prior to Bush's withdrawal from ABM has at least some explanatory value here; as Putin indicated in the year 2000, for instance, "it is with difficulty that I imagine NATO as an enemy."¹²⁴

Another possible constraint on Russia's threats to use strategic weapons, however, may have been a recognition of their limited value in scenarios that did not warrant an overwhelming nuclear response. Indeed, as ven Bruusgaard has observed, "even then, Russian strategists identified the key vulnerability in nuclear de-escalation, that of credibility and escalation management..."¹²⁵ Under these circumstances, Russian leaders and military officials may have been reluctant to engage in nuclear saber-rattling too frequently or in contexts where nuclear use would not have been proportionate to avoid undermining the strength of their nuclear deterrent—on which they were overly reliant. While there is less evidence to support this view, it is also possible that Moscow feared being forced into a commitment trap, or a situation which it was forced to deliver on threats to use nuclear weapons in order to maintain the credibility of its deterrent even when doing so did not serve its own interests.¹²⁶

Drivers and Constraints on Russia's Threat and Use of Strategic Weapons Post Pattern Break

Immediately following the U.S. withdrawal from ABM, neither the manner nor the extent to which Russia threatened the use of strategic weapons appears to have changed at all. Indeed, as outlined previously, Putin did not issue a new military doctrine until 2010, and when that document was released, the language outlining the circumstances under which Russia would use nuclear weapons remained identical. Further, after Zapad-99, described above, Russia did not resume regular war games. It was only in 2008 that it reinstated "annual strategic combined arms exercises."¹²⁷

Following the U.S. withdrawal from ABM, however, Russia did conduct ad hoc wargames, which it used to showcase new and emerging military technologies. In 2004, for instance, and as described earlier in this case study, Russia convened its *Bezopasnost'* exercise, which—per Anatoly Zak—featured test launches for a number of Russia's modernized or prototype military technologies. While a number of the launches failed—to the embarrassment of Russia's military—one of those that succeeded was the *Avangard* hypersonic glide vehicle. Afterwards, Putin publicly praised its ability "to hit targets at intercontinental depths with hypersonic speeds and high accuracy with the possibility of deep maneuvers in altitude and in course," suggesting that he may have sought to put foreign adversaries on alert regarding Russia's new capabilities.¹²⁸

Conclusions

¹²⁴ David Hoffman, "Putin Says 'Why Not?' to Russia Joining NATO," *Washington Post*, March 6, 2000, <https://www.washingtonpost.com/archive/politics/2000/03/06/putin-says-why-not-to-russia-joining-nato/c1973032-c10f-4bff-9174-8cae673790cd/>.

¹²⁵ ven Bruusgaard, "Russian nuclear strategy and conventional inferiority," p. 8.

¹²⁶ Scott Sagan, "The Commitment Trap: Why the United States Should Not Use Nuclear Threats to Deter Biological and Chemical Weapons Attacks," *International Security*, Vol. 24, No. 4 (2000), pp. 85-115, <https://www.jstor.org/stable/2539316?seq=3>.

¹²⁷ Johnson, "Russia's Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds."

¹²⁸ Putin, "Zayavlenie dlya pressy i otvety na voprosy vo vremya poseshcheniya kosmodroma Plesetsk."

This case study has examined the impact of the United States' withdrawal from the ABM treaty on Russia's acquisition, threat, and use of strategic weapons. It has attempted to distinguish between the actual influence of this event at the time it occurred and the significance which Russian elites—including President Vladimir Putin—have subsequently ascribed to it. It finds that Washington's exit from this Cold War accord did, in the immediate term, spur Russia to look to past projects and its existing arsenal for long-range maneuverable capabilities that could evade national missile defense. At the same time, however it finds that this event did little to increase the salience of Russia's strategic forces more generally, whose centrality to the triad had already been decisively reestablished prior to 2001, or to change the means or frequency with which Russia threatened to use strategic weapons.

Further, this case study also asserts that it was only in the mid-to-late 2000s, against the backdrop of overall deteriorating bilateral relations, that Moscow's leadership appears to have begun to view the U.S. withdrawal from ABM as an indication of broader its disregard for Russia's legitimate security concerns. Correspondingly, and aided by a more robust economy, Russia began to pursue wholly new capabilities like "next generation" MIRVed ICBMs in conjunction with a much larger effort to modernize its strategic forces. This case study finds no evidence to suggest that a fundamental change in Russia's perception of the security threat posed by U.S. national missile defense precipitated these developments. Instead, it concludes that Moscow's pursuit of these weapons was driven principally by a desire to force Washington to take it seriously against the backdrop of events such as the proposed deployment of missile defense in Europe—without leveling explicit military threats that could lead to a direct superpower confrontation.

CHAPTER TWO

Russia's Long-Range Missile Campaign in the Syrian Conflict

Hanna Notte

Introduction

Russia's military intervention in the Syrian conflict in September 2015 made Moscow a pivotal player in the war and, by extension, in the broader Middle East. In assisting the Syrian armed forces in pushing back the opposition and retaking the city of Aleppo in late 2016, and by subsequently forging a Syria-wide ceasefire together with Turkey, Russia made significant impacts on the ground and marginalized the United States' role in the conflict. Russia's decision to intervene in the conflict was predominantly driven by considerations related to state order, namely, preventing the overthrow of the government in Syria, which Moscow worried would not just repeat events that had unfolded in Libya in 2011 but might also risk domino effects in Russia's own post-Soviet neighborhood. But it was also driven by geopolitics: Moscow believed that by creating "facts on the ground" in Syria, the Barack Obama administration—with which relations had deteriorated considerably by 2015—would be forced to deal with Russia as an equal. As a bonus, the Kremlin hoped it would gain an opportunity to underscore Russia's claim to great power status to a domestic audience.¹

During the months leading up to Russia's intervention, the military situation in Syria had gradually shifted to the detriment of the government in Damascus. By spring 2015, Al-Qaida's affiliate in Syria, Jabhat al-Nusra, had assembled a coalition of fighters which drove back regime forces in northwest Syria, all while the Islamic State (ISIL) captured the historic city of Palmyra and was pushing westward. President Assad's forces were being squeezed and falling back on almost all fronts. After consulting with Iran that summer and deciding on a joint military intervention, Russia envisioned a campaign based on a small military footprint. The plan for a conservative approach was rooted both in resource constraints and political considerations. The Hmeimim Air Base in western Syria was not fit to accommodate a large contingent of Russian aircraft. But the lingering memory in Russia of "body bags" being sent home from the costly Soviet campaign in Afghanistan decades earlier also precluded Russian ground troops from being deployed to Syria in high numbers. Therefore, Russia's strategy was about Syrian forces and Iranian and Shia militias doing the fighting on the ground and Russian forces mostly providing support.²

¹ On the drivers of Russia's 2015 intervention in the Syrian war, see: Hanna Notte, "Russia's Role in the Syrian War," *Konrad Adenauer Foundation and Maison du Futur*, Policy Paper No. 8, January 2017, https://www.kas.de/documents/252038/253252/7_dokument_dok_pdf_47817_1.pdf/c5af4947-c194-335b-73e2-508c6732ff21?version=1.0&t=1539649627860. On the military situation in Syria leading up to Russia's intervention, see Michael Kofman and Matthew Rojansky, "What Kind of Victory for Russia in Syria?" *Military Review Online Exclusive*, January 2018, <https://www.armyupress.army.mil/Portals/7/Army-Press-Online-Journal/documents/Rojansky-v2.pdf>.

² Still, some Russian ground troops were deployed to Syria. Russian aerospace forces would be supported by around 3,000 ground troops, with perhaps 1,500 based at Hmeimim alone. Per Kofman and Rojansky, these would include Naval Infantry from the 810th brigade based in Crimea, elements from the 7th Airborne Assault Division, among others. Kofman and Rojansky, "What Kind of Victory for Russia in Syria?" Later, from 2018, Russia also deployed

Russia deployed a sizeable number of attack aircraft and helicopters in its operations, including Su-24M2 bombers, Su-25SM/UB attack aircraft, Su-34 bombers, Su-30SM heavy multirole fighters, and Mi-24P and Mi-35M attack helicopters. Russia's Black Sea Fleet supported the operations from the sea, providing logistical supplies via landing ship tanks in what became known as the "Syrian Express." Seeking to stall the momentum of opposition forces and breaking isolated Syrian bases out of encirclement, Russian aircrews flew sorties at a high rate in late 2015 and early 2016.

As part of its intervention in Syria, Russia engaged in a pattern break related to the acquisition, threat of use, and use of strategic weaponry. Specifically, it took the unexpected decision to employ long-range precision-guided missiles, using them in combat for the first time. Russia started with initial *Kalibr* land-attack cruise missile strikes from the Caspian Sea against ISIL targets on October 7, 2015, striking across a distance of 1,500 kilometers. The missiles briefly traversed Iranian and Iraqi airspace, and Russia claimed it previously received permission from both governments. Subsequently, Russian ships and submarines fired numerous *Kalibr* missiles from both the Caspian Sea and the Eastern Mediterranean. Starting in November 2015, Russia's long-range aviation—its Tu-95MS and Tu-160 strategic bombers—also flew a substantial number of sorties deploying *Kb-555* and *Kb-101* air-launched cruise missiles against enemy targets. While October 7, 2015, marked the initial pattern break, Russia's overall deviation from past practice is therefore best understood as cumulative, since it entailed a series of cruise missile strikes, predominantly in the period from 2015 to 2017. Speaking in front of the Duma's Defense Committee in March 2019, Defense Minister Sergey Shoigu reported that Russia had conducted a total of 166 sea and air-launched cruise missile strikes in Syria by that time.³

The long-range precision-guided missiles represented only a small portion of the mixture of weapons Russia used in Syria. Moreover, their employment came at a cost to Moscow, considering their high unit price tag. And as will be shown below, Russia did not need to employ them in order to achieve a strategic advantage on the Syrian battlefield, given the substantial air power it brought to bear with its attack aircraft. Why, then, did Russia engage in this pattern-breaking activity, using this specific type of weaponry in combat for the first time ever in a conflict that did not involve the United States and NATO forces and that was relatively far away from Russia's borders?

This case study proceeds as follows: It begins with an analysis of Russia's quest to close the "precision gap" with the United States from the early 2000s, reflected in efforts to speed up its acquisition of long-range precision-guided missiles. It then chronicles Russian and U.S. reactions to Russia's pattern-breaking employment of *Kalibr* cruise missiles and other long-range missiles in the Syrian campaign. It concludes with a comparison of the drivers and constraints shaping Russia's acquisition and use of long-range precision-guided weapons before and after their first combat employment in Syria. It finds that the most significant constraints related to both acquisition and use would not fully come to light until years after the pattern break, when Russia launched a full-scale invasion of Ukraine in 2022.

military police to Syria to control and safeguard areas recaptured by the Syrian government. Russia also fielded private military contractors (PMC), especially from the Wagner Group.

³ "Shoigu rasskazal deputatam o perevooruzhenii armii," *Rossiiskaya Gazeta*, March 12, 2019, <https://rg.ru/2019/03/12/shoigu-rasskazal-deputatam-o-perevooruzhenii-armii.html>. For details on the characteristics, capabilities, strike ranges, and carriers of the *Kalibr*, Kh-101, and Kh-555 missiles, see: "Missiles of Russia," CSIS Missile Defense Project, August 10, 2021, <https://missilethreat.csis.org/country/russia/>.

Establishing the Pattern

Years before Russia's pattern-breaking employment of long-range precision-guided missiles in Syria, Russia's military top brass had sounded the alarm about the country's need to develop this weaponry.

Long-range precision-guided conventional weapons had emerged by the end of the Cold War as a qualitatively new class of arms.⁴ Mutual deterrence between NATO and the Warsaw Pact countries during the Cold War had relied largely on two classes of weaponry: nuclear weapons and traditional conventional weapons, such as tanks, aircraft, mechanized infantry, etc. As described in the previous chapter, however, the United States' display of conventional precision strike prowess in the 1990s, using long-range missiles in the First Gulf War in 1991 and then in Kosovo in 1999, posed a formidable challenge to Russian military planners and strategists. They worried that the United States could use such weapons at an early stage of a "regional" conflict.⁵ Some Russian analysis actually overestimated U.S. capabilities in the campaign against the former Yugoslavia in the late 1990s by a significant margin, assuming that far more missiles were launched than was actually the case.⁶ Be that as it may, the notion of regional conflict was introduced in Russia's military doctrine of 2000 and referred to a situation in which Russia would face a coalition of states pursuing "military-political" goals.⁷

Russian apprehensions about the U.S.' ability to wage a limited conventional conflict successfully with Russia without having to resort to nuclear weapons then shaped a 2003 document entitled "Aktualnye Zadachi Razvitiya Vooruzhennykh Sil Rossiiskoy Federatsii" [Immediate Task for the Development of the Armed Forces of the Russian Federation]. The document stressed "the utmost necessity of having the capability to strike military assets of the enemy outside the immediate area of conflict." "To achieve this," it stipulated, "[we] need both our own long-range high-precision strike capability and other assets that enable [us] to transfer hostilities directly to enemy territory."⁸ As Kristin ven Bruusgaard has noted in her work on Russia's predicament at the time, "Russia, the largest nuclear weapons state in the world, perceives U.S. conventional capabilities as a potential security threat that could jeopardize its very existence."⁹ While the 2003 document mandated substantial efforts in Russia's development of long-range precision-guided weapons, it also made it clear that Moscow would continue to rely on nuclear weapons for "regional" contingencies until such time when adequate conventional forces had been acquired or modernized.

⁴ Nikolai Sokov, "The Russian Nonstrategic Nuclear Posture: History, Missions, and Prospects," in Miles A. Pomper, William Alberque, Marshall L. Brown, et. al., *Everything Counts: Building a Control Regime for Nonstrategic Nuclear Warheads in Europe* (occasional paper, James Martin Center for Nonproliferation Studies, 2022), <https://nonproliferation.org/op55-everything-counts-building-a-control-regime-for-nonstrategic-nuclear-warheads-in-europe/>.

⁵ Ibid.

⁶ Clint Reach, Alyssa Demus, Michelle Grisé, et al., *Russia's Evolution Toward a Unified Strategic Operation* (Santa Monica, California: RAND, 2023), https://www.rand.org/pubs/research_reports/RRA1233-8.html.

⁷ Michael Kofman, Anya Fink, and Jeffrey Edmonds, *Russian Strategy for Escalation Management: Evolution of Key Concepts* (Arlington, VA: Center for Naval Analysis, April 2020).

⁸ Cited in Sokov, "The Russian Nonstrategic Nuclear Posture: History, Missions, and Prospects."

⁹ Kristin Ven Bruusgaard, "Russian nuclear strategy and conventional inferiority," *Journal of Strategic Studies*, Vol. 44, Issue 1 (2021), p. 3.

Fast forward a decade to the years immediately preceding Russia's pattern-breaking employment of long-range missiles in Syria in 2015. By that time, statements by Russian officials related to the acquisition and potential use of such weaponry reflected a number of concerns: that Russia was still behind in the arms race and needed to do better; that catching up was paramount given a perceived need to possess a capability owned the United States; and that such weapons were needed in response to threats posed by U.S. missile defenses and U.S. efforts to develop "prompt global strike" capabilities.

In June 2012, Russian Deputy Prime Minister Dmitry Rogozin warned that Russia was at risk of "sleeping through a new revolution," a sign of which was the emergence of high-precision weapons capable of replacing weapons of mass destruction. "A direct hit on a power plant, a dam or a chemical plant can lead to consequences similar to the use of weapons of mass destruction," Rogozin said, adding that if such a strike were inflicted on Russia, then its strategic nuclear deterrence forces would be the main targets.¹⁰ Russian President Vladimir Putin himself acknowledged the growing sophistication and strategic significance of long-range missiles in 2013, characterizing them as "no longer inferior to strategic weapons."¹¹ In the same year, an expert report commissioned by Russia's Federation Council, the upper chamber of its parliament, concluded that "high-precision weapons are at the heart of the modern military strategy and warfare" and that "modern conflict is fought and won with this type of weapon."¹²

Russian experts and policymakers at the time considered their country's efforts to acquire such weapons to be inadequate in light of the challenges it was facing. The 2013 expert report, cited above, bemoaned a lack of industrial production of high-precision weapons, notwithstanding the availability of highly sophisticated prototypes. It attributed this deficit to a post-Soviet loss of connection between the laboratories carrying out fundamental research and industry. Laying out his vision for Russia's new armaments program in the same year, Minister Rogozin therefore doubled down on the importance of acquiring high-precision weapons (and robotics).¹³ In July 2013, Defense Minister Shoigu promised that, "in the next three years, the number of cruise missiles [in the Russian air force] will increase fivefold, by the end of the current decade by 30 times."¹⁴ Six months later, he reiterated his plea for "the priority development of high-precision weapons within the framework of the state armament program."¹⁵

Russian efforts to acquire this type of strategic weaponry were not just a matter of developing the missiles themselves but also of modernizing their respective carriers and delivery platforms,

¹⁰ "Razgonka vooruzhenii," *Kommersant*, December 12, 2012, <https://www.kommersant.ru/doc/2365917>. Similar threat perceptions were also echoed here: "Rossiya sozdat analogi amerikanskikh sistem PRO," *Rossiiskaya Gazeta*, December 8, 2014, <https://rg.ru/2014/12/08/rakety-site.html>.

¹¹ "Putin: Vysokotochnoe oruzhie uzhe ne ustupaet po vozmozhnostyam strategicheskomu," *Vzglyad*, July 5, 2013, <https://vz.ru/news/2013/7/5/640137.html>; "Putin: Vysokotochnoe oruzhie stanovitsya vse bolee vazhnym faktorom neyadernogo sderzhivaniya," *Vzglyad*, November 29, 2013, <https://vz.ru/news/2013/11/29/661991.html>.

¹² "Sostoyanie zakonodatel'nogo obespecheniya razrabotki, ispytaniy i seriynogo proizvodstva vysokotochnogo oruzhiya na predpriyatiyakh rossiiskogo oboronopromyshlennogo kompleksa," 2013, <http://council.gov.ru/media/files/41d46c1ff354d063bebd.pdf>.

¹³ "Perenosit' zadaniya gosoboronzakaza iz-za Minfina my ne mozhem," *Kommersant*, August 22, 2013, <https://www.kommersant.ru/doc/2260783>.

¹⁴ "Rossiiskie voennye khotyat bol'she krylatykh raket - Defense Update," *militaryparitet.com*, July 8, 2013, https://vpk.name/news/92717_rossiiskie_voennye_hotyat_bolshe_krylatyh_raket-defense_update.html.

¹⁵ "Shoigu poruchil Genshtabu uchest' ugrozu 'mgnovennogo global'nogo udara,'" *Vzglyad*, December 16, 2013, <https://vz.ru/news/2013/12/16/664535.html>.

including submarines, ships and heavy bombers. A 2014 article in the Russian newspaper *Vzglyad* detailed modernization plans for Tu-160 and Tu-95 heavy bombers, reporting that they would receive new control and navigation systems.¹⁶ Around the same time, the Russian navy promised to do its part, announcing that by the end of the decade, high-precision long-range and hypersonic cruise missiles would constitute its backbone, and that the number of carriers of long-range precision weapons would be increased fourfold by 2021.¹⁷ Interestingly, the Russian navy—in a departure from U.S. practice—emphasized smaller classes of ships and multiple types of submarines as platforms.

The specific operational needs Russia intended to meet with a long-range conventional capability can be categorized as follows: (1) to be able to wage a conventional war with NATO, and a limited conflict with other parties (as detailed above); (2) to strike aircraft carriers and land targets from sea (a particular interest of the Russian navy); and (3) to penetrate missile defenses, including theater missile defenses (this became the main driver for hypersonic missiles).

In line with these categories, there was an active discussion among Russian military experts in the period preceding the pattern break on specific missions for such weapons. For instance, Alexander Konovalov, President of the Institute for Strategic Assessments, suggested that the *Kb-101* air-launched cruise missile would allow long-range aviation to deliver high-precision strikes both against terrorist bases and strategic targets in the enemy’s “backyard” without risking the lives of pilots. He argued that, “[d]ue to the lack of Russian military bases abroad, Russian fighters will not be able to cover bombers during transcontinental flights. Therefore, it is very important that the Tu-95 and Tu-160 be able to launch missiles without entering the enemy air defense zone.”¹⁸ In a piece published in *Vzglyad* in 2015, military experts also debated suitable deployment options for the Tu-22M3 heavy bombers carrying air-launched cruise missiles. While some saw their deployment in Crimea as an “adequate response” to the construction of a U.S. anti-missile base in Romania, others recalled that the missiles’ main potential targets were ships in the Black and Mediterranean Seas.¹⁹

Regarding suitable missions for the *Kalibr* cruise missile deployed on submarines like the *Severodvinsk* (a Yasen class nuclear-powered cruise missile submarine), another article in *Vzglyad* mused that this “high-precision ultra-high-speed weapon (is) designed primarily to combat aircraft carriers.”²⁰ In 2013 and 2014, Russian media also reported on efforts to modernize the Russian Black Sea Fleet and the Caspian flotilla. A separate piece in *Vzglyad* reported that the Black Sea Fleet, having “restored its permanent presence in the Mediterranean Sea,” would take into service several new frigates equipped with *Kalibr* missiles.²¹ Around the same time, the Caspian flotilla received a new small

¹⁶ “Priblizhenie k paritetu,” *Vzglyad*, October 3, 2014, <https://vz.ru/society/2014/10/3/708797.html>.

¹⁷ “Nachal’nik rossiiskogo Genshtaba - ob osnovnykh zadachah razvitiya armii,” *Nezavisimoe Voennoe Obozreniye* September 12, 2014, https://nvo.ng.ru/concepts/2014-09-12/1_oborona.html.

¹⁸ Aleksey Mikhailov, “VVS Rossii poluchit krylatuyu raketu KH-101 v 2013 godu,” *Izvestia*, September 21, 2012, <https://iz.ru/news/535063>.

¹⁹ Roman Kretsul, “Krymskuyu voennuyu gruppirovku usilyat raketonostsy,” *Vzglyad*, July 22, 2015, <https://vz.ru/society/2015/7/22/757425.html>.

²⁰ “Istochnik: APL Severodvinsk vyidet v more na ispytaniya v noyabre,” *Vzglyad*, September 4, 2012, <https://vz.ru/news/2012/9/4/596567.html>.

²¹ “Chernomorskoe obnovlenie,” *Vzglyad*, April 23, 2013, <https://vz.ru/society/2013/4/29/630771.html>.

missile ship (RTO), *Velikiy Ustyug*, which was multi-purpose and armed with *Kalibr-NK* universal long-range missiles designed to destroy sea and coastal targets.²²

According to Russian defense planners, U.S. ambitions to develop a “prompt global strike” capacity made stepping up efforts to stand firm in the long-range precision-guided race more urgent. Conventional Prompt Global Strike (CPGS) refers to an initiative to develop long-range non-nuclear weapons that could hit distant targets in a short period of time.²³ Russia had sounded the alarm about U.S. efforts in this area for years. In 2007, Anatoly Antonov, who was then director of the Security and Disarmament Department at the Russian Ministry of Foreign Affairs, stated that prompt global strike, “when combined with global missile defense, becomes a means of seeking to dominate the world politically and strategically.”²⁴ Russian concerns that CPGS could undermine its strategic nuclear deterrent were also reflected in Putin’s own statements. In June 2013, he lamented the fact that “work is active around the world on developing high-precision conventional weapons systems that in their strike capabilities come close to strategic nuclear weapons.”²⁵ Later that year, Defense Minister Shoigu instructed the General Staff of Russia’s armed forces to accord priority to the development of high-precision weapons within the framework of the state armament program, referring expressly to the U.S. “prompt global strike” program as necessitating such efforts.²⁶

Russia’s acquisition drive was also prompted by the evolving U.S. missile defense posture. Speaking at the Munich Security Conference in early 2014, just weeks before Russia would illegally annex Crimea, Foreign Minister Sergei Lavrov delivered a long diatribe against U.S. missile defense-related efforts, suggesting that “military men understand well that the (anti-ballistic missile) is part of the strategic arsenal of the United States... When we add a ‘nuclear-missile shield’ to the ‘nuclear sword’, the temptation to use these attack and defense opportunities becomes rather high, depending on which leaders may come to power in the country having such opportunities.”²⁷ Throughout 2014 and 2015, Russian officials would regularly bemoan U.S. plans to deploy missile defenses in Poland and Romania, charging that the launchers would be capable of fielding Tomahawk medium-range cruise missiles in violation of the Intermediate-range Nuclear Forces (INF) Treaty.²⁸ Russia’s own acquisition of high-precision weapons was tied directly to the looming threat of U.S. missile defenses: “From the point of view of a global conflict, ...we have enough forces and means to overcome missile defense, especially high-precision weapons, cruise missiles, both sea and land-based, which perfectly bypass even new advanced systems,” Franz Klintsevich, a parliamentarian for

²² “MRK ‘Velikii Ustyug’ prinyali v sostav Kaspiiskoi flotilii,” *Vzglyad*, December 19, 2014, <https://vz.ru/news/2014/12/19/721264.html>.

²³ James M. Acton, “Conventional Prompt Global Strike and Russia’s Nuclear Forces,” Carnegie Endowment for International Peace, October 4, 2013, <https://carnegieendowment.org/2013/10/04/conventional-prompt-global-strike-and-russia-s-nuclear-forces-pub-53213>.

²⁴ Ibid.

²⁵ Ibid.

²⁶ “Shoigu poruchil Genshtabu uchest’ ugrozu ‘mgnovennogo global’nogo udara’”.

²⁷ “Speech by the Russian Foreign Minister, Sergey Lavrov, at the 50th Munich Security Conference, Munich, 1 February 2014,” https://mid.ru/ru/foreign_policy/news/1629454/. Grievances about U.S. missile defense assets in Poland and Romania were echoed here: “Kuda khotim, tuda i stavim,” *Vzglyad*, October 21, 2014, <https://vz.ru/society/2014/10/21/711642.html>.

²⁸ Russian Ministry of Foreign Affairs, “Comment by the Information and Press Department on the US State Department’s Report on Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments,” June 11, 2015, https://mid.ru/ru/foreign_policy/news/1510175/.

the United Russia party and member of the Duma defense committee, told media in late 2014.²⁹ Colonel General Ivashov echoed that sentiment in early 2015, advising that, in light of the United States' global ABM system, "Russia should not get carried away with creating only ballistic missiles with nuclear warheads, but should rather speed up the creation of high-precision weapons and, above all, long-range cruise missiles."³⁰

Reactions to the Pattern Break

U.S. Reactions

Reactions among U.S. officials and the media to the use of *Kalibr* missiles in Syria confirm that Russian actions registered as a pattern break with foreign audiences. Coverage of the initial strikes in U.S. media reflected some surprise and a sense of awe. A headline from *The Daily Beast* on October 9, 2015 read, "Russia's New Mega-Missile Stuns the Globe,"³¹ while a piece in *The National Interest* conceded that "the fact that the missiles were launched from relatively diminutive corvettes ... caught some by surprise."³² Though there was also some mocking in media coverage, given reports that some of the Russian missiles launched had failed to hit their Syrian targets and had crashed in Iran, an opinion piece in *Bloomberg* criticized the "fair amount of chuckling in the West." The author warned that:

This is no laughing matter. Arguing over the attack's effectiveness misses the point. If Moscow had only wanted to hit Bashar al-Assad's enemies in Syria, it has plenty of ships nearby in the Mediterranean to do the job. Rather, the Russians launched the 26 missiles from the Caspian simply to show they were capable of doing so. The U.S. and its allies should be warned: Vladimir Putin notched another success.³³

Military analyst Michael Kofman echoed this sentiment in an article published in *War on the Rocks* entitled, "Why the U.S. Should Be Paying Attention to Russia's Latest Strikes in Syria."³⁴

The Obama administration, in its initial reactions to the pattern break, focused not so much on the fact that Russia had fired the cruise missiles *per se* but rather on how it had gone about the strikes. In various briefings, senior defense officials bemoaned the lack of warning by Russia, notwithstanding existing deconfliction arrangements with Moscow. They characterized Russian behavior as

²⁹ Tatyana Zamakhina, "Rossiiskie rakety pri neobkhodimosti smogut preodolet PRO SShA," *Rossiiskaya Gazeta*, November 7, 2014, <https://rg.ru/2014/11/07/raketi-site-anons.html>.

³⁰ Roman Kretsul, "Rossii est' chem otvetit' na razmeshhenie elementov PRO na Alyaske," *Vzglyad*, May 23, 2015, <https://vz.ru/society/2015/5/23/746930.html>.

³¹ "Russia's New Mega-Missile Stuns the Globe," *The Daily Beast*, October 9, 2015, <https://www.thedailybeast.com/russias-new-mega-missile-stuns-the-globe>.

³² Dave Majumdar, "Cruise Missile Strikes in Syria: Russia's Big Ad Campaign?," *The National Interest*, October 8, 2015, <https://nationalinterest.org/blog/the-buzz/cruise-missile-strikes-syria-russias-big-ad-campaign-14032>.

³³ Tobin Harshaw, "Putin's Navy Sends a Shot Across Obama's Bow - Russia can fire big missiles from small ships. Can the U.S.?" *Bloomberg*, October 16, 2015, <https://www.bloomberg.com/opinion/articles/2015-10-16/russian-cruise-missiles-in-caspian-send-a-message-to-u-s->.

³⁴ Mike Kofman, "Why the U.S. Should Be Paying Attention to Russia's Latest Strikes in Syria," *War on the Rocks*, November 19, 2015, <https://warontherocks.com/2015/11/why-the-u-s-should-be-paying-attention-to-russias-latest-strikes-in-syria/>.

“unprofessional”³⁵ and “reckless.”³⁶ In one such briefing, Defense Secretary Ashton Carter lamented that the Russians had “shot cruise missiles from a ship in the Caspian Sea without warning. They’ve come within just a few miles of one of our unmanned aerial vehicles.”³⁷ It should be noted that Russia, in subsequent missile strikes in Syria, changed gears and decided to provide prior notification to the United States.³⁸ This suggests that, for the initial pattern break, achieving a surprise effect vis-à-vis Washington was regarded as highly desirable in Moscow.

While U.S. officials were otherwise guarded in their public statements about Russian missile strikes, especially on whether such strikes had hit or missed their targets in Syria,³⁹ they did eventually come to emphasize that “only a fraction of these strikes have been against ISIL or in ISIL-dominated areas.”⁴⁰ Secretary Carter also suggested in one public statement that he viewed the strikes as indicative of a Russian desire to “close the technology gap” with the United States.⁴¹ Otherwise, U.S. official reactions to the strikes predominantly focused on the elevated importance of ensuring deconfliction with Russia over Syria’s skies.⁴²

Russian Reactions

When it comes to the reaction to this pattern break among the Russian expert community, military analysts, and media outlets, four themes stand out. As described in detail below, these were: (1) historic importance; (2) comparisons of the Russian *Kalibr* to the U.S. Tomahawk missile, which

³⁵ U.S. Department of Defense, “Remarks by Secretary Carter at the Association of the U.S. Army Sustaining Member Luncheon, Washington, D.C.,” October 14, 2015, <https://www.defense.gov/News/Transcripts/Transcript/Article/623130/remarks-by-secretary-carter-at-the-association-of-the-us-army-sustaining-member/>.

³⁶ U.S. Department of Defense, “Press Briefing by Col. Warren via Teleconference in the Pentagon Briefing Room, Operation Inherent Resolve Spokesperson Colonel Steve Warren,” October 13, 2015, <https://www.defense.gov/News/Transcripts/Transcript/Article/622954/department-of-defense-press-briefing-by-col-warren-via-teleconference-in-the-pe/>.

³⁷ U.S. Department of Defense, “Press Conference by Secretary Carter at NATO Headquarters, Brussels, Belgium,” October 8, 2015, <https://www.defense.gov/News/Transcripts/Transcript/Article/622454/press-conference-by-secretary-carter-at-nato-headquarters-brussels-belgium/>.

³⁸ U.S. Department of Defense, “Press Briefing by Pentagon Press Secretary Peter Cook in the Pentagon Briefing Room,” December 8, 2015, <https://www.defense.gov/News/Transcripts/Transcript/Article/633414/department-of-defense-press-briefing-by-pentagon-press-secretary-peter-cook-in/>.

³⁹ U.S. Department of Defense, “Joint Press Conference by Secretary Carter and Secretary of State for Defense Fallon in London, England,” October 9, 2015, <https://www.defense.gov/News/Transcripts/Transcript/Article/622669/joint-press-conference-by-secretary-carter-and-secretary-of-state-for-defense-f/>.

⁴⁰ U.S. Department of Defense, “Press Briefing by Col. Warren via Teleconference in the Pentagon Briefing Room, Operation Inherent Resolve Spokesperson Colonel Steve Warren,” October 13, 2015, <https://www.defense.gov/News/Transcripts/Transcript/Article/622954/department-of-defense-press-briefing-by-col-warren-via-teleconference-in-the-pe/>.

⁴¹ U.S. Department of Defense, “Remarks by Secretary Carter at the Association of the U.S. Army Sustaining Member Luncheon, Washington, D.C.,” October 14, 2015, <https://www.defense.gov/News/Transcripts/Transcript/Article/623130/remarks-by-secretary-carter-at-the-association-of-the-us-army-sustaining-member/>.

⁴² U.S. Department of Defense, “Press Briefing by Col. Warren via DVIDS from Baghdad, Iraq,” November 18, 2015, <https://www.defense.gov/News/Transcripts/Transcript/Article/630393/department-of-defense-press-briefing-by-col-warren-via-dvids-from-baghdad-iraq/>; U.S. Department of Defense, “Press Briefing by Pentagon Press Secretary Peter Cook in the Pentagon Briefing Room,” November 24, 2015, <https://www.defense.gov/News/Transcripts/Transcript/Article/631232/department-of-defense-press-briefing-by-pentagon-press-secretary-peter-cook-in/>.

underscored perceived Russian gains in prestige; (3) analysis of the inadequate mission fit of those missiles for the operation in Syria; and (4) reflections on Russia's "real" motivations for using cruise missiles in Syria, including the desire to send a "political" message to the West, ambitions to project power, and a desire to test weapons in real combat.

Historic importance: A sense of historic importance and awe permeated initial Russian reactions to the October 2015 cruise missile strikes. For instance, the newspaper *Rossiiskaya Gazeta* referred to them as the "Caspian Sword," praising the "phenomenal result" they achieved, notwithstanding the arduous flight path of the missiles: "The missiles had to overcome mountainous and hilly areas, in some places overgrown with forest. The missiles made 147 maneuvers on their way to the attack targets."⁴³ There was also an element of surprise: Reflecting upon Russia's reliance on heavy bombers to deliver high-precision weapons, Russian military expert Anton Lavrov would later write that "the extremely active use of long-range Tu-22M3 bombers was quite a surprise."⁴⁴ At the same time, some Russian analysts mocked the surprise and shock in the Western analyst community over the *Kalibr* strikes, with one teasing: "Yes, this type of weapon exists (in Russia)."⁴⁵

"Russia's Tomahawk": Several analysts explicitly compared the Russian *Kalibr* missile to the U.S. Tomahawk missile—an intermediate-range, subsonic cruise missile that is launched from U.S. Navy ships and submarines, provides a long-range, deep strike capability, and is considered especially powerful. Russian military analyst Konstantin Bogdanov was full of praise, calling the strikes a "truly historical event: the first combat use of *Kalibr*, the baptism by fire of our Tomahawk, so to speak."⁴⁶ Comparisons of this nature also appeared in articles in outlets such as *Vedomosti*, *Lenta*, and *Vzglyad*,⁴⁷ and *BBC Russian* picked up on the analogy, too, writing that Russia showed that it has a long-range non-nuclear deterrent equivalent to that of the Americans.⁴⁸ In these various articles, some Russian military sources cited even characterized the Russian missile as superior to the Tomahawk with regard to certain characteristics.

"Overkill": In commenting on the cruise missile strikes, Russian officials contended that the use of such weapons was entirely suitable for the purpose of fighting terrorism in Syria. In an interview with *Ria Novosti*, for instance, Admiral Vladimir Valuev—who commanded the Baltic fleet between 2001 and 2006—praised the high-precision weaponry as effective for combatting international terrorists. When asked about the high cost per unit of such missiles, he retorted that, "in any case, achieving victory over international terrorism and strengthening Russia's military security justifies the cost of using expensive weapons."⁴⁹ Some Russian military experts, however, begged to differ.

⁴³ "Kaspiiskii mech: stali izvestny podrobnosti primeneniya 'Kalibrov' v Sirii," *Rossiiskaya Gazeta*, June 15, 2020, <https://rg.ru/2020/06/15/reg-ufo/kaspiiskij-mech-stali-izvestny-podrobnosti-primeneniia-kalibrov-v-sirii.html>.

⁴⁴ Anton Lavrov, "The Russian Air Campaign in Syria: A Preliminary Analysis," Center for Naval Analyses, June 2018, https://www.cna.org/archive/CNA_Files/pdf/cop-2018-u-017903-final.pdf.

⁴⁵ Konstantin Bogdanov, "Sirii: pervye itogi shto pokazali voennye v pervom akte siriiskoi kampanii," *Lenta.ru*, March 27, 2016, <https://lenta.ru/articles/2016/03/27/syria/>.

⁴⁶ Konstantin Bogdanov, "Glavnyi kalibr Rossiiskie 'Tomagavki' nad Blizhnim Vostokom," *Lenta.ru*, October 7, 2015, <https://lenta.ru/articles/2015/10/07/caliber/>.

⁴⁷ "Ispol'zovav v Sirii krylatye rakety, Rossiya pokazala svoi novye vozmozhnosti," *Vedomosti*, October 8, 2015, <https://www.vedomosti.ru/politics/articles/2015/10/08/611947-krilatye-rakety-rossiya>; "Glavnyi kalibr Rossiiskie 'Tomagavki' nad Blizhnim Vostokom"; "Operatsiya v Sirii pozvolyaet proverit' noveishie rakety v real'nykh usloviyakh," *Vzglyad*, July 6, 2017, <https://vz.ru/politics/2017/7/6/877596.html>.

⁴⁸ "Kaspiiskim Kalibrom po Sirii: zachem eto bylo nado?," *BBC Russian*, October 8, 2015.

⁴⁹ "Ekspert rasskazal, pochemu primeneniye 'Kalibrov' v Sirii opravdano," *Ria*, September 22, 2017, <https://ria.ru/20170922/1505382827.html>.

Reflecting on Russia's military operation in Syria years later, for example, Anton Lavrov argued that flight sorties (such as those by Su-24 attack aircraft) were "more consequential from an operational standpoint" than cruise missile attacks conducted from long-range.⁵⁰ He concluded that "even a strike with 26 ship-based cruise missiles on October 7, 2015 did not produce any noticeable military effect." Konstantin Bogdanov agreed that "the use of cruise missiles in Syria can hardly be considered a key episode of the campaign."⁵¹ This perception of "overkill"—i.e., that Russia did not need to resort to long-range weapons and could just have used its attack aircraft deployed at Hmeymim to carry out strikes—was also shared among several Western military analysts.⁵² Indeed, Russia's Defense Ministry stated that over the first month of the bombing campaign in Syria, the air group had performed 1,391 combat sorties engaging 1,623 targets, giving a sense for just how active Russia's air campaign with attack aircraft was.⁵³

What is really going on? In light of the perception of overkill highlighted above, some within the Russian expert community suspected that Moscow's use of *Kalibr* missiles in Syria was driven by ulterior motives. Indeed, discussions in Russia of the "real" purpose behind the pattern-breaking strikes focused on the government's purported political motivations for launching them and the benefits of testing such systems in combat. Regarding the former, analysts highlighted that the resort to *Kalibr* strikes demonstrated Russia's "potential capabilities,"⁵⁴ was "quite effective" as a "political message,"⁵⁵ shook "the long-established image in the West of Russian military aviation as strong in numbers, but technically backward and incapable of hitting targets accurately and with minimal collateral damage,"⁵⁶ and allowed Russia to demonstrate "the new look" of the armed forces after the military reforms of the 2000s and 2010s.⁵⁷

Russian observers also argued that the employment of long-range precision weaponry in Syria was really meant to emphasize Russia's ability to project power over long distances and into theatres far beyond its borders. With the strikes, Russia effectively demonstrated that it no longer needed to be present in the Middle East region in order to exert military leverage there. In its coverage of the strikes, for instance, *BBC Russian* noted that almost the entire Arabian peninsula was within the range of the *Kalibr* and that the missiles were launched from the Caspian Sea since, from there, one can strike targets with cruise missiles not only in the Middle East, but also in Central Asia.⁵⁸ An article in *Vzglyad* similarly commented in 2017 that such weapons can be used not only in Syria and against ISIL and certainly were not developed for that purpose, observing that:

... Airfields, bunkers, command centers, military bases, launchers, oil storage facilities, infrastructure facilities worth tens of millions and billions of dollars located deep behind enemy lines can be destroyed by a single missile costing several million rubles (or a salvo of

⁵⁰ Anton Lavrov, "Russian Aerial Operations in the Syrian War," *FPRI*, 2020, <https://www.fpri.org/wp-content/uploads/2020/09/russias-war-in-syria.pdf>.

⁵¹ Konstantin Bogdanov, "Siriya: pervye itogi shto pokazali voennye v pervom akte siriiskoi kampanii."

⁵² Robert Lee, "Voennye aspekty rossiiskoi operatsii v Sirii," *Nezavisimoe Voennoe Obozrenie*, January 15, 2016, https://nvo.ng.ru/wars/2016-01-15/8_aspects.html.

⁵³ Lavrov, "Russian Aerial Operations in the Syrian War."

⁵⁴ "Kaspiiskim Kalibrom po Sirii: zachem eto bylo nado?"

⁵⁵ Lavrov, "Russian Aerial Operations in the Syrian War."

⁵⁶ Anton Lavrov, "Umnaya, sputnikovaya, vysokotochnaya," *Izvestiya*, July 5, 2018, <https://iz.ru/762685/anton-lavrov/umnaia-sputnikovaia-vysokotochnaia>.

⁵⁷ Bogdanov, "Glavnyi kalibr Rossiiskie 'Tomagavki' nad Blizhnim Vostokom."

⁵⁸ "Kaspiiskim Kalibrom po Sirii: zachem eto bylo nado?"

such missiles). And all this – in just a few hours, with a lightning strike, and even with the possibility of using a special warhead (nuclear warhead).⁵⁹

Given this perceived intent to project power and display Russian capabilities for other military contingencies, it is unsurprising that many Russian analysts viewed the employment of long-range missiles in Syria essentially as a testing exercise. Since missiles were fired in modest numbers, Anton Lavrov argued, their use in Syria should be considered “rather experimental”: “The Russian Aerospace Forces tested their new weapons in real combat, identified and eliminated their shortcomings, and analyzed the results,” he wrote in 2018.⁶⁰ He later contended that, in total, Russia tested 359 types of weapons in Syria for the first time and that performance results influenced subsequent acquisition and procurement decisions across classes of weapons.⁶¹

Though Western analysts were not altogether dismissive of the operational utility of Russia’s cruise missile strikes,⁶² they echoed many of the points raised by Bogdanov and Anton Lavrov in their own evaluations of Russia’s pattern break. Michael Kofman, for instance, drew attention to the poor mission fit of the cruise missiles, Russia’s desire to pull a publicity stunt, and its efforts to project power and demonstrate parity with the United States, calling the *Kalibr* strikes “a show—albeit an effective one.”⁶³ Elsewhere he described Russia’s missile strikes in Syria as “a combination of official retribution, publicity, and capability testing.”⁶⁴ While the missiles offered Russia “little in operational utility relative to the cost of the weapons used and their limited availability,” their use—according to Kofman—afforded Russia opportunities to refine its thinking on escalation management and deterrence through limited use of force. Ultimately, they would “remind a watchful audience that capabilities employed in Syria could be used against their homelands: Simply put, Western nations did not have a monopoly on calibrated use of force, and Russia, too, could deploy standoff precision-guided weapons...”⁶⁵

As these analyses suggest, Russia’s pattern break was of limited operational utility, but it enhanced Russia’s coercive credibility writ large. According to Kofman and Rojansky, the result was “a clear picture about the resurgent capability and capacity of its armed forces to impose costs on NATO in a conventional conflict and its ability to reach out at long ranges to hold much of Europe at risk, if need be.”⁶⁶ Indeed, Russia’s strategy in Syria, per a U.S. Naval Institute assessment, was indicative of a “Kalibrization” of the Russian fleet: Russian cruise missile strikes in Syria “...provided a glimpse into an emerging RFN (Russian Federation Navy) strategic philosophy. Russia’s official naval

⁵⁹ “Operatsiya v Sirii pozvolyaet proverit’ noveishie rakety v real’nykh usloviyakh.”

⁶⁰ Lavrov, “The Russian Air Campaign in Syria: A Preliminary Analysis.”

⁶¹ “Operatsiya v Sirii pozvolyaet proverit’ noveishie rakety v real’nykh usloviyakh,” Ivan Safronov, “Krylatye rakety proshli proverku v Sirii,” *Kommersant*, November 18, 2016, <https://www.aex.ru/fdocs/1/2016/11/18/27805/>.

⁶² Analysts from RAND Corp, in their assessment of the Russian air campaign in Syria from 2015-2018, note: in 2017, “long-range strike operations, from both Russian bombers stationed at Mozdok and sea-launched cruise missiles fired from Russian destroyers in the eastern Mediterranean, also contributed to the SAA’s eventual victory at Deir al-Zour.” Michael Simpson, Adam R. Grissom, Christopher A. Mouton, et al., *Road to Damascus: The Russian Air Campaign in Syria, 2015-2018* (Santa Monica, CA: RAND, 2020), https://www.rand.org/content/dam/rand/pubs/research_reports/RRA1100/RRA1170-1/RAND_RRA1170-1.pdf, p. 39.

⁶³ “Kaspiiskim Kalibrom po Sirii: zachem eto bylo nado?”

⁶⁴ Kofman, “Why the U.S. Should Be Paying Attention to Russia’s Latest Strikes in Syria.”

⁶⁵ Michael Kofman, “Syria and the Russian Armed Forces,” *FPRI*, September 2020, <https://www.fpri.org/wp-content/uploads/2020/09/syria-and-the-russian-armed-forces-kofman.pdf>.

⁶⁶ Kofman and Rojansky, “What Kind of Victory for Russia in Syria?”

doctrine ... states that one of the navy's roles is to 'attack the critically important ground-based facilities of the adversary, without violating, until a certain moment, its national sovereignty.'...The Kalibrization of the RFN has made this mission possible."⁶⁷

Analysis

Russia's Acquisition, Threat, and Use of Long-Range Precision-Guided Missiles Pre-Pattern Break

Drivers: In the period *prior* to its military operation in Syria, Moscow's acquisition of long-range precision weapons was informed primarily by two factors: The first and most significant of these was persistent Russian insecurity resulting from its inferior conventional long-range capabilities vis-à-vis NATO, which drove it to seek to acquire and refine such weapons and modernize carrier platforms. U.S. ambitions to develop "prompt global strike" weapons further exacerbated Russian threat perceptions. Russia wanted to be able to balance against U.S. long-range precision-guided weapons and obtain the ability to carry out attacks at a distance with the goal of establishing "non-nuclear deterrence," as called for in the 2014 Military Doctrine. In addition, Russia also hoped to be able to deliver asymmetric responses in theater-range warfighting, viewing long-range precision-guided missiles as useful offensive weapons capable of penetrating American theater-missile-defense deployments.

While perceptions of the external security environment principally drove Russian acquisition of long-range precision-guided missiles, institutional interests might have played a role, too. Indeed, the Russian air force and navy were both interested in obtaining funds to modernize carrier platforms for various missile types and probably exerted relevant lobbying efforts in this case. Dating back to Soviet times, there has been tight link between the services (such as the air force or the navy) and specific parts of the military-industrial complex. Elsewhere, two of the authors of this study have noted that *Kinzhal* and *Tsirkon*—close peers of the *Kalibr* and *Kb-101/102* missiles, which were not yet deployed at the time of the Syrian operation—were developed in parallel, raising intriguing questions about the decision-making processes behind Russian weapons innovation.⁶⁸ In that instance, it appeared that the air force and the navy sought to pursue different systems optimized for their missions instead of making a joint effort to create a multipurpose system. This was likely driven by financial and institutional interests.

It is plausible that similar dynamics were at play in the acquisition drive prior to the pattern break in question. The *Kb-101* was developed by the *Raduga* design bureau, which has considerable experience in designing air-launched missiles for the Russian air force, while *OKB Novator* was behind the *Kalibr*, a mainstay in the Russian navy's ground-strike capabilities. In 2013 and 2014, the Russian navy was undergoing a modernization process, with the Black Sea Fleet taking into service new frigates that would be able to launch *Kalibr* missiles.⁶⁹ Russia's aerospace forces were similarly slated to receive upgrades, with Tu-160 and Tu-95 bombers in line to receive new control, navigation and sighting systems.⁷⁰ Overall, as Anton Lavrov argues, the aerospace forces "gained a

⁶⁷ Joshua Menks and Michael B. Petersen, "The 'Kalibrization' of the Russian Fleet," US Naval Institute *Proceedings*, Vol. 148/5/1,431 (May 2022), <https://www.usni.org/magazines/proceedings/2022/may/kalibrization-russian-fleet>.

⁶⁸ Hanna Notte et. al., "Russia's novel weapons systems: military innovation in the post-Soviet period," *Nonproliferation Review*, Vol. 28, Issue 3, 2021.

⁶⁹ "Chernomorskoe obnovenie," *Vzglyad*, April 29, 2013, <https://vz.ru/society/2013/4/29/630771.html>.

⁷⁰ "Priblizhenie k paritetu," *Vzglyad*, October 3, 2014, <https://vz.ru/society/2014/10/3/708797.html>.

definite advantage” in that competition over resources over the navy, benefitting from a large-scale modernization of all three types of strategic bombers:⁷¹ Tu-22M3M, Tu-95MSM, and Tu-160M, in addition to the development of new precision medium- and long-range missiles for all strategic aircraft.

Constraints: But there were also constraints inhibiting the acquisition of long-range precision-guided weaponry. Conventional precision strike munitions did not enter full-scale production until 2013 or later, meaning that the starting number was quite small.⁷² A 2015 CAST report bemoaned that the Russian air force had only started to receive (and did not stockpile in sufficient quantity) medium-range air-to-air missiles with active radar homing heads (long used by Western states) early that year and also did not have enough high precision air-to-surface missiles and cruise missiles.⁷³ Overall, the report concluded rather unforgivingly that “the attack potential of Russian aviation, in technological terms, is frozen on the level of what it was 30 years ago.”

The faster development of a higher number of missiles was inhibited by production bottlenecks and financial constraints. As noted earlier, a 2013 expert report to the Federation Council focused on the deficiencies of funding and planning in the research and development, testing, and mass production of high-precision weapons. Stating that only fifteen percent of all weaponry in the stockpile of Russia’s armed forces is new, and that only a fraction of those new weapons was high-precision, the expert report cited a “lack of technological capability for mass production of equipment and weapons” in Russia’s defense industry. It further lamented that, “over the past two decades, the ties between research institutes, the military and industry have been lost, which has negatively affected the development of tactical and technical requirements for precision weapons.” The report, in summarizing the main inhibitors to the acquisition of precision weapons, cited such factors as an “inefficient public procurement cycle that hinders mass production,” alongside “inadequate resources allocated to R&D on high-precision weapons development.”⁷⁴

These problems were compounded by the high cost per unit of producing long-range precision-guided missiles. In 2016, for instance, Russian military expert Anton Baev estimated that one *Kalibr* launch would cost around 750,000-900,000 USD, putting the price tag for launching 56 *Kalibr* at no less than 2.8 billion rubles.⁷⁵ While Baev’s numbers are estimates—the production costs for such missiles are not made official—they are generally supported by Russian expert Andrey Soyustov. He wrote in 2015 that the most expensive bomb used by Russia in Syria (the KAB-500, a guided bomb) costs around 50,000 USD, meaning that “a cruise missile is gold and diamond” in comparison.⁷⁶ Others analyzing the Syrian campaign have similarly suggested that Russia’s extensive reliance on Tu-22M3 bombers equipped with only unguided munitions in counter-ISIL strike operations—instead of Tu-95 and Tu-160 bombers equipped with *Kb-101* and *Kb-555* air-launched, satellite-guided cruise missiles—was probably driven by concerns over costs.⁷⁷ Indeed, a RAND study

⁷¹ Lavrov, “Russian Aerial Operations in the Syrian War.”

⁷² Reach et. al., “Russia’s Evolution Toward a Unified Strategic Operation.”

⁷³ *Gosudarstvennye programmy vooruzheniya RF: problemy ispolneniya i potentsiy optimizatsii* (analytical report, Center for Analysis of Strategies and Technologies, 2015), http://cast.ru/files/Report_CAST.pdf.

⁷⁴ “Sostoyanie zakonodatelnogo obespecheniya razrabotki, ispytaniy i seriynogo proizvodstva vysokotochnogo oruzhiya na predpriyatiyakh rossiiskogo oboronopromyshlennogo kompleksa.”

⁷⁵ Anton Baev, “Skol’ko stoil god voyny: Vo chto oboshlas’ Rossii voennaya operatsiya v Sirii,” *RBC*, October 3, 2016, <https://www.rbc.ru/politics/30/09/2016/57ebb7199a7947db5bb2b309>.

⁷⁶ “Kaspiiskim Kalibrom po Sirii: zachem eto bylo nado?”

⁷⁷ “Road to Damascus: The Russian Air Campaign in Syria, 2015-2018.”

concluded that cost and munitions production and stockpile constraints appear to have driven many decisions by the Russian aerospace forces in Syria with respect to the use of precision-guided munitions (PGMs) and PGM-equipped aircraft. Amid an overwhelming reliance on unguided munitions, the report finds, sea-launched cruise missiles likely constituted Russia's most consistent form of precision strike in Syria.⁷⁸

Russia's Acquisition, Threat, and Use of Long-Range Precision-Guided Missiles Post-Pattern Break

Drivers: Following the pattern break, Russia's drive to build out its arsenal of long-range precision-guided missiles continued. It not only increased the stockpile of such missiles but also introduced new types, such as the aeroballistic *Kinzhal* and a long-range version of the ground-launched short-range (500 km) *Iskander* missile.

Moreover, lessons learnt from the Syrian campaign influenced relevant procurement decisions not just with respect to this specific class of missiles but relating to Russian arms generally. As Michael Kofman has argued, from a capability standpoint, "Syria helped settle an important debate during the years of the 2011-2020 State Armament Program... It shifted the emphasis from platforms to capabilities and key enablers, precision-guided weapons, targeting systems, automated systems of command and control, electronic warfare, and space-based assets to enable intelligence collection."⁷⁹

After the initial cumulative pattern break from 2015-2017, Russia also continued to deploy long-range missiles in the Syrian theater even as large-scale combat in the conflict largely subsided. Such deployments appeared to have been aimed mostly at power projection. In May 2018, President Putin announced that, "due to the continuing terrorist threat in Syria, our ships equipped with cruise missiles will patrol the Mediterranean on a continuous basis."⁸⁰ A few months later, in November 2018, it was reported that the Russian frigate Admiral Makarov, armed with long-range *Kalibr* cruise missiles, had arrived in the Mediterranean to join the permanent fleet there.⁸¹ Another show of force came in summer 2021 when Russia deployed Tu-22M3 bombers to the Hmeimim airbase in Syria for the first time, alongside MiG-31K interceptors able to carry *Kinzhal* missiles. In months prior, Russia had extended the runway and built a second one at Hmeimim to accommodate the Tu-22M3 equipped with Kh-22 cruise missiles.

Aside from these deployments in Syria, Russia did not have another opportunity to use long-range precision-guided missiles until its full-scale invasion of Ukraine in February 2022. As a result, by 2022, Russia was still experimenting with combat use of its long-range PGMs. Meanwhile, the strategic community was continuing to hone its thinking on the employment of this class of weaponry based on lessons learnt during the Syrian operation. Dima Adamsky has analyzed the insights that this experience generated for the Russian military more broadly, which related to (1) the conceptualization of new forms of warfare and features of operational art, (2) force modernization around the reconnaissance-strike complex, and (3) the emerging concept of operations known as

⁷⁸ Ibid.

⁷⁹ Kofman, "Syria and the Russian Armed Forces."

⁸⁰ "Putin: korabli VMF s raketami 'Kalibr' budut nesti postoyannuyu vakhtu v Sredizemnom more," *Tass*, May 16, 2018, <http://tass.ru/armiya-i-opk/5205614>.

⁸¹ "V Sredizemnomor'e voshel vooruzhennyi 'Kalibrami' fregat 'Admiral Makarov'," *Interfax.ru*, November 6, 2018, <https://www.interfax.ru/world/636574>.

“the strategy of limited actions.”⁸² The latter, he argues, denotes a reliance on long-range maneuver by forces and by fires, tailored according to the “reasonable sufficiency” principle: “the golden range between overshooting and undershooting, ... limiting the scale of military intervention to the minimum possible that would still allow Russia to project regional influence.” Adamsky also notes that even though employment of PGMs remained marginal in Syria, “the General Staff saw it as an entrance of the Russian military to the precision regime club.”

Constraints: Still, the post-pattern break period has also brought to the fore constraints regarding the acquisition of long-range missiles and PGMs. Indeed, evidence of the high cost to the Russian state of expanding its arsenal of precision-guided munitions began to emerge soon after the pattern break. In 2017, General Gerasimov observed that noncontact warfare using conventional PGMs was essentially a rich country’s style of war given the costliness of missiles and the supporting architecture needed for their operation.⁸³ In 2018, this sentiment was echoed by President Putin, who asked that the PGM production process be streamlined to conserve funds.⁸⁴ Nonetheless, Russia’s long-range conventional precision strike inventory was estimated to have grown to a considerable size by 2021.⁸⁵

Additional constraints regarding the acquisition and use of this weaponry would not come fully to light until Russia’s invasion of Ukraine in 2022, i.e., years after the pattern break. This is primarily because there was no Russian combat use of these missiles between the Syrian and Ukrainian campaigns. To be clear, , Russia did test its missile fleet on several occasions between 2017 and 2022—anti-ship missiles in 2018, stealth missiles in the 2018 *Vostok* exercises, and the *Kinzhal*, *Tsirkon*, S-300 and S-350 air defense missiles on several occasions, as well as an ASAT weapon in November 2021. The *Iskander-M*, *Kb-101*, *Kinzhal*, *Tsirkon*, *Kalibr*, and *Bastion* also underwent dual-mission testing during this period, as well . Yet, the constraints Russia would face in using such systems in an operational context different from Syria would only become apparent in Ukraine. Indeed, Russia’s pattern-breaking use of them in Syria—against non-state actors lacking air defenses, unhardened targets, and sparsely populated areas without high-rise buildings—was of little value in unveiling Russia’s future operational needs.

Since 2022, the Ukraine campaign has revealed the constraints Russia faces in producing long-range missiles in sufficient numbers. A report published recently by the Center for Strategic and International Studies, which assesses the impact of Western sanctions on Russia’s defense industry, gives insights into the rate at which Moscow’s long-range precision-missile stocks have been decreasing over the course of one year of war in Ukraine, hampering its ability to conduct frequent missile strikes.⁸⁶ The report cites Ukrainian minister of defense Oleksii Reznikov, who stated in November 2022 that the Kremlin had lost around 24 percent of its ground-, sea-, and air-launched

⁸² Dima Adamsky, “Russian Lessons from the Syrian Operation and the Culture of Military Innovation,” George C. Marshall European Center for Security Studies *Security Insights*, No. 047 (February 2020), <https://www.marshallcenter.org/en/publications/security-insights/russian-lessons-syrian-operation-and-culture-military-innovation>.

⁸³ Reach et. al., “Russia’s Evolution Toward a Unified Strategic Operation,” p. 46.

⁸⁴ *Ibid.*, p. 46.

⁸⁵ *Ibid.*, p. 59.

⁸⁶ Max Bergmann, Maria Snegovaya, Tina Dolbaia, et. al., *Out of Stock? Assessing the Impact of Sanctions on Russia’s Defense Industry*, (report, Center for Strategic and International Studies, April 2023), https://csis-website-prod.s3.amazonaws.com/s3fs-public/2023-04/230414_Bergmann_Out_Stock.pdf?VersionId=6jfHCP0c13bbmh9bw4Yy2wbpjNnfeJi8.

high-precision missiles. These numbers included reduced stocks of the *Kalibr* and *Kb-101* inventories (around 37 percent and 50 percent of the initial stocks, respectively). According to some estimates, Russia fired missiles in vastly higher numbers compared to the Syria campaign—more than 1,100 missiles over the first twenty-one days of the war⁸⁷ and an estimated 5,000 missiles over one year in Ukraine.

However, these numbers also show that any estimates regarding Russia's previous production rate of missiles, including during the pattern break period, should be treated with considerable caution. A recent RAND study, citing a Russian source from the 46th Central Scientific Research Institute, states that, between 2016 to 2019, Russia produced 100 *Kalibr* sea-launched cruise missiles per year, or eight missiles per month.⁸⁸ If Russia launched 5,000 missiles in the first year of the Ukraine campaign alone, these production estimates appear dubious: Either Russia had a much larger stockpile than anyone had anticipated by February 2022, or it was able to ramp up production to replace depleting stockpiles quickly. Indeed, the available evidence suggests that Russia proved able to continue to manufacture new missiles after the start of the war in Ukraine. Its manufacturing has been sustained either by Russia's ability to acquire foreign-produced components such as microchips by circumventing existing export controls and sanctions or by the fact that it had stockpiled such components prior to February 2022, or both.

Whatever the size of Russia's missile stockpile when it entered the Ukraine war in February 2022, it was soon forced into a range of adaptations: These included relying on its older and less accurate, yet more plentiful, missile arsenal; repurposing missiles meant for other missions and, in certain cases, drawing on its stockpiles of nuclear delivery systems to conduct conventional missile strikes;⁸⁹ acquiring combat drones (*Shahed*) from Iran; and trying to saturate Ukrainian air defenses through a combination of such Iranian drones and high-intensity waves of missile strikes.

Conclusions

Several conclusions can be drawn from Russia's pattern-breaking employment of long-range missiles in Syria. First, there are limitations in what this case study reveals about the United States' practice (or lack thereof) of strategic empathy vis-à-vis Russia. Given Russia's concern with closing the "precision gap" and its desire to test its evolving long-range capability in combat, there is probably little the United States could have done—practicing strategic empathy—to dissuade or deter its strategic adversary from using this class of weaponry in Syria. Russia's employment betrayed Moscow's serious intent in 2015 to send a signal to the United States regarding its evolving non-nuclear capability. That Moscow chose to send this signal appears important in light of the subsequent evolution of Russian power projection leading up to its full-scale invasion of Ukraine in 2022.

⁸⁷ Seth G. Jones, "Russia's Ill-Fated Invasion of Ukraine: Lessons in Modern Warfare," *CSIS Briefs*, June 2022, https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/220601_Jones_Russia%27s_Ill-Fated_Invasion_0.pdf?VersionId=Ggqjb.JsRbJzr_wlu5jrVT_Xe3AW3jur.

⁸⁸ Reach et. al., "Russia's Evolution Toward a Unified Strategic Operation."

⁸⁹ William Alberque, "What Has the War on Ukraine Revealed About Russia's Non-Strategic Missiles?," *IJSS*, March 6, 2023, <https://www.ijss.org/online-analysis/online-analysis/2023/03/what-has-the-war-revealed-about-russias-non-strategic-missiles/>.

This case study also suggests that constraints on the use of strategic weaponry in one operational context need not be instructive for their use elsewhere. In some cases, an overt focus on these constraints can even lead to erroneous assessments and unrealistic expectations. Indeed, although Russia's limited use of missiles against unhardened targets in Syria was considered successful and a great "publicity stunt," it failed to foreshadow the shortcomings of Russia's "Tomahawk-style" weapon—one developed with a relatively primitive adversary in mind—once deployed in Ukraine. Instead, Russia's experience in Ukraine—which has deployed sophisticated air defenses in considerable numbers against Russian missiles—shows that the challenges Moscow faces in closing the "precision gap" have changed: Since the 1990s, missile defense has made considerable progress, making it harder to hit targets and necessitating the use of large numbers of missiles to penetrate defenses. Eight years after its first combat use of long-range missiles in Syria, Russia is only now reckoning with this reality. The "quick fixes" implemented by the Russian military in Ukraine have, to date, emphasized the saturation of Ukrainian missile defenses using a combination of relatively primitive but cheap Iranian-made drones and high-intensity waves of Russian cruise and ballistic missiles. More long-term, technology-driven solutions for the unexpectedly strong performance of air defenses against Russia's long-range strike capability will likely have to wait until after the war. Going forward, Moscow might opt for a "low-plus-high-end" solution for the new offense-defense equation: it could de-emphasize subsonic missiles and concentrate on higher-end hypersonic assets while also ensuring an ongoing supply of cheap, *Shahed*-type unmanned aerial vehicles to saturate missile defenses.

CHAPTER THREE

Russia's Acquisition of Iranian-Made Drones for its War Against Ukraine

Hanna Notte

Introduction

Russia's decision to unleash a full-scale invasion of Ukraine in February 2022 ushered in a new era. After blundering into the neighboring country, President Putin appeared ill-prepared both for Ukraine's resolve to fight and for the West's stamina in supporting Kyiv. Over the course of 2022 and faced with unprecedented sanctions and the prospects of a war of attrition, Russia needed to adapt on the battlefield while securing lifelines for its economy and defense enterprise. In that context, the Russian leadership turned to Iran in summer 2022 to covertly procure unmanned aerial vehicles (UAVs)—especially *Shahed-131/Shahed-136* drones (repainted and renamed by Russia as *Geran-1/Geran-2*)—for employment primarily against Ukrainian civilian infrastructure.¹

Because Russia had not previously acquired or used combat UAVs from foreign sources, its decision to do so constituted a pattern break in its military campaign against Ukraine. And yet, while the United States and its European allies have been largely transparent and even vocal about the weapons they supplied to enable Ukraine to defend itself, the Russian government has consistently denied its use of Iranian-made drones.² Indeed, although Iran later admitted to selling UAVs to Russia “before the outbreak of the war,”³ it was not until July 2022 that the United States alleged for the first time that Moscow was turning to Tehran to provide it with combat drones.⁴ By late August, Russia started to employ the drones, especially the *Shahed-136*, against targets in Ukraine, predominantly against critical infrastructure, but also against some military targets. An intensive period of strikes then occurred between October and December 2022.⁵

In mid-October 2022, U.S. officials also sounded the alarm that Iranian personnel were assisting Russia “on the ground” in Crimea.⁶ Moreover, they accused Iran of helping Russia build its own

¹ For a discussion on the technical profile of the *Shahed-136*, see: Uzi Rubin, “Russia’s Iranian-Made UAVs: A Technical Profile,” *RUSI*, January 13, 2023, <https://rusi.org/explore-our-research/publications/commentary/russias-iranian-made-uavs-technical-profile>. Besides the *Shahed-136*, Russia also acquired *Shahed-129*, *Shahed-191*, and *Mohajer-6* drones, as well as the *Shahed-131* which are slightly smaller than the *Shahed-136*.

² For example, “Kremlin denies using Iranian drones in attack on Ukraine,” *Reuters*, October 18, 2022, <https://www.reuters.com/world/kremlin-denies-using-iranian-drones-attack-ukraine-2022-10-18/>.

³ “Iran confirms drones to Russia but ‘months’ before Ukraine war,” *Al Jazeera*, November 5, 2022, <https://www.aljazeera.com/news/2022/11/5/iran-confirms-drone-sales-to-russia-but-months-before-the>.

⁴ “Russian officials visited Iran to view drones, says U.S. official,” *Reuters*, July 16, 2022, <https://www.reuters.com/world/russian-officials-visited-iran-view-drones-says-us-official-2022-07-16/>.

⁵ “Timeline: Iran-Russia Collaboration on Drones,” *United States Institute of Peace*, March 1, 2023, <https://iranprimer.usip.org/blog/2023/mar/01/timeline-iran-russia-collaboration-drones>.

⁶ “Iran plans to send missiles, drones to Russia for Ukraine war, officials say,” *Washington Post*, October 16, 2022, <https://www.washingtonpost.com/national-security/2022/10/16/iran-russia-missiles-ukraine/>; “White House says Iran

drones.⁷ By early January 2023, per Ukrainian official estimates, Russia had used approximately 660 *Shahed*-type drones against Ukraine while maintaining a contract with Iran for a total of 1,750 drones and presumably awaiting delivery of 300 more.⁸ Waves of strikes continued intermittently in spring and summer 2023, with some ebbs that led Western governments to assess that Russia was either running low on UAV stockpiles or saving them for future attacks.⁹ At the time of writing, Russia's acquisition and use of Iranian drones continues. Correspondingly, the pattern break examined in this case study can be best understood as ongoing, highlighting challenges in the exercise of strategic empathy in "real time" (i.e., as a pattern break unfolds).

Indeed, because the pattern break is in motion, it has been difficult to appreciate its full extent and trajectory. Moreover, since Russia and Iran are highly secretive about mutual transfers of weaponry, especially in the context of the Ukraine war, analyzing the specifics of the military-defense relationship has been challenging. Still, several investigative media reports published in 2022 and 2023 have shed light on the logistical dimensions of Russia's drone procurement from Iran. Such reports, analyzing flight radar data, customs data and satellite imagery, indicate that Iran has transported drones to Russia by boat and using state airlines.¹⁰ Open-source research on the make-up of the *Shahed-136* drones has found that they contain a considerable number of components from Western companies and have likely been modified to suit Russia's operational needs for attacks against large targets like energy infrastructure.¹¹ Notwithstanding the availability of such reporting, however, there is likely a considerable amount of details related to Moscow's drone acquisitions from Iran—and future Iranian and Russian intentions—that remains obscure to Western policymakers and analysts.

A particularly important question in this regard that external observers have attempted to answer relates to whether the pattern break is limited to Russia receiving Iranian combat UAVs or whether it will extend to include additional support and weaponry. As early as October 2022, for instance, U.S. officials conjectured that Iran might also provide ballistic missiles to Russia.¹² While Iran has

helping Russia 'on the ground' in Crimea," *Al Jazeera*, October 20, 2022,

<https://www.aljazeera.com/news/2022/10/20/white-house-says-iran-helping-russia-on-the-ground-in-crimea>.

⁷ "Iran will help Russia build drones for Ukraine war, Western officials say," *Washington Post*, November 19, 2022,

<https://www.washingtonpost.com/national-security/2022/11/19/russia-iran-drones-secret-deal/>. See also "Moscow, Tehran Advance Plans for Iranian-Designed Drone Facility in Russia," *Wall Street Journal*, February 5, 2023, <https://www.wsj.com/articles/moscow-tehran-advance-plans-for-iranian-designed-drone-facility-in-russia-11675609087?st=8zpf0nohm5fvi9f>.

⁸ "Russia Is Struggling to Replenish Missile Stocks, Ukraine Says," *New York Times*, January 4, 2023,

<https://www.nytimes.com/live/2023/01/04/world/russia-ukraine-news?smid=url-share#lacking-precision-missiles-russia-is-increasing-its-use-of-drones-ukraine-says>.

⁹ "Russia May Be Running Low on Iranian Drones," *Bloomberg*, February 21, 2023,

<https://www.bloomberg.com/news/articles/2023-02-21/russia-may-be-running-low-on-iranian-drones-awaits-new-supplies?sref=RR1m1tD8&leadSource=verify%20wall>.

¹⁰ "Iran smuggled drones into Russia using boats and state airline, sources reveal," *The Guardian*, February 12, 2023,

<https://www.theguardian.com/world/2023/feb/12/iran-uses-boats-state-airline-smuggle-drones-into-russia>.

¹¹ "CNN Exclusive: A single Iranian attack drone found to contain parts from more than a dozen US companies,"

CNN, January 4, 2023, <https://edition.cnn.com/2023/01/04/politics/iranian-drone-parts-13-us-companies-ukraine-russia/index.html>; "Tailor-Made Shaheds: Iranian Drones Are Being Modified To Russian Specifications," *Forbes*, February 12, 2023, <https://www.forbes.com/sites/pauliddon/2023/02/12/tailor-made-shaheds-iranian-drones-are-being-modified-to-russian-specifications/?sh=71491a2e4e91>.

¹² According to various reports, Iran could transfer the 300-km-range Fateh-110 and/or 700-km-range Zolfaghar solid-propellant ballistic missiles to Russia. See: "Russia requests ballistic missiles from Iran and devises route for them,"

not yet done so, and Western assessments find that Russia has hesitated to move in this direction out of concern that Ukraine’s allies could supply Kyiv with long-range rockets in response,¹³ it cannot be ruled out that the pattern break could “morph” to include Iranian missile support for Russia in the future. In May 2023, the United States also voiced concern that Russia was looking to acquire more “advanced” drones “capable of more lethality” from Iran.¹⁴ It is also conceivable that a growing number of Iranian drones may be utilized in combined loitering munition strikes in conjunction with Russia’s own systems.¹⁵

Other as-yet-unanswered questions relate to the flipside to the pattern break, namely, enhanced Russian military support to Iran in return for the *Shahed* drones. Indeed, Western officials have warned that Moscow intends to provide Tehran with an “unprecedented level” of military support, including helicopters, air defense systems, and Su-35 fighter jets.¹⁶ While it is unclear how much of that support has materialized or will be sent in the future, sources close to the Iranian government announced in March 2023 that a contract to procure the Su-35 was already finalized.¹⁷ Other reports indicate that Russia has supplied Iran with cyber weapons and has sent some U.S. and NATO-origin equipment—captured by Moscow on the battlefield in Ukraine—to Iran, where U.S. officials believe Tehran will try to reverse-engineer the systems.¹⁸

As these developments indicate, this pattern break remains very much in motion, and it is difficult to gauge the full future extent of the Russian-Iranian military-defense cooperation and the prospective flow of strategic weaponry and mutual learning—in both directions. Nevertheless, Russia’s readiness to supply Iran with the kind of military equipment it was previously reluctant to provide does suggest that what used to be a patron-client relationship—in which Russia had all the leverage—is evolving into something new. From this perspective, Russia’s acquisition of the *Shahed-136* and other drones from Iran has been costly because it has afforded Tehran greater bargaining power over Moscow. Because Russia’s use of the UAVs to conduct strikes on Ukraine’s power grid has encouraged Ukraine to use drones to strike vulnerable Russian energy and military infrastructure—as well as Russian cities—in retaliation, the payoff for Moscow is yet not entirely clear.

Ukrainska Pravda, November 7, 2022, <https://www.pravda.com.ua/eng/news/2022/11/7/7375314/>. Iran has used both the Fateh-110 and Zolfaghar in strikes against its adversaries.

¹³ “Russia and Iran hesitate over cooperation as west warns of costs,” *Financial Times*, March 5, 2023, <https://www.ft.com/content/b9361eae-5b05-4c17-8c59-7fb11e2579fe>.

¹⁴ “Russia aims to obtain more attack drones from Iran after depleting stockpile, White House says,” *Associated Press*, May 15, 2023, <https://apnews.com/article/russia-iran-military-cooperation-d982dd3faf78fbb17dfc8b9c1cb9dae7>.

¹⁵ Jeffrey A. Edmonds and Samuel Bendett, *Russia’s Use of Uncrewed Systems in Ukraine* (Arlington, VA: Center for Naval Analysis, March 2023), <https://www.cna.org/reports/2023/03/Russian-Uncrewed-Systems-Ukraine.pdf>.

¹⁶ “Iran will help Russia build drones for Ukraine war, Western officials say,” *Washington Post*, November 19, 2022, <https://www.washingtonpost.com/national-security/2022/11/19/russia-iran-drones-secret-deal/>; “Russia-Iran military partnership ‘unprecedented’ and growing, officials say,” *Washington Post*, December 9, 2022, <https://www.washingtonpost.com/national-security/2022/12/09/russia-iran-drone-missile/>.

¹⁷ “Iran to buy Su-35 warplanes from Russia – Iranian broadcaster,” *Iran International*, March 11, 2023, <https://www.iranintl.com/en/202303110871>.

¹⁸ “Russia Supplies Iran With Cyber Weapons As Military Cooperation Grows,” *Wall Street Journal*, March 27, 2023, https://www.wsj.com/articles/russia-supplies-iran-with-cyber-weapons-as-military-cooperation-grows-b14b94cd?st=oxlk35r0cgdt94y&reflink=share_mobilewebshare; “Russia has been sending some US-provided weapons captured in Ukraine to Iran, sources say,” *CNN*, March 14, 2023, <https://edition.cnn.com/2023/03/10/politics/russia-iran-ukraine-weapons>.

This pattern break has also been diplomatically costly for Russia since Western states have alleged that Iran's supply of certain UAVs violates UN Security Council Resolution 2231, which endorsed the Joint Comprehensive Plan of Action (JCPOA). From this perspective, Moscow's pattern-breaking acquisition has greatly complicated the restoration of the nuclear deal, to which it is a party. That said, Russia has accorded less priority to efforts aimed at reviving the nuclear deal since invading Ukraine. As a result, it is unlikely that these diplomatic costs have registered as meaningful in the Kremlin.¹⁹

Still, the price Russia is paying for these drones raises important questions, which include the following: Why did Russia take the unprecedented step in 2022 to rely on a foreign source, and Iran in particular, for the acquisition of combat UAVs? What does this pattern break reveal about the drivers and constraints related to Russia's acquisition and use of this type of weaponry? And finally, what does this case study suggest about the challenges in applying strategic empathy in responding to political and military developments as they unfold?

This case study proceeds as follows: It begins with an analysis of the evolution of Russia's indigenous UAV industry as well as Russian efforts to procure stockpiles of precision-guided munitions (PGMs) prior to the full-scale invasion of Ukraine. In doing so, it continues the analysis presented in the preceding chapter on Russia's pattern-breaking use of long-range precision-guided missiles in Syria from 2015. It then chronicles Russian and U.S./Ukrainian reactions to Russia's pattern-breaking employment of the *Shahed-136* in the Ukraine campaign, concluding with an analysis of the drivers and constraints shaping Russia's acquisition and use of combat UAVs. The chapter also reflects on the challenges in analyzing a pattern-break as it unfolds and its implications for the practice of strategic empathy in real time.

Establishing the Pattern: Russia's Acquisition and Use of UAVs

In the years leading up to the pattern break, analysis of Russia's acquisition and use of UAVs was predominantly concerned with the evolution of the domestic drone industry and Moscow's efforts to catch up with other players. In his in-depth assessment of the Russian military robotics sector, published in 2021, for instance, CNA's Samuel Bendett looked at the Russian defense establishment's views on the future of warfare, which pointed to the need to step up investment in high-tech systems including different types of autonomous vehicles in order to counter a variety of threats.²⁰ Elsewhere, Jeffrey Edmonds and Bendett elaborated on the reconnaissance strike and fire complex as a key activity envisioned by the Russian military for its UAVs. That complex, which incorporates Western notions of bringing intelligence, surveillance and reconnaissance (ISR) into broader strike operations, envisions UAVs "as critical links in real-time intelligence fusion and rapid target acquisition and destruction."²¹ Providing an overview of UAVs deployed by Russia in 2021, Bendett noted that systems were present across the entire Russian military force structure, including motorized rifle and tank brigades, the aerospace forces, and the navy.

¹⁹ Hanna Notte, "Russia's Invasion of Ukraine: The Iran Nuclear Price Tag," *Friedrich Ebert Stiftung*, February 2023, <https://library.fes.de/pdf-files/international/20083.pdf>.

²⁰ Samuel Bendett, "Military robotics development," in: *Advanced military technology in Russia: Capabilities and implications*, Research Paper, Chatham House, Russia and Eurasia Programme, September 2021, <https://www.chathamhouse.org/2021/09/advanced-military-technology-russia/05-military-robotics-development>.

²¹ Edmonds and Bendett, *Russia's Use of Uncrewed Systems in Ukraine*, p. 3.

Looking ahead, Bendett suggested at the time that Russia's priorities for military UAV development would likely include an effort to introduce elements of artificial intelligence (AI) into drone control systems, integrate UAVs into a common airspace with manned aircraft, and to develop UAV "swarms." Writing in 2021, Bendett indicated that there was still considerable scope for Russia's long-range combat UAV capability to grow and to enhance Russia's ability to deliver strikes against ground and aerial targets at greater distances. He cautioned, however, that "these developments are not a foregone conclusion given the Russian military industry's ongoing struggles with key manufacturing components for autonomous systems, such as microelectronics and engines."²² Russian analyst Alexey Stepanov has echoed such sentiments, noting also in 2021 that a "technological breakthrough" was needed in Russia's development of military UAVs in order for it to be competitive.²³

Although these assessments found that Russia's military UAV sector remained underdeveloped, however, Russia had come some way in years prior to their publication. Russia's Center for Analysis of Strategies and Technologies (CAST) applauded the expansion of the country's arsenal of military UAV between the 2008 war against Georgia, when Russia had only a few UAV systems in service, all "cumbersome, primitive, and obsolete," and the 2015 campaign in Syria, when the Russian armed forces operated a total of 1,720 UAVs.²⁴ The primary roles performed by those UAVs included reconnoitering targets for airstrikes, observing and monitoring strikes, serving as airborne spotters for the Syrian artillery, and collecting aerial imagery and 3D-mapping in support of humanitarian convoys. While judging Russia's use of drones for reconnaissance purposes in Syria a success, the authors of the report produced by CAST bemoaned "one critical flaw: the Russian forces don't have any attack drones—unlike not only the U.S.-led coalition, but also the Israelis, the Iranians, and the Turks, who all have medium-class attack drones in the Syrian theater."²⁵ They explained that though the Russian Ministry of Defense (MoD) had commissioned the development of medium and heavy UAVs (which could carry weapons payloads) back in 2011, the programs were still far from fruition at the time of the Syrian campaign. Still, Russia's first-ever use of drones "around the clock" in Syria afforded its UAV developers an important learning opportunity.

A sense that the Syrian campaign might spur not just the further improvement of Russia's reconnaissance drones but also enhanced efforts to develop combat UAVs was shared by Bendett, too. He emphasized that, while Syria became a "massive testing ground" for Russia's short-range drone fleet, the lack of UAVs capable of striking targets at long range "was acutely felt." This recognition, according to Bendett, subsequently drove Russia's development of longer-range combat drones. These included systems (deployed and still in development [not deployed]) such as the *Orion*, *Altius*, *Okhotnik* [Hunter], *Grom* [Thunder], and *Sirius*.²⁶

Five years after Russia's military intervention in Syria, another war in its neighborhood—this time even closer to home—would provide a second opportunity for Russia to refine its thinking about the utility of military UAVs. Azerbaijan successfully employed TB2 Bayraktar drones acquired from

²² Ibid.

²³ Alexander Stepanov, "Est' li budushchee u rossiiskikh BPLA?," *Russian International Affairs Council*, June 2021, <https://russiancouncil.ru/analytics-and-comments/columns/military-and-security/est-li-budushchee-u-rossiiskikh-bpla/>.

²⁴ "Russian UAVs in Syria," Center for Analysis of Strategies and Technologies, undated, <http://cast.ru/eng/products/articles/russian-uavs-in-syria.html>.

²⁵ Ibid.

²⁶ Bendett, "Military robotics development."

Turkey against Armenia in the October 2020 Second Karabakh War. Azerbaijan's performance, according to Bendett, served as a "striking demonstration" to Russia of the potential for a conventional military to act in concert with combat UAVs while also laying bare Russia's own lack of such systems in active service.²⁷ Another report by CAST, which reviewed the use of combat UAVs in the Second Karabakh War, concluded with the hope that Russia would finally recognize the need to catch up quickly in precision weapons and combat UAVs, noting that "The Russians are slow to saddle a horse, but once they do, they ride fast."²⁸

The report also argued that the systems used by Azerbaijan did not present a novel threat *per se*, since similar results could have been achieved by large and modern manned air forces—albeit at a much higher cost. Indeed, it was precisely the cost factor that made the employment of the combat UAVs so attractive. Bendett noted that, following the Second Karabakh War, the Russian defense ministry asked the military-industrial complex to accelerate the development and testing of kamikaze drones. By February 2021, Russia's military-industrial behemoth *Rostec* announced that it had tested two such drones—the *Kub* and the *Lancet*—in Syria.²⁹

How far, then, had Russia's efforts to increase its domestic production of UAVs and combat UAVs (and, more generally, PGMs) proceeded by early 2022, when Moscow decided to launch a war against Ukraine?

According to the Kremlin, at the start of the war in February 2022, Russian troops had approximately 2,000 military drones of all types at their disposal across the services and military commands.³⁰ In the early phase of the Ukraine operation, Russia attempted to pin down Ukraine's air defenses by conducting ballistic and cruise missile strikes across the country. To this end, it launched an estimated total of 2,125 missiles over the first 68 days of the war.³¹ Yet Russia's air force failed to achieve air superiority over Ukrainian skies, necessitating an elevated reliance on cruise missile strikes to hit targets deep inside Ukraine. At the same time, Russia would soon face shortages of PGMs, laying bare its continued constraints.

It is against this backdrop that Russia deployed its *Orion* combat drone, which had been tested in Syria, alongside the older *Forpost-R* in the initial months of the war against Ukraine. In addition, it made extensive use of UAVs such as the *Eleron-3* and the omnipresent *Orlan-10*—as well as a growing number of inexpensive commercial drones, including from China—for intelligence, surveillance, and reconnaissance (ISR) activity.³² And yet, while Russia's military industrial complex

²⁷ Ibid.

²⁸ Ruslan Pukhov, ed., *Burya na Kavkaze* (Moscow: Centre for Analysis of Strategies and Technologies, 2021), <http://cast.ru/books/burya-na-kavkaze.html>.

²⁹ Alexei Ramm, "U Rossii est' svoia lineika bespilotnikov-kamikadze", *Iz.ru*, February 19, 2021, <https://iz.ru/1126653/aleksei-ramm/u-rossii-est-svoia-lineika-bespilotnikov-kamikadze>, also cited in: Bendett, "Military robotics development."

³⁰ "Putin nazval kolichestvo bespilotnikov v rossiiskoi armii," *Vedomosti*, November 2, 2021, <https://www.vedomosti.ru/politics/news/2021/11/02/894119-putin-nazval-kolichestvo-bespilotnikov-v-rossiiskoi-armii>, also cited in Bergmann, et. al., *Out of Stock?*

³¹ Seth G. Jones, "Russia's Ill-Fated Invasion of Ukraine: Lessons in Modern Warfare," *CSIS Briefs*, June 2022, https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/220601_Jones_Russia%27s_Ill-Fated_Invasion_0.pdf?VersionId=Ggqjb.JsRbJzr_wlu5jrVT_Xe3AW3jur.

³² Edmonds and Bendett, *Russia's Use of Uncrewed Systems in Ukraine*. For another assessment of the successes and constraints in Russia's use of UAV for ISR in Ukraine, see: Federico Borsari, "Assessing Drone Operations in Ukraine:

had been slow to produce any drones in significant numbers, it faced particular constraints when it came to manufacturing combat drones. As Edmonds and Bendett have chronicled, Russia only had limited number of its *Forpost* and *Orion* when the war started, which flew mostly as ISR complexes while conducting a limited number of combat strikes, and proved vulnerable to Ukrainian air defenses.³³ Other Russian combat drones appeared on the battlefield only sporadically during the initial phase of the war, or were not yet in serial production.³⁴ Moreover, it has been noted that the unimpressive impact of Russia's combat UAV deployment might have been partially a function of the limited stock of specific PGMs such as the KAB-20L and the KAB-20S, which Western sanctions on electronic and high-end components have further compounded.³⁵

Russia's defense industry proved incapable of replacing its combat UAVs quickly,³⁶ and officials and military planners soon admitted to the constraints facing Russia's indigenous stockpile and production capabilities. A Defense Ministry representative stated some six months into the war that most Russian UAVs did not meet its tactical and technical requirements, requiring it "to go to simplification, to additional approvals, to acceptance of drones for pilot operation."³⁷ One year into the invasion, Security Council Deputy Chairman Dmitry Medvedev similarly acknowledged that "the production of UAVs was not Russia's strong point or advantage before (the war)."³⁸ Shortcomings in manufacturing capacity and the availability of microelectronics, sensors, and other key systems have all been cited as constraining factors, alongside challenges in scaling up production and inter-organizational competition.³⁹ It is also conceivable, though more difficult to prove, that drone production lagged due to bureaucratic culture: an aversion in the armed forces, which have traditionally relied on artillery, missiles, and manned aircraft as strike assets, to accept a growing role for UAVs. Still, recognizing Russia's predicament, officials continued to stress the importance of ramping up the production of UAVs of various kinds in 2022 and 2023.⁴⁰

It was against this backdrop that Russia decided to procure combat UAVs from Iran. These included, most prominently, the *Shahed-136* for use against Ukrainian energy infrastructure and military targets. It is noteworthy that there appears to have been little to no publicly reported discussion among officials, industry, or military experts about such acquisition from third sources prior to the pattern break. Before summer 2022, there was no discussion on prospective Russian purchases of Iranian drones, and related cost-benefit analyses, in the open-source domain.

Reactions to the Pattern Break

U.S. and Western Reactions

Trends and Implications," *Orion Policy Institute*, July 19, 2022, <https://www.orionpolicy.org/orionforum/110/assessing-drone-operations-in-ukraine-trends-and-implications>.

³³ Edmonds and Bendett, *Russia's Use of Uncrewed Systems in Ukraine*.

³⁴ *Ibid.*

³⁵ Borsari, "Assessing Drone Operations in Ukraine."

³⁶ Jones, "Russia's Ill-Fated Invasion of Ukraine."

³⁷ Anton Mardasov, "Russia's use of Iranian drones in Ukraine hints at reliance on Iran," *Al Monitor*, October 4, 2022, <https://www.al-monitor.com/originals/2022/10/russias-use-iranian-drones-ukraine-hints-reliance-iran>.

³⁸ "Russia to possess whole family of domestic drones shortly, says Medvedev," *Tass*, March 23, 2023, <https://tass.com/defense/1593327>.

³⁹ Edmonds and Bendett, *Russia's Use of Uncrewed Systems in Ukraine*.

⁴⁰ "Russia to Launch Mass Production of Effective Drones — Medvedev," *Tass*, October 14, 2022, <https://tass.com/defense/1523079>, also cited in Bergmann et al., *Out of Stock?*

As described in detail below, official U.S. and Western responses to Russia’s pattern-breaking employment of *Shahed-136* have included providing and adapting air defense support to Ukraine; engaging in diplomatic efforts to sanction the drone transfers as violating UNSC Resolution 2231; levelling additional punitive measures against both Russia and Iran; and pursuing accountability for war crimes, albeit in a nascent way.

Indeed, once Russia’s campaign of *Shahed-136* strikes across Ukraine got underway in fall 2022, Western states sounded the alarm about the need to shore up Ukraine’s air defenses. Calling this an “absolute priority,” the United States sent thousands of Stinger air defense systems, National Advanced Surface-to-Air Missile Systems (NASAMS), and Avenger air defense systems to Ukraine.⁴¹ Other NATO allies, including Spain, Germany, Sweden, and Poland, similarly provided air defenses. When Ukrainian President Volodymyr Zelenskyy visited Washington in late December 2022, Washington announced that it would also provide Kyiv with the advanced Patriot surface-to-air missile system.⁴²

In January 2023, Ukraine took stock of its successes in shooting down *Shahed-136* over the winter and applauded the help of the German-made Gepard anti-aircraft system in particular.⁴³ In spring 2023, Israel—which had long been cautious about sending weapons to Ukraine—finally approved the export of anti-drone systems to the war-torn country.⁴⁴ By that time, however, Kyiv had grown less worried about the impact of *Shahed-136*, given its proven ability to down a high percentage of the drones. As a Ukrainian diplomat told Israeli newspaper *Haaretz*, “We have no problems with the drones at the moment.”⁴⁵

Western states have also alleged that Iran’s supply of certain UAVs to Russia violates UN Security Council Resolution 2231, which endorsed the JCPOA. Under Annex B, paragraph 4 of Resolution 2231, Iran needs the approval of the UN Security Council to sell or transfer materials and technologies on the Missile Technology Control Regime (MTCR) list that “could contribute to the development of nuclear weapon delivery systems”—including certain drones and UAV technology.⁴⁶ In the weeks after *Shahed-136* began raining down on Ukraine, France said that it was coordinating with its European partners in the JCPOA on appropriate responses.⁴⁷ The UN Secretary-General’s

⁴¹ Jim Garamone, “U.S., Allies to Supply Ukraine Air Defense Needs,” *U.S. Department of Defense DOD News*, November 29, 2022, <https://www.defense.gov/News/News-Stories/Article/Article/3231049/us-allies-work-to-supply-ukraine-air-defense-needs/>.

⁴² “The U.S. will send a Patriot air defense system to Ukraine. How will it help?” *NPR*, December 21, 2022, <https://www.npr.org/2022/12/21/1144662505/us-ukraine-patriot-missile-system>. The first Patriot system reportedly arrived in Ukraine in April 2023. See “Ukraine Receives Patriot Air-Defense Systems As Pentagon Announces More Military Aid,” *RFE/RL*, April 19, 2023, <https://www.rferl.org/a/ukraine-russia-drones-odesa/32370013.html>.

⁴³ “The little-known weapon knocking down Iranian drones over Kyiv,” *Politico*, January 4, 2023, <https://www.politico.com/news/2023/01/04/weapon-iranian-drones-ukraine-00076442>.

⁴⁴ “Israel Approves Sending Anti-Drone Systems to Ukraine,” *Haaretz*, March 16, 2023, <https://www.haaretz.com/israel-news/2023-03-16/ty-article/israel-approves-sending-anti-drone-systems-to-ukraine/00000186-ea85-d8c1-a3be-cb855e8f0000>.

⁴⁵ *Ibid.*

⁴⁶ United Nations Security Council, “Resolution 2231 (2015),” adopted by the Security Council at its 7488th meeting, July 20, 2015, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/225/27/PDF/N1522527.pdf?OpenElement>.

⁴⁷ “France says Iranian drone transfers to Russia would violate U.N. nuclear deal resolution,” *Reuters*, October 13, 2022, <https://www.reuters.com/world/france-says-iranian-drone-sales-russia-would-violate-un-security-council-2022-10-13/>; “Exclusive: EU ministers to discuss Iran drones to Russia, future sanctions, sources says,” *Reuters*, October 14, 2022,

semi-annual report on Resolution 2231 issued in December 2022 fell short of offering conclusions regarding the compatibility of Iranian practices with the resolution, however, even though Western states had alleged Iranian non-compliance in written correspondence and requested an investigation.⁴⁸ According to some reporting, Russia put pressure on the Secretary-General not to order a probe, threatening to withdraw its cooperation on other issues relating to Ukraine.⁴⁹ In addition to alleging non-compliance with Resolution 2231, Western states also sanctioned Iranian individuals and entities allegedly implicated in the drone transfers to Russia in what became several waves of punitive measures.⁵⁰ Western states have also suggested that Iran, by selling combat UAVs to Russia, may be contributing to war crimes in Ukraine, and Kyiv has been building a case for prosecution in national and international courts.⁵¹

Western analysts have interpreted Russia's turn to Iran for drones as having been driven by its quick draw-down of PGMs, resupply challenges, and financial considerations. Russia's PGM inventory issues, which came to light just a few months into the Ukraine campaign, have been chronicled by a number of military analysts.⁵² As noted in the previous chapter on Russia's pattern break in the Syrian conflict, Moscow's long-range precision-guided missile stocks decreased substantially over the course of one year of war against Ukraine, hampering its ability to conduct frequent missile strikes.⁵³ More generally, Russia's ability to sustain its rate of fire using modern PGMs quickly diminished, leading it to rely on its older and less accurate missile arsenal and to repurpose missiles meant for other missions—in addition to turning to Iran for the *Shahed-136*.

Ukraine's military assessed that Russia was compensating for its lack of missiles especially by increasing its use of drones.⁵⁴ Often overlooked in the context of Russia's poor performance in Ukraine is the fact that the Russian aerospace forces also failed to establish and exploit air superiority over Ukraine.⁵⁵ In light of these various challenges, Iranian drones offered Russia a

<https://www.reuters.com/world/exclusive-eu-ministers-discuss-iran-drones-russia-future-sanctions-sources-2022-10-14/>.

⁴⁸ "Implementation of Security Council Resolution 2231 (2015) – Fourteenth report of the Secretary-General," S/2022/912, December 12, 2022, https://www.securitycouncilreport.org/atf/cf/%7B65BF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/S_2022_912.pdf.

⁴⁹ Barak Ravid, "Scoop: Amid Russian pressure, UN report skirts question on Iran drones," *Axios*, December 14, 2022, <https://www.axios.com/2022/12/14/un-report-iran-drones-russia-ukraine>.

⁵⁰ See, for example: "EU agrees on new sanctions over Iranian drones in Ukraine," *Al Jazeera*, October 20, 2022, <https://www.aljazeera.com/news/2022/10/20/eu-agrees-new-sanctions-over-iranian-drones-in-ukraine>; U.S. Department of the Treasury, "Iran-Related Designations and Designation Update," Office of Foreign Assets Control, January 6, 2023, <https://ofac.treasury.gov/recent-actions/20230106>; "US imposes fresh sanctions on Iran's drone procurement network," *C4ISRNET*, March 22, 2023, https://www.c4isrnet.com/battlefield-tech/2023/03/22/us-imposes-fresh-sanctions-on-irans-drone-procurement-network/?utm_source=sailthru&utm_medium=email&utm_campaign=c4-overmatch.

⁵¹ "U.S. Says Iran May Be 'Contributing' To War Crimes In Ukraine," *RFE/RL*, January 9, 2023, <https://www.rferl.org/a/us-iran-contributing-war-crimes-ukraine/32215985.html>; Official Telegram channel of Ukraine's Office of the Prosecutor General, Post on January 21, 2023, https://t.me/pgov_ua/8930.

⁵² See, for instance, this thread by Russian military analyst Dara Massicot (@MassDara), "I've been comparing Russian missile strikes against Ukraine," Twitter, March 10, 2023, 1:08 PM, <https://twitter.com/MassDara/status/1634300311744438272?lang=en>.

⁵³ Bergmann, et. al., *Out of Stock?*

⁵⁴ "Russia Is Struggling to Replenish Missile Stocks, Ukraine Says," *New York Times*, January 4, 2023, <https://www.nytimes.com/live/2023/01/04/world/russia-ukraine-news?smid=url-share#lacking-precision-missiles-russia-is-increasing-its-use-of-drones-ukraine-says>.

⁵⁵ Justin Broink, *Russian Combat Air Strengths and Limitations: Lessons From Ukraine* (Arlington, VA: Center for Naval Analysis, April 2023), <https://www.cna.org/reports/2023/04/Russian-Combat-Air-Strengths-and-Limitations.pdf>.

remedy for its own struggles with producing combat drones in high quantities. They provided Moscow with systems that were tested, cheap, easily mass-manufactured, and resilient to Western sanctions, while offering ranges in the hundreds of kilometers, antijamming systems, and the ability to fly low.⁵⁶

While explaining Russia's procurement of the *Shahed-136* as being driven by military requirements and financial considerations, Western analysts have also commented on the effectiveness of the Russian drone campaign from early 2023. Only a few months prior, some analysts had warned that Russia—if helped by Iranian drones and missiles—might well be able to create an “offense-dominant regime” vis-à-vis Ukraine.⁵⁷ Under such a regime, even if Ukraine were to intercept successfully 80-90% of the weapons, a 10% penetration could cause major disruptions to its critical infrastructure, leading to the country's gradual demoralization and depopulation, so the warning went. A few months later, however, it appeared that Ukraine had persevered through the winter months more successfully than many had anticipated.

As military historian Lawrence Freedman noted in April 2023, the Russian drone campaign against civilian facilities “now seems to have abated because it achieved nothing of strategic value.”⁵⁸ Just prior to this, Ukraine announced that it was resuming energy exports for the first time since October 2022.⁵⁹ Russian propagandists on state TV begrudgingly admitted to the failed effort to disrupt Ukraine's energy infrastructure through the winter and to drive up prices for European households.⁶⁰ Still, the Ukrainian military has acknowledged that *Shahed-136s* have effectively struck armor and artillery systems in the Kharkiv region,⁶¹ and since spring 2023, analysts have noted the increasingly frequent employment of Iranian drones against military targets in Ukraine.

Russian Reactions

The Russian government has never admitted to receiving Iranian-made UAVs and has instead characterized Western and Ukrainian allegations in this regard as “speculative and artificial”⁶² and as constituting “disinformation.”⁶³ Tajikistan similarly denied that Iranian-origin drones were being produced on its territory for export to Russia.⁶⁴ Russian officials have also argued that the UN Secretariat does not have a mandate to order an investigation into the alleged drone transfers as

⁵⁶ Edmonds and Bendett, *Russia's Use of Uncrewed Systems in Ukraine*.

⁵⁷ The Jamestown Foundation, Webinar, “Russia's Iranian Drone Offensive Against Ukraine,” November 8, 2022, <https://www.youtube.com/watch?v=nVqMpNWj8LI>.

⁵⁸ Lawrence Freedman, “Time for Ukraine's Offensive?,” *samf.substack.com*, April 16, 2023, https://samf.substack.com/p/time-for-ukraines-offensive?r=15i4j0&utm_campaign=post&utm_medium=email.

⁵⁹ “Russian Offensive Campaign Assessment, April 8, 2023,” *Institute for the Study of War*, April 8, 2023, <https://www.understandingwar.org/backgrounder/russian-offensive-campaign-assessment-april-8-2023>.

⁶⁰ Anton Gerashchenko (@Gerashchenko_en), “Russian propagandist complains that Europeans didn't freeze in winter,” Twitter, March 2, 2023, 3:43 AM, https://twitter.com/Gerashchenko_en/status/1631259048384372739.

⁶¹ Edmonds and Bendett, *Russia's Use of Uncrewed Systems in Ukraine*, p. 33.

⁶² “Statement by Permanent Representative Vassily Nebenzia at UNSC briefing under agenda item ‘non-proliferation,’” Permanent Mission of the Russian Federation to the United Nations, December 19, 2022, https://russiaun.ru/en/news/191222_sc.

⁶³ “Polyanskii nazval dezinformatsiei obvineniya v eksporte bespilotnikov Iranom v Rossiyu,” *Tass*, October 19, 2022, <https://tass.ru/politika/16103481>.

⁶⁴ “Tadzhikistan oproverg soobshheniya ob eksporte v RF sobiraemykh v strane iranskikh BPLA,” *Tass*, October 30, 2022, <https://tass.ru/mezhdunarodnaya-panorama/16196161>.

demanded by Western states.⁶⁵ Should the Secretariat proceed with an investigation regardless, Russian officials have warned, Moscow would be forced to “reconsider” its engagement with the organization.⁶⁶ Russian officials have also alleged that Western states, by accusing Iran of supplying *Shahed-136*, are trying to draw the Islamic Republic into the conflict over Ukraine as a participant.⁶⁷

Meanwhile, Russian military analysts and relevant Telegram channels have discussed the use of the *Shahed-136*, albeit in a very truncated form. Channels chronicling the Russian campaign in Ukraine, including the PMC Wagner-affiliated “Grey Zone” and “Reverse Side of the Medal,” have featured some content showing or openly discussing *Shahed-136* use.⁶⁸ Some military bloggers, amongst them Ilya Kramnik and Denis Fedutinov, have also openly commented on the *Shahed-136*.⁶⁹ That such commentary is sensitive, at least on state media, became clear during an episode involving one of Russia’s foremost defense experts, Ruslan Pukhov of CAST. On October 19, 2022, Pukhov appeared live on a TV show hosted by *RBK TV*. Minutes before his appearance, the hosts mentioned that the West was accusing Iran of supplying Russia with *Shahed-136* drones. Pukhov then came on stage, greeted the hosts, and — without realizing that he was already on air — instructed them not to lean too much on the Iranian topic: “Let’s not rock the boat too much... We all know they’re Iranian, but the government won’t admit it.”⁷⁰ During the same interview and in subsequent appearances, Pukhov also bemoaned Russia’s own lack of strategic UAVs and recommended their procurement from third countries, explicitly mentioning Brazil, China, India, and South Africa, but not Iran.⁷¹

And yet, while Chinese components have been found in Iranian combat drones shipped to Russia, Beijing has not yet itself supplied Moscow with combat drones (though some media reporting suggests that such supplies were discussed).⁷² There might be several reasons for this, including Chinese restraint (in light of Western warnings against weapons transfers to Russia); an aversion among Russian drone manufacturers to import Chinese systems for fear that the domestic drone technology could be overlooked, and—perhaps most importantly—the fact that China, unlike

⁶⁵ “Strany Zapada v OON prosyat rassledovat’ primeneniye bespilotnikov na Ukraine,” *Tass*, October 21, 2022, <https://tass.ru/mezhdunarodnaya-panorama/16124225>; “Postpredstvo RF: sekretariat OON ne mozhet rassledovat’ vopros o BPLA na Ukraine,” *Tass*, October 21, 2022, <https://tass.ru/politika/16125333>.

⁶⁶ “Rossiya mozhet peresmotret’ otnosheniya s Sekretariatom OON pri rassledovanii o BPLA,” *Tass*, October 27, 2022, <https://tass.ru/politika/16166051>.

⁶⁷ “Gavrilov: SShA pytayutsya prityanut’ Iran v kachestve storony konflikta na Ukraine,” *Tass*, October 21, 2022, <https://tass.ru/politika/16125287>.

⁶⁸ See these posts on the GREY ZONE and RSOTM Telegram channels: https://t.me/grey_zone/14992; <https://t.me/rsotmdivision/1842>.

⁶⁹ See Ilya Kramnik’s Telegram channel: <https://t.me/kramnikcat/2479>; Denis Fedutinov, “Chto takoe barrazhiruyushhie boeprisy, i pochemu ikh vse chashhe ispol’ zuyut v boevykh deistviyakh,” *profile.ru*, October 13, 2022, <https://profile.ru/military/chno-takoe-barrazhiruyushhie-boeprisy-i-pochemu-ih-vse-chashhe-ispolzujut-v-boevyh-dejstviyah-1179108/>.

⁷⁰ “The brain fog of war: ‘We all know they’re Iranian, but the government won’t admit it,’ Russian arms expert blurts out on live TV,” *Meduza*, October 21, 2022, <https://meduza.io/en/feature/2022/10/21/the-brain-fog-of-war>.

⁷¹ “Voennyi ekspert Puhov posovetoval gde vzyat’ bespilotniki dlya fronta: video,” *mk.ru*, November 25, 2022, <https://www.mk.ru/video/2022/11/25/voennyi-ekspert-pukhov-posovetoval-gde-vzyat-bespilotniki-dlya-fronta-video.html>.

⁷² “China Reportedly Negotiating with Russia To Supply Kamikaze Drones,” *Der SPIEGEL*, February 23, 2023, <https://www.spiegel.de/international/world/the-war-in-ukraine-china-is-reportedly-negotiating-with-russia-to-supply-kamikaze-drones-a-13909157-4740-4f84-830e-fb3c69bc1dff>.

potentially Iran, is not comfortable with letting Russia reverse-engineer its drones.⁷³ Still, Russia has procured a large number of *commercial* (quadcopter) drones from China for ISR purposes, and the Chinese-made DJI Mavic rapidly became among the most sought-after and popular ISR platforms in the war. Indeed, as CAST has noted, Russia has become critically dependent on China for the supply of both “Mavic-like” small UAVs and their components.⁷⁴

Factors Shaping Russia’s Pre-Pattern Break Acquisition and Use of Combat UAVs

Drivers: In the period *prior* to Russia’s full-scale invasion of Ukraine, Moscow’s desire to speed up the domestic development of combat UAVs was embedded in a broader effort to improve its military robotics industry and render it more competitive. Russia’s own use of UAVs for ISR in Syria, and Azerbaijan’s successful employment of UAVs in the October 2020 Second Karabakh War generated important lessons that bolstered the perceived utility of drones from the perspective of Russian military planners. Moreover, Russia’s efforts in the UAV domain also complemented a broader effort to enhance the production of long-range precision-guided capabilities, as analyzed in the preceding chapter. Meanwhile, it was simply not apparent prior to the pattern break that Russia would consider acquiring UAVs on a large scale from foreign suppliers.

Constraints: There were constraints inhibiting Russia’s efforts to step up its UAV game before 2022. The fact that Russian troops had only approximately 2,000 military drones of all types at their disposal across the services and military commands by the beginning of the war against Ukraine is indicative of the challenges. The faster development of a higher number of UAVs appears to have been inhibited primarily by production bottlenecks (much like Russia’s production of PGMs generally). Other constraints included the defense industry’s struggles with manufacturing and procuring key components for autonomous systems, such as microelectronics and engines.

Conclusion: Challenges in Analyzing Pattern Breaks in Real Time

Looking forward, assessing what will happen after the pattern break examined in this chapter is a difficult challenge. Its ongoing nature sheds light on several constraints that policymakers and analysts face in fully appreciating—in real time—an adversary’s pattern, and the drivers and constraints that shape it, regarding the acquisition, threat of use, and use of strategic weaponry.

These constraints became apparent, for example, in mid-May 2023. Though Western analysts had predicted for months that Russia would run out of missiles, Russia launched unprecedented barrages of *Kinzhal*, *Iskander*, *Kalibr*, and *Kh-101* missiles at Ukrainian cities between May 16 and 18. It has also continued to employ the *Shahed-136* in such attacks, though some Western analysts had already written off the *Shahed* campaign as having failed to achieve strategic effect. Amid the “fog of war,” it is inherently difficult to assess what might follow from these events.

There is, on the one hand, an expectation that Russia will now shift to employ the *Shahed* more frequently against Ukrainian military targets rather than civilian infrastructure.⁷⁵ There is also close scrutiny of the reportedly poor performance of Russia’s missile strikes—and musings about its

⁷³ Samuel Bendett (@sambendett), Twitter, June 19, 2023, 8:01 AM, <https://twitter.com/sambendett/status/1670763762205315072>.

⁷⁴ Edmonds and Bendett, *Russia’s Use of Uncrewed Systems in Ukraine*.

⁷⁵ Freedman, “Time for Ukraine’s Offensive?”

implications. For instance, since Ukraine claimed a close to 100% interception rate for the May 16-18 strikes, some observers were quick to suggest ominous implications for Russia's nuclear deterrent, given the dual capability of the intercepted missiles.⁷⁶ Others, however, cautioned against taking Ukrainian claims about interception rates at face value. The episode generated a vivid exchange in the analytical community about what is in fact known about the intercepts and what conclusions can be drawn from them at this time.⁷⁷

It also remains to be seen how well Russia's military-industrial complex will be able to work around sanctions and export controls by relying on legacy stockpiles, third parties, and illicit procurement to continue to produce missiles and UAVs. Sanctions and exports controls are being continuously updated and expanded, while measures against sanctions evasion are being honed. This process will continue for as long as the war lasts—as will Russian efforts to adapt. Calls by Russia's Defense Ministry in early May 2023 for missile production to “double” appear fantastical given present circumstances, yet, previous prognoses that heralded Russia's imminent depletion of its missile stockpiles appeared off the mark, too.⁷⁸

Against this fluid backdrop, there remains considerable uncertainty regarding the “bounds” of the pattern break examined in this chapter. It is not clear, for instance, whether Russia will limit itself to the procurement of *Shahed-136* or whether it will buy additional capabilities, such as ballistic missiles, from Iran. There is also the matter of Iran's reported assistance with materials to help Russia build a drone manufacturing plant in Tatarstan, which could help Moscow ensure a steady supply of such weaponry at low cost. Whether such support will be sufficient in scope to help Russia overcome its longstanding and systemic challenges in UAV production at scale, however, remains to be seen.⁷⁹

Only with hindsight, i.e., once the full scope of Russia's defense purchases from Iran become apparent, will a full analysis of the drivers of and constraints to weapons acquisition be possible. The covert nature of Russia's pattern break, which has resulted in a scarcity of relevant analysis from Russian and Iranian sources, further muddies the waters at present. That said, the available evidence allows for some informed guesses: Since Russia relied on the *Shahed-136* predominantly because they were cheap and available (and, indeed, needed) in high numbers, it is unlikely to pursue its own mass production of similar assets.⁸⁰ Rather, it will continue to import low-cost Iranian strike drones in significant quantities, while concentrating its own efforts on replenishing stockpiles of more

⁷⁶ Fabian Hoffman (@FRHoffmann1), “If I was a Russian nuclear strategist today, I would be very worried.” Twitter, May 16, 2023, 1:45 AM, <https://twitter.com/FRHoffmann1/status/1658393318378577920>.

⁷⁷ See Pavel Podvig (@RussianForces), “A few thoughts about missile defense in the last night's missile attack,” Twitter, May 16, 2023, 2:39 PM, <https://twitter.com/russianforces/status/1658588046676094976>; Dmitry Stefanovich (@KomissarWhipla), “On Kinzhals, Patriots, etc.” Twitter, May 17, 2023, 3:15 PM, <https://twitter.com/KomissarWhipla/status/1658597018598506502>; Jeffrey Lewis (@ArmsControlWonk), “Another problem in 1991 was Iraqi missiles either broke up in flight or badly missed their targets.” Twitter, May 17, 2023, 8:32 AM, <https://twitter.com/ArmsControlWonk/status/1658857951598182401>.

⁷⁸ “Russian defence minister calls for missile production to double,” *Al Jazeera*, May 3, 2023,

<https://www.aljazeera.com/news/2023/5/3/russian-defence-minister-calls-for-missile-production-to-double>.

⁷⁹ It is not fully clear whether Russia will manufacture its own version of the drone at the plant or actual *Shahed* drones assembled from Iranian-provided parts. One report claims that Russia and Iran agreed to a deal that includes multiple phases, from assembly of Iranian-provided components to eventual Russian domestic production. See “Russia Assembles Iranian Drones for Use Against Ukraine,” *IFMAT*, July 5, 2023, <https://www.ifmat.org/07/05/russia-assembles-iranian-drones-for-use-against-ukraine/>.

⁸⁰ As Edmonds and Bendett have noted, were Russia, for instance, to reverse-engineer the *Shahed-136*, doing so would not necessarily address Russia's challenges in drone production at scale. See *Russia's Use of Uncrewed Systems in Ukraine*.

advanced weaponry, including missiles, and of systems like the *Lancet* drone (which has proven effective against Ukrainian military targets).⁸¹ Since Russia has continued, even under sanctions, to demonstrate an ability to manufacture new missiles, albeit at a slower pace compared to the period prior to the war,⁸² it will likely only turn to Iran for ballistic missiles in the event of a significant deterioration of the state of its defense enterprise and/or major setbacks on the battlefield. Meanwhile, it is conceivable that a growing number of Iranian drones may be utilized in combined loitering munition strikes in conjunction with Russia's own systems such as the *Lancet*.

Finally, it is conceivable that the pattern break will extend to include more intangible benefits to both Russia and Iran, such as mutual learning. Iran's drone industry has accumulated experience in acquiring and adapting imported civilian and dual-use technology for its drones, which is a key lesson Russia could be looking to emulate going forward.⁸³ As the Russian-Iranian military relationship continues to transform, mutual learning could also extend to other areas including cyber, artificial intelligence (AI), and conventional and nuclear coercion and deterrence.

⁸¹ For further details on the *Lancet* as an emerging key domestic Russian capability, see: Edmonds and Bendett, *Russia's Use of Uncrewed Systems in Ukraine*.

⁸² Bergmann, et. al., *Out of Stock?*

⁸³ *Ibid.*

CHAPTER FOUR

Pyongyang's Decision to Seek Normalized Relations with the United States

Robert Carlin and Siegfried Hecker

Introduction

In this chapter, we examine the pattern break of the North Korean leader's decision in 1990 to seek normal relations with the United States. We examine the circumstances surrounding that decision, what flowed from it, and importantly, what it tells us about the underlying drivers and constraints shaping Pyongyang's approach to nuclear weapons development. The decision changed the drivers for the acquisition of nuclear weapons from a strictly covert program to a dual-track strategy to pursue both diplomacy and nuclear development. That, in turn, imposed considerable constraints on the North's nuclear acquisition path.

North Korea is widely considered to be an enigma, an information black hole, a font of destabilizing provocations. Reading Pyongyang's intentions has long been both too easy and too difficult: Too easy in the sense that there is a broad but shallow pool of common wisdom used to answer virtually every key question; too difficult in the sense that it is accepted without question that no one can know what the North will do next. In that context, attempting to go beyond the accepted and largely unchallenged explanations and read Pyongyang's mind is a heavy burden. There is barely any space for serious consideration of how Pyongyang views the world, judges its opportunities, and deals with its constraints.

Small in territory and population, hemmed in by large, much more powerful, potentially hostile continental neighbors, and—since the late 1980s—confronting a stable, vibrant democratic and capitalist alternative Korean state, the Democratic People's Republic of Korea (DPRK) has led a perilous existence. Again and again, it seemed from the outside to be on the verge of disappearing, collapsing, or succumbing, yet every time it weathered the storms and staggered on, as annoying as ever to those betting on its demise. To many observers, the DPRK is an illegitimate state with no reason to exist and no claim to international acceptance. By these lights, there is no cause to understand or fashion a long-term policy toward the North because the sole purpose is to compel it out of existence.

For years, the preeminent concern in Washington and Seoul was the possibility of another 1950s-style strike across the border by the North Korean army. The North's aggressive actions in the late 1960s (e.g., seizing the USS *Pueblo* and launching a raid on the Republic of Korea, or ROK, presidential offices in 1968, and the shootdown of a U.S. reconnaissance aircraft in 1969) were continually cited as evidence of how real that possibility was. All the way through the mid-1980s, U.S. and ROK intelligence efforts were geared to providing what was known as warning of attack. Political and economic developments in the North were not seen as important in and of themselves, but for how they affected the military situation on the Korean Peninsula, whether they moved the

warning needle into the red or not. For years, the four-star general in charge of U.S. forces in South Korea was treated as more consequential than the American ambassador. Other than the limited and sterile meetings of the Military Armistice Commission at Panmunjom, there was no U.S. contact with the North and no prospect of any, so understanding Pyongyang was not seen as a means to further diplomatic progress, which was literally inconceivable. The only objective was to block whatever threats the North posed and to uncover its malign intent. If the goal was preventing another attack, and there was no such attack, then the inevitable conclusion was that the current course—and the logic behind it—was working. That meant there was little impetus and less opportunity to refine what scant understanding there was of how the North Koreans saw the world.

During this period, the North's conventional armed force was considered significant enough to be worrisome, but over time its equipment aged, and the Korean People's Army (KPA) fell technologically further and further behind the U.S. and ROK forces arrayed against it. In the air, other than a very limited number of SU-25s and MiG-29s transferred to North Korea from the USSR in 1985, the North Korean air force (NKAF) had only decades-old Russian and Chinese aircraft. Though there was some experience to draw from as a result of North Korean pilots having flown earlier in support of North Vietnam, Syria, and Egypt, the NKAF into the 1980s was so limited in resources that pilots had little flying time. In addition to an old but still potent artillery force within striking range of Seoul, the North was producing a growing force of theater missiles—Scuds and Nodongs.

At that time, the North had no nuclear force and not yet even the means to produce nuclear weapons. That would change, and in the late 1980s, the ground shifted with the development of a North Korean nuclear capability.

Concerned that its indigenous reserves of coal would run out and, certainly after the 1973 oil crisis, loathe to be dependent on external sources for energy, Pyongyang sought to develop a civilian nuclear energy and technology program. The early nuclear energy program was supported by the Soviet Union with the condition that it remain dedicated to peaceful purposes. It had constructed a nuclear research center at Yongbyon in the early 1960s, and in 1965 obtained a small research reactor (the IRT-2000) from the Soviet Union. North Korea joined the International Atomic Energy Agency (IAEA) in 1974 and after much prodding from Moscow signed the Nuclear Non-proliferation Treaty (NPT) in 1985 in return for Soviet agreement to supply the North with four light water reactors, which fell through when the USSR broke up.

In the early 1980s, what had been a limited nuclear program was expanded by a concentrated effort to put in place the foundation for a nuclear weapons option. Pyongyang severely limited access for IAEA inspectors and the Soviet technical teams at the Yongbyon nuclear complex that were involved with the IRT, allowing the North to clandestinely construct a plutonium production complex in the closed part of Yongbyon. The North undertook indigenous construction of a 5 MWe graphite-moderated reactor (a reactor type well-suited for producing plutonium to fuel a nuclear weapon) and to carry out high-explosive tests suitable for developing the necessary implosion device. Before the reactor was completed and started operations (in 1986), construction began on a reprocessing facility, which was necessary to separate the weapons-grade plutonium from the reactor's spent fuel rods.

We can only conjecture as to why the North began a weapon development program at this time. In the 1960s, North Korean leader Kim Il Sung had asked the Soviets and later the Chinese for help with nuclear weapons but was refused. By the 1980s, when the North began an indigenous effort, the United States' nuclear weapons had already been stationed in South Korea for over 20 years. The North was clearly pursuing the plutonium path to the bomb, but we have no way of knowing what size nuclear arsenal Kim was pursuing. The projected capacity of its planned plutonium production reactors suggests that at the early stages planning may have been for a large arsenal.

By 1989, the North had an operational graphite-moderated 5 MWe reactor, a plutonium reprocessing plant, and fuel fabrication facilities at Yongbyon. Under construction and still several years from operation was a much larger 50 MWe reactor that, from all appearances, was meant to produce plutonium for bomb fuel. Nearby at Taechon, preliminary construction was underway for an even larger reactor, 200 MWe, most likely meant to generate electricity but also capable of producing large amounts of plutonium bomb fuel.

For the United States simply to recognize the existence of this new threat was not sufficient. It became an article of faith in Washington that it was critical to stifle this nuclear infant before it climbed out of its crib. For that, diplomatic engagement with the North was, finally, seen as crucial. Yet successful diplomacy required at least a modicum of understanding about the North's goals. Washington and Pyongyang would each need better insights into the other's position, drivers, and constraints. That the North's nuclear arsenal grew from zero weapons in 2000 to around fifty in 2022 suggests both sides fell short in understanding the other at crucial junctures.

Initial Pattern

For decades, there were a number of constant, basic policy tenets that defined the North's stance on key issues: demanding a U.S. troop withdrawal; the centrality of reunification; and winning the competition with the ROK. These were interconnected parts of a whole, bound together by an overall and coherent strategic logic. Each was a card Pyongyang played at various times in the ebb and flow of negotiations, first with Seoul and then with Washington.

US troops. For years, Pyongyang's immutable bottom line was that U.S. troops had to leave the Peninsula before any progress could be made in reducing inter-Korean tensions. In the mid-1980s, however, the North started to modify that approach. It moved from the idea that a complete U.S. troop withdrawal must be the first step for inter-Korean progress to proposing that a U.S. withdrawal could, instead, be the culmination of the process. On paper, this was to occur in stages, in line with an agreed drawdown in the size of the North and South Korean armies, and with a date certain for the final U.S. withdrawal. In May 1990, Kim publicly reiterated this more flexible approach on the U.S. troop presence, noting that "if the US cannot completely withdraw the U.S. forces stationed in South Korea all at once, it could withdraw them in stages."¹ The shift was notable not because Pyongyang expected its new formulas on U.S. troops to be accepted, but for the broader calculations they signaled about how to square opposition to a U.S. troop presence on the peninsula with a new effort to engage the ROK, and do so sooner rather than later. Crucially, however, and even with the new position, Pyongyang did not pull the demand for a U.S. withdrawal completely off the table.

¹ "Let Us More Highly Display the Superiority of Our Country's Socialism—Comrade Kim Il Sung's Policy Speech to the First Session of the Ninth DPRK Supreme People's Assembly," *Rodong Sinmun*, May 25, 1990, p. 3.

Reunification. Changing the definition of what constituted reunification was key to any flexibility Pyongyang had in order to deal with a range of other domestic and foreign policy issues. The definition of reunification was crucial—it could be a stranglehold on policy or a gateway. While the imperative for reunification was long a center piece of the North’s propaganda, by the 1980s it seemed to be less and less the main engine driving policy. In 1980, at the 6th Workers’ Party Congress, Kim Il Sung significantly changed the definition. Previously, Pyongyang had maintained that a North-South confederation would be a way station on the road to reunification. At the Congress, Kim declared—albeit in a typically obscure formulation—that a confederation would itself constitute reunification. Five years later, the North further modified the definition, moving it from a traditional territorial or organizational merger to a mystical concept of reconnecting the bloodlines of the Korean folk. As with the position on U.S. troop withdrawal, these shifts on reunification were not important for what they proposed literally but for the room they implicitly gave the North to accept coexistence with a separate government in the South, one that exercised independence in both domestic and foreign policy.²

Engagement with Seoul. Connected with the changing definition of reunification, the pace of inter-Korean contacts picked up in the mid-1980s. In order that anti-government demonstrations in the South not interfere, Pyongyang began urging restraint on the part of opposition forces, primarily students.³ After the Seoul Summer Olympics in 1988, there was considerably more progress, leading in short order to a number of inter-Korean agreements.

Pattern Break: Pyongyang’s Decision for Normal Relations with the United States

At the same time that the North’s military nuclear program was taking shape, the surrounding political and strategic environment was, from Pyongyang’s standpoint, in dangerous flux. Even as the North sought to engage South Korea and experiment with economic reform policies beginning in the mid-1980s, the bankrupt Communist bloc was dazzled by the prospect of South Korean trade and increasingly being bought out by South Korean money. Pyongyang had no cards to play against the South’s financial lures. It did what it could to stiffen the spine of the Soviet Union in hopes that would limit the damage and slow the bloc’s drift toward Seoul, but after the Olympics—which the entire Eastern bloc attended—it became clear to the North Korean leadership that it faced two stark choices: watch with frustration as the situation got worse or make fundamental policy adjustments.

For all their fierce rhetoric, the North Koreans are basically pragmatic. They have never been as ideological as they sometimes sound. A Chinese-style Great Cultural Revolution was never in the cards for the North. In the late 1980s, rather than continue to fight a losing battle, Pyongyang attempted to deal with the emerging reality of bloc governments recognizing the ROK by retreating to what seemed a more defensible position: It lowered its demands. Choosing Hungary—the furthest along in opening ties with the ROK—as a target of opportunity, the North strongly denounced Budapest but at the same time laid out what it hoped would be principles other bloc countries could accept in limiting their political relations with Seoul.⁴ Yet here Pyongyang faced a

² “Pyongyang’s Evolving Approach to Inter-Korean Dialogue,” Foreign Broadcast Information Service (FBIS) Analysis Report, December 6, 1985.

³ “Pyongyang Maintains Cautious Posture Toward Situation in South,” FBIS Analysis Wirenote, June 29, 1987; also see “Korea: Mixed Signals for North on Use of Violence,” FBIS Trends, June 22, 1988.

⁴ “North Korea-Hungary: Downgrading Diplomatic Relations,” FBIS Trends, February 8, 1989.

dilemma of its own making. It was deepening its own public engagement with the ROK as a legitimate interlocutor even as it sought to limit similar political contacts between East European governments and Seoul. It couldn't work, and it didn't. In December 1989, the Romanian dictatorship of Nicolae Ceaușescu fell. Kim Il Sung and Ceaușescu had never been as close personally as sometimes imagined by outsiders, but both had shared an independent streak against Moscow's dominance in the bloc, and the footage of the Romanian leader and his wife facing a hastily assembled firing squad can only have been chilling to those in Pyongyang who viewed it. Worse, Romania under Ceaușescu had been one of the holdouts in the bloc against normalizing with the ROK. With that gone, Pyongyang could only hope against hope that Moscow—already, in the North's view drifting in a dangerous direction—would hold firm.

If there was such hope, it was bound to disappoint. When Soviet Foreign Minister Shevardnadze arrived in Pyongyang in September 1990 with the news that Moscow was about to recognize the ROK, the North Koreans exploded in fury. Accusing the Soviets of the worst sort of perfidy (in fact, less than two years before Shevardnadze himself had pledged to the Pyongyang that Moscow “does not have the intention and will not establish relations with South Korea”), the North Koreans warned him that such a move by the USSR would invalidate the two countries' 1961 defense treaty. Under these circumstances, the North said, it would be free to act as it saw fit to protect its interests, pointedly including the development of nuclear weapons (which it did not yet have.)⁵

There is no way of knowing if Shevardnadze's visit was the final straw that pushed Kim Il Sung to make a major break with past policy. But make a break he did. He decided it was necessary to normalize relations with the United States, not merely to balance Moscow's and Beijing's moves to establish ties with the ROK but more fundamentally to use ties with Washington as protection against the existential threat, the North's two big neighbors now seemed to pose to the DPRK. Neither Boris Yeltsin nor Deng Xiaoping could, in Kim's eyes, be trusted.

Thinking along those lines appears already to have been entrained in the North as the trends became increasingly obvious and the fire crept toward Pyongyang's door. In July 1990, a North Korean delegation had traveled to Stanford University, invited by Professor John Lewis of the Center for International Security and Cooperation, to attend a three-way session with Stanford experts (including Professor William Perry and Ambassador James Goodby) and South Korean delegates (including the future ROK Foreign Minister Han Song Ju and the future Blue House National Security advisor Chung Chong Wook). Two U.S. State Department officers attended as observers (the head of the Department's Korea Desk and the chief of the North East Asia Division of the Department's Bureau of Intelligence). Heading the North's delegation was Li Hyong Chol, who would later play an important role in formal U.S.-DPRK engagement. For this meeting, Li wore his hat as director of the foreign ministry's Institute for Disarmament and Peace, an organization created to allow ministry officials to interact with Americans. The North Koreans listened carefully to the presentations. They had been sent as part of a larger effort to learn firsthand about the United States in preparation for more extensive engagement with Washington. This was a hallmark of the North's approach to new policies: prepare them carefully, discuss them internally, and test their

⁵ “Shevardnadze Visit Illustrates Deterioration in Ties,” FBIS Trends, September 19, 1990. Subsequently, Pyongyang publicized the text of a diplomatic memorandum (apparently similar to what it had told Shevardnadze) warning of dire consequences should the USSR recognize the ROK. See “DPRK Retaliates for Soviet Aide's Remarks on ROK Ties,” FBIS Trends, September 26, 1990.

efficacy. Most clearly seen in preparations for new economic policy, this was also a practice followed in foreign policy.

In September, inter-Korean talks reached the point that prime ministers of the two Koreas exchanged visits to each other's capital. It was exactly at this moment—when the North was in its most exposed position, dealing formally with the ROK and in need of at least the appearance of support from the USSR—that Shevardnadze arrived with the unwelcome news that Moscow would recognize the ROK.

Not long after, in October, Pyongyang moved to open channels with Japan. Japan-North Korea relations had been through warming phases several times in the past, but this was not an isolated move. Instead, it was part of the larger effort to reset DPRK policy across a wide front in order to reinforce the strategic decision to move toward the United States. The move toward Japan ended up being clumsily handled on Pyongyang's part, but that was a matter of bad execution, not of intent.

In December, North Korea took the major step of informing the United States of its new policy. DPRK officials (including Li Hyong Chol, who had attended the Stanford meeting) told an American visitor to Pyongyang that the North had made an important policy decision: to normalize relations with the United States and Japan; to coexist with South Korea, and to institute economic reforms. In fact, parts of that decision were already being implemented, i.e., moving to improve ties with Japan and accepting South Korea as a legitimate governing entity on the peninsula. What remained was to engage the United States.

Pyongyang redoubled its efforts in 1991 with the ROK, which reciprocated fully. After decades of adamant opposition to the two Koreas joining the United Nations, Kim Il Sung finally relented—it was either that or watch Seoul enter unilaterally since neither Moscow nor Beijing would oppose—and in August both the DPRK and the ROK became full members.⁶ Inter-Korean talks moved ahead to the point that in December the two prime ministers signed the “Agreement on Reconciliation, Non-Aggression, Exchange and Cooperation,” the result of five rounds of talks between the prime ministers that began in September 1990. At the same time, Seoul and Pyongyang—with significant kibbitzing from official and non-official U.S. actors—reached an agreement on a “Joint Declaration” for denuclearizing the Peninsula. Neither the basic agreement nor the denuclearization declaration had a long half-life; nevertheless, both ended up being important as symbolic footbridges on the way to a broader U.S.-DPRK agreement.

At the same time as this forward movement in North-South talks, Pyongyang was pushing for a senior-level meeting with the United States. Arrangements were made for that to take place in January 1992 in New York, with a high-ranking North Korean delegation meeting with Undersecretary of State Arnold Kanter. In preparing for the meeting, Washington was focused on the nuclear issue, and the U.S. delegation left Washington on the train under orders not to suggest to the North that this would be anything other than a one-time meeting. By contrast, the DPRK delegation, led by Kim Yong Sun, a party secretary who was close to Kim Jong Il—Kim Il Sung's son and chosen successor since 1980—needed the meeting to open the door to start the process of

⁶ “DPRK, in Shift, Decides to Apply for Separate UN Membership,” FBIS Trends, May 30, 1991. Shifting the stance on UN membership faced considerable opposition from Kim Il Sung, and those in favor of the move had to marshal the strongest possible arguments deployed in the most effective way to get Kim to agree.

normalizing relations with the United States.⁷ During his presentation, Kim Yong Sun signaled the fundamental change in the North's approach by telling the Americans that U.S. troops could stay in Korea to help protect the peninsula from a rising Japan. This went right over the heads of most of the American delegation and never received the attention it deserved as the key signal that it was—i.e., that Pyongyang was accepting a long-term, essentially open-ended, presence of U.S. troops, a decision that had implications all along the line for DPRK policy. Some in the U.S. delegation argued that Kim Yong Sun's comment on U.S. troops was an attempt to split the United States from Japan. In fact, it had nothing to do with Japan.

1993-1994: A Tough Passage

From ground level on the U.S. side, the next two years were difficult, with what seemed to be sudden and surprising spurts ahead in U.S.-DPRK negotiations intermixed with periods of stalemate and great tension. Yet the larger pattern—seen through the smoke—was never broken. Internal DPRK decisions, still not fully understood, several times drove the situation to the brink. Each time, the North pulled back to the path of improving relations with the United States. In the summer of 1992, possibly at a time when Kim Jong Il was tasking the foreign ministry to research ways to withdraw “legally” from the NPT, the North urged the United States to hold a follow-up to the Kanter-Kim meeting. That request was rejected on the grounds that Washington had told the North that January 1992 had been a one-time meeting, and it was important to hold to that position. By the end of the year, the plans were coming together in Pyongyang for withdrawal from the NPT on the grounds of the treaty's Article X:

Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.⁸

The common interpretation is that this move was in reaction to the IAEA's tough stance in response to Pyongyang's failure in the autumn to cooperate, coupled with the North's effort to continue to hide evidence of reprocessing. Decisions in Vienna at the IAEA Board of Governors may well have made the DPRK leadership more adamant, but the decision to withdraw had apparently already been taken, likely at the urging of Kim Jong Il. The son's decision was a sharp swerve away from Kim Il Sung's strategic decision in 1990 to move to normalize relations with the United States. Kim Jong Il knew his chosen course was so dangerous that he was reportedly out in the field with the army when the withdrawal announcement was made on March 12, 1993, expecting

⁷ The North's delegation probably should have been led by First Vice Foreign Minister Kang Sok Ju. Kim Yong Sun and Kang were bitter enemies. Their rivalry was personal, not over policy. Unbeknownst to Washington when it requested that Pyongyang send Kim Yong Sun to the Kanter meeting, the United States was stumbling into an ongoing battle in the DPRK leadership. At a subsequent U.S.-DPRK meeting in June 1993, one of the first questions the North's delegates asked during the coffee break was, “Why did you ask for Kim Yong Sun in 1992, don't you realize what an important person First Vice Minister Kang is?” (From authors' personal files.)

⁸ “Treaty on the Non-Proliferation of Nuclear Weapons.” Opened for signature July 1, 1968. Treaty Series: Treaties and International Agreements Registered of Filed and Recorded with the Secretariat of the United Nations 729, no. 10485(1974): 161-299. <https://treaties.un.org/doc/Publication/UNTS/Volume%20729/v729.pdf>

a U.S. military response. This was not, as some speculated, a ploy to get the United States to talks. Harebrained, perhaps, but not a ploy.

Quickly, the North's foreign ministry worked to convince the younger Kim through daily reports of foreign reaction that not only would there be no military response, but that the international community was asking the North to return to the NPT. After what were judged in Washington to be necessary diplomatic maneuvers to demonstrate U.S. ire and enough seriousness of purpose to overcome domestic political and bureaucratic opposition, low-level U.S.-DPRK contacts (in New York) began, quickly resulting in agreement for a high-level meeting on June 2. That meeting convened on the top floor of the U.S. Mission to the United Nations. After what seemed to the Americans a few rough days, the two sides worked out a joint statement—the first such document between the United States and the DPRK since the 1953 Korean Armistice Agreement—suspending the North's NPT withdrawal at the last minute and opening the way for more extensive talks. The latter was exactly what Pyongyang wanted and what the North's delegation had been sent to obtain.

Talks then moved to Geneva in July for alternating sessions at the two sides' diplomatic Missions. At the first meeting in its Mission, the North presented the major concession which became the central mechanism that eventually allowed final agreement on the October 1994 Agreed Framework. The North, feigning surprise that its graphite-moderated reactor had caused international concern, offered to give it up in return for U.S.-supplied light water reactors (LWRs). As with the North's gauzy signal on U.S. troops at the January 1992 talks, the broader implications of this offer to trade one set of reactor technology for another again was largely lost on Washington. It would, indeed, have ramifications for the North's ability to produce plutonium for bombs, and it would certainly have ramifications for the North's economy. More fundamentally, Pyongyang calculated it would mean years of engagement by the United States to see through the construction of the LWRs. And even more important, it signaled that a long-running internal battle in Pyongyang over the issue of reliance on outside sources of energy had been decided. By opting for light water reactors, Pyongyang was opening itself to years of dependence on the United States for reactor fuel, technology, and training.

From that point, it took three negotiating sessions (in August, September, and October 1994) to work out the Agreed Framework. The period in between, from July 1993 to July 1994, however, turned out to be difficult and to some extent dangerous. Washington spent the seven months from August 1993 to March 1994 trying to reconcile positions with the IAEA and the ROK while at the same time dealing with difficult North Korean tactical maneuvering. Soon enough, what was initially a relatively benign if frustrating period turned dangerous. In the early spring, Kang Sok Ju communicated with his counterpart, Ambassador Robert Gallucci, asking that the United States reengage soon. Similar to the case in the summer of 1992 when the North asked for another meeting and was rejected, Kang's request may well have been an effort to outflank planning in Pyongyang. The foreign ministry was clear that Washington considered unloading the operating 5 MWe reactor to be a red line and knew crossing it would be dangerous. Indeed, something very dangerous did follow: In April the North informed the United States that it was going to unload the reactor, and by mid-May, the IAEA reported the unloading had begun. The North invited the IAEA to observe but said the agency could play no part in selecting the rods or the order in which they were withdrawn, a meticulous process that would have allowed progress in determining the reactor's operating history. Rather than observe under those constraints, the IAEA at first refused to attend. Eventually, the

agency was persuaded to watch, but by then unloading was proceeding at an unexpectedly fast pace, and the rods were thoroughly scrambled.

The details of what happened next have been described many times in books, articles, and public presentations. Those accounts focus on the dangers of the North Korean action and the American response. The way it is normally recounted is that the North took a provocative action, the United States responded by edging toward a military strike, and if Jimmy Carter hadn't stepped in, there would probably have been a war. Lacking has been any focus on how quickly the North Koreans got back on track for the next set of talks in Geneva and even proposed a summit between Kim Il Sung and his ROK counterpart, President Kim Yong Sam.

One key datapoint that puts the events of the spring of 1994 in perspective is the description by a well-informed observer of Kang Sok Ju's persistent warnings internally about how dangerous a decision to withdraw the fuel rods would be, until finally he was told there would be no more arguing; that the decision had been made; and that the job of his ministry was to keep the United States from overreacting.⁹ Kang essentially began that effort even before Carter arrived in Pyongyang, laying out a new position in a June 3 statement issued in his name (an unusual attribution for foreign ministry pronouncements) and then repeating it in discussions with visiting U.S. journalist Selig Harrison. Thus, as dangerous as the North's action in unloading the fuel rods was, it needs to be understood in consideration of how Pyongyang quickly and decisively returned to the dialogue with the United States, exactly in line with Kim Il Sung's original 1990 decision.

U.S.-DPRK talks resumed on July 7 in Geneva but adjourned before the start of the second day when news reached the delegations that Kim Il Sung had died on July 8.¹⁰ Negotiations started again in August, with the North Korean delegation clearly intent on making progress under the new leadership of Kim Jong Il. At the August session, the North was already shifting to a new position, which it revealed more fully in September—i.e., agreeing to what was then considered a major issue, the timing of IAEA special inspections and the linkages with progress on the LWRs. Hammering the text into shape in October was a relatively smooth process, with the two sides alternating concessions—mostly simple word changes. The biggest hang up did not involve the United States but South Korea, and the formulation that broke the deadlock was the North finally accepting in the framework document mention of the moribund 1992 North-South Non-Nuclear Declaration. When, near the end of the negotiations, Ambassador Gallucci asked Kang Sok Ju if the North would really follow through with its obligations laid out in the final stages of the agreement and the confidential minute, Kang answered with stunning clarity: It would depend, he said, on how U.S.-DPRK relations had developed at that point.

Kang was treated as a hero when he returned home from Geneva. He had achieved the important first step in the strategic decision to seek normal relations with the United States. Looking ahead,

⁹ Authors' personal files.

¹⁰ Because Kim Il Sung died on July 8th, while U.S.-DPRK talks were just resuming in Geneva, the other half of the North's policy—moving quickly to an inter-Korean summit—gets little attention. Yet until Kim Il Sung died, all signs were that the summit would take place without delay after preliminary discussions at Panmunjom—discussions that went smoothly—on logistics and agenda.

Kim Jong Il would not have missed what he had signed up to do in the Agreed Framework, and if things moved the right way, what he might reap from it.

Analysis

Kim Il Sung made a strategic decision some time before December 1990 to completely shift the center of gravity of North Korea's outlook and alignment. There had been signs earlier in the year that changes in policy were being discussed and tried out, but these were more likely tentative probes rather than the result of a final decision. However it came together, the decision was a major pattern break, not merely a continuation of ongoing trends. It was likely driven by Kim's desire to create a benign external environment so the North could deal with the economic and security challenges of the Soviet collapse and China's economic opening. Beyond doubt, Pyongyang expected news of its decision to engage the United States to be carried to the Clinton administration. Yet, the message was largely lost on the administration. The messenger the North chose was not highly regarded in Washington. In any case, to recognize such a significant development in DPRK policy would have meant Washington would have had to shed layers upon layers of accumulated distrust and misunderstanding about North Korea. Moreover, it would have necessitated diverting, or at least refining, Washington's laser focus on the nuclear issue.

Signals from Pyongyang are rarely unambiguous and to Washington policymakers, the earliest signs were not nearly clear or consistent enough to change minds. Crosscurrents and countercurrents are normal given the range of domestic and external issues the North Korean regime must deal with. Especially in the 1989-92 period, the situation was so turbulent—for both North Korea and the United States—that it was difficult to make the case to U.S. policymakers that the North was striking off on a new path. Washington lacked experience dealing with the North and had no reason it could imagine to develop strategic empathy with Pyongyang. Even after the North tried to reinforce signals of its new strategic approach, Washington had trouble seeing the signal from the nuclear noise.

The basic problem was different weights given by the two sides to the North's nuclear program. For Pyongyang, the nuclear issue was important but at that point was not the centerpiece of the leadership's calculations. Instead, though it may have been high on the list, it was only one of several, often conflicting, priorities. Since the mid-1980s, the North had pursued a surprisingly steady policy of economic experimentation and opening. Expanding dialogue with Seoul resulted in increased acceptance of the legitimacy of the ROK government (if not yet recognition of the ROK as a sovereign entity) that, in turn, was linked to a looser definition of the nature of reunification, permitting greater freedom to engage South Korea and others (e.g., Japan). All of that was underpinned by gradual acceptance of a longer-term presence of U.S. troops in South Korea.

By contrast, once U.S. intelligence discovered the North's clandestine nuclear construction program, it became of paramount importance for Washington. None of the other developments in North Korean policy altered the *technical* reality of the nuclear program, and because details were lacking, the worst-case analysis of the program and Pyongyang's intentions was generally accepted. There was little effort or inclination at the policy level to look at a larger framework within which the nuclear program fit. Any debate in Washington on what to do with Pyongyang was thus confined to a constrained space.

Complicating any effort in Washington to read Pyongyang's mind was the stark reality that the North Koreans themselves were constrained by their firm belief that they could never afford to be seen as giving in or showing weakness in the face of external pressure, whether from an ally or an adversary. This was not new—it was a trait that befuddled and annoyed Soviet bloc diplomats for decades. Moreover, the North saw the world in terms of structure and linkage rather than a series of isolated problems to be solved separately. Every move was seen as setting precedents in another area. Any false move, it seemed, could pull them down a slippery slope. As a small, weak country, the North was convinced it could never afford to lose its balance, nor trust its fate to external forces. The result was that, from the outside, there often seemed to be confusing episodes of crabwise or backward movement even after a decision had been made, with opposing internal forces trying to win back lost ground. As a result, the North Koreans were often their own worst enemy by making it painfully difficult for Washington to see the new, strategic line cutting through the tactical brambles. Another serious constraint for the North was that, by the 1980s, its military was losing ground to the South, and it was enormously overmatched by that of the United States.

On the U.S. side, focus on the nuclear issue wrapped around the flagpole of nonproliferation was overriding. The problem was not determining if the North had a nuclear program—it clearly did—but what sorts of steps were sufficient to deal with the problem. The nuclear program turned out to be not one but several problems—proliferation, foreign policy, intelligence, and most fundamentally, distinguishing perception from reality. Washington's focus on the nuclear issue as primarily one of proliferation masked the layers of complexity involved in framing the whole. The key—easier done in retrospect but not impossible at the time—was to understand how what looked like separate streams of policy were not ad hoc reactions to events but parts of a major, decisive shift in policy.

In 1990, when Kim Il Sung made his strategic decision, the nuclear weapons program was in its early stages with the plutonium production complex at Yongbyon and only short-range missiles in the military. At that point, the program no doubt had its defenders in Pyongyang, but it was not yet deeply embedded in DPRK policy. The gas-graphite 5 MWe reactor had operated since 1986, although intermittently and at reduced power. In 1989, it was shut down for 70 to 100 days, raising concerns that the North unloaded the reactor and reprocessed the spent fuel to extract plutonium for bombs. Exactly what transpired at the time remains contested. North Korea declared to the IAEA that it unloaded 89 defective fuel rods that yielded some 90 grams of plutonium oxide (which convert to 60 grams of plutonium metal). Various American sources claimed that the North unloaded the reactor and extracted sufficient plutonium for one or two nuclear weapons.¹¹ Based on what he saw during his 2004 visit to Yongbyon, one of the authors (Hecker) estimates that prior to 1994, when the operating reactor was frozen, the North had extracted no more than one or two kilograms of plutonium, not enough for a bomb.¹²

In addition to its small but growing fissile material production program, the North was testing explosives for nuclear weapons and gathering publicly available material—in some cases, from the IAEA library in Vienna—to support the development of its program. It already had short-range

¹¹ Stephen Engelberg with Michael R. Gordon, "Intelligence Study Says North Korea has Nuclear Bomb," *New York Times*, December 26, 1993, <https://www.nytimes.com/1993/12/26/world/intelligence-study-says-north-korea-has-nuclear-bomb.html>.

¹² Chapter 4. "Would You Like to See Our Product?" in Siegfried S. Hecker with Elliot A. Serbin, *Hinge Points: An Inside Look at North Korea's Nuclear Program* (Stanford: Stanford University Press, 2023).

ballistic missiles (Scuds and Nodongs) reengineered from Soviet designs and suitable to carry small nuclear warheads.

Weapons Development

The North's acquisition strategy for nuclear weapons shifted dramatically after Kim's decision to pursue strategic accommodation with the United States. Implicitly, that decision contained an assumption that, if successful, it would obviate the need to continue to pursue the nuclear weapon option. However, always cautious, the North Koreans no doubt realized that normalization with Washington was not assured and even if possible, would take a long time. The pattern break changed the drivers for acquiring nuclear weapons to a dual-track strategy of pursuing both diplomacy *and* nuclear development—not one or the other, certainly not unless and until the diplomatic option proved successful. Currently available information does not make it possible to say whether that dual track was purely the result of caution by Kim Il Sung or at least in part a consequence of differences between influential forces in the leadership. There was even reporting at the time that Kim was not comfortable with the development of nuclear weapons. The end result was that as long as diplomacy succeeded, the road to acquiring nuclear weapons would be put on a narrow developmental path; if diplomacy stumbled, the road for nuclear development would be widened and the process sped up.

The dual-track strategy imposed considerable constraints on the nuclear acquisition path. The diplomacy track resulted in the signing of the Agreed Framework in 1994. From the U.S. perspective, it was specifically designed to freeze the North's fissile material production, i.e., to stop the production of plutonium for bomb fuel. It did not immediately stop the North's development of nuclear weapons, though from time to time the media and even Clinton administration officials mistakenly made that claim. The framework called for freezing the Yongbyon nuclear complex and giving IAEA inspectors access to its facilities, including the plutonium production reactor and reprocessing facility. The inspectors would be present and monitor the facilities even more closely than would be the case under normal IAEA practice, though here their mandate was to monitor compliance with the framework and not the NPT. To deal with the technical challenges of safely storing the spent fuel removed from the 5 MWe reactor earlier in 1994, American technical teams were also given access to key facilities. Thus, the production of bomb fuel was shut down. Out of sight, though not in direct violation of the Agreed Framework, North Korea continued other nuclear weapons development activities elsewhere.

The acquisition of highly enriched uranium, the second path to the bomb, proceeded very differently from plutonium. North Korea explored uranium enrichment in the 1980s using centrifuges it acquired from Europe. The uranium program was put on the back burner once the plutonium facilities were brought to an operational stage in the early 1990s. In the latter half of the 1990s, while engaged with the United States in the Agreed Framework, the North acquired a few dozen centrifuges from Pakistan's A.Q. Khan. They also acquired materials and equipment from the European black market that had been supplying A.Q. Khan's collaborations with Iraq, Libya, and Iran. The U.S. intelligence community first discovered the centrifuge program during the Clinton administration but could never raise it directly with the North because of concerns by the CIA about the sensitivity of its intelligence operations.

We have no direct evidence, but weaponization activities—that is, designing, building, and testing nuclear devices—were likely little changed after the pattern break. North Korea was in the early stages of nuclear weapons design in the late 1980s and, to the best of our knowledge, continued covertly—outside of Yongbyon—during the 1990s, including during the Agreed Framework period. These activities are virtually undetectable without a strong physical presence throughout the country, which the United States did not possess. In their 2023 book *Hinge Points: An Inside Look at North Korea's Nuclear Program*, authors Hecker and Elliot Serbin reconstruct the weaponization efforts the North must have pursued to explain what Hecker found and heard during his visit to Yongbyon in 2004.¹³ Hecker concluded that the North continued its nuclear weapon design and engineering, plutonium metallurgy and fabrication, research on high explosives, detonators, and neutron sources. North Korea also likely continued to prepare for eventual underground nuclear testing. The North's nuclear weapons design efforts may have also been aided by information about early Chinese bomb designs provided by Pakistan's A.Q. Khan.

The pattern break followed by the Agreed Framework negatively impacted the North's long-range missile development and acquisition. As described in *Hinge Points*, the turn to diplomacy in the early 1990s, however, did not slow the North's short and medium-range missile development. These delivery systems were justified as conventional armaments necessary for any country's defense. By 1986-87, before the pattern break, the North had entered serial production for versions of the Soviet Scud-B missiles and exported them to Iran. By 1999, North Korea was estimated to have produced 600 to 1,000 Scud-C missiles with a range of 500 km and improved guidance system, of which some 300 to 500 were believed to have been exported to Iran, Syria, and Libya for hundreds of millions of dollars. The Scud-C was superseded by the substantially more capable Nodong-1, a medium-range missile with a range of 1,200 to 1,500 km giving North Korea the ability to strike Japan for the first time. North Korea used its extensive illicit procurement network to buy components for the missiles and transporter erector launchers (TELs), which enabled mobile missile launching platforms. Although these theater-range missile developments were predominantly pursued for conventional military use (and export), it appears that the North had also made a decision early on that nuclear warheads, once developed, would be delivered by missiles rather than bombers.

In the mid-1990s, North Korea also began to develop longer-range rockets, both for potential space flight and longer-range military missiles. The North's rapid sequence of missile development was possible only with considerable foreign technical assistance, primarily from the Soviet government. As the Soviet Union collapsed, numerous missile design and manufacturing institutes and hundreds of missile scientists and engineers from former Soviet states began to sell their services abroad and found eager buyers in North Korea. In August 1998, North Korea launched a three-stage rocket meant to put a small satellite in orbit. The third stage failed, but the fact that staging succeeded on this first try demonstrated how far the North had come on its missile program.

As far as Pyongyang was concerned, the engine of the Agreed Framework was not the denuclearization paragraphs (Section 1) nor the promise to supply two light water reactors to replace the North's existing plans for graphite-moderated reactors, but rather what was laid out in Section 2—the improvement of U.S.-DPRK relations. Whenever that political process faltered and Washington, in the North's eyes, seemed to divert its attention—as happened in 1998—Pyongyang took steps to focus U.S. attention again. One such step was the attempted satellite launch described

¹³ Hecker with Serbin, *Hinge Points: An Inside Look at North Korea's Nuclear Program*, p. 85.

above. The launch almost derailed Japanese participation (and funding) in the Korean Energy Development Organization (KEDO), the international consortium created to follow through on the U.S. obligation to build the two LWRs. Worse, the launch fed suspicions that the North was breaking away from the Agreed Framework. Subsequent events, however, demonstrated the continued priority the North placed on improving ties with the United States. By May 1999, these concerns were largely allayed within the administration. When William Perry visited Pyongyang a month later to inform the DPRK leadership of the results of the major policy review he had conducted at the administration's behest, the North immediately responded positively. That summer, the North agreed to Perry's suggestion that each side take unilateral steps to create an atmosphere for progress and indicated its openness to a missile moratorium. A month later, in talks in Berlin in September, the North announced a unilateral missile launch moratorium, constraining but not stopping its missile development. The launch moratorium was to last until July 2006, although in March 2005 Pyongyang announced it was no longer bound by the moratorium.

The policy engine driving the North to reach the Agreed Framework in October 1994 ended up having a long-term, negative impact on a key part of the DPRK's nuclear program by seriously limiting the North's plutonium production. The North forfeited nearly 50 kilograms of plutonium production by not operating the 5 MWe reactor over the eight years the Agreed Framework was in effect. More than that, the framework made it impossible for the North to continue construction on the two larger reactors; as a result, both became unsalvageable. Had the Agreed Framework never been in place, the plutonium production capacity of three operating reactors could have been roughly 300 kilograms of plutonium per year. As things stand now, with its single, existing 5 MWe reactor, the North can only produce about 6 kilograms of plutonium a year.

While limiting plutonium production, the Agreed Framework preserved hedging space for Pyongyang, which it used. As noted above, the North retained enough room to continue developing behind the scenes some aspects of its nuclear program against the possibility that things turned sour with the United States. Though not specified in the Agreed Framework, North Korea was allowed to keep the reactor and reprocessing facility in a stand-by mode with requisite maintenance. Moreover, in the Confidential Minute (CM) attached to the Framework agreement the North agreed that, when the key components for the first KEDO-supplied LWR began to arrive it would start shipping out the fuel rods it had unloaded from the 5 MWe graphite-moderated reactor in 1994. Pending that development, the North could keep those fuel rods—which contained sufficient plutonium for five to six bombs—in the spent-fuel pool and thus potentially within reach.

Taken altogether, Kim Jong Il had given up a great deal. The North had agreed that when the first LWR was completed, it would ship all of the spent fuel out of the country. The Agreed Framework was also structured in a way that forced the North to give up much more if it ever expected to see even the first promised LWRs completed and operational. The North would not get the critical steam generator—the guts of the reactor—until the IAEA was satisfied with what was going to be a very thorough, lengthy, and no doubt intrusive inspection of the North's nuclear program, probably exposing clues to the uranium enrichment and weapons development. If he got over that hurdle, Kim could theoretically pocket the first LWR and then not follow through with dismantlement of Yongbyon. But in that case, he would have no fuel for his new reactor. Since the North did not have the capacity to make LWR fuel, KEDO was to supply the initial fuel load. It would not have done so if there was evidence Kim was preparing to back off from the rest of the deal. And without that KEDO fuel, the North had little prospect of finding another supplier. It might not have been so

difficult a decision to give up the LWRs if relations with the United States soured, as in fact they did soon after the Clinton administration left office. But foregoing those reactors just as Kim Jong Il's plans for new economic reforms were being implemented in 2002—plans already in the works in 2000—would have presented Kim with a major, painful choice.

For a variety of technical and logistical reasons, the KEDO reactor project proceeded much slower than Pyongyang anticipated, but there was no letup in the North's cooperation with KEDO, and cooperation between U.S. technical experts at Yongbyon and DPRK personnel at the site to can the spent fuel was quite smooth. The next six years (1994-2000) were devoted to implementing the Agreed Framework, with the Americans slowly coming to the realization that for the United States to achieve its goals on the nuclear front with the North, it would have to broaden the scope of engagement to the political front.

The timeline in this period is crucial. Actions, of course, were the result of decisions, and decisions were being made on a continuous basis to cope with the emerging situation. There is no doubt that Pyongyang made a strategic decision to engage the United States. Yet no matter that policy decision—or maybe exactly because of it—the North was convinced it could not show weakness in the process or move too fast until it could be sure it had created conditions in which the United States demonstrated a commitment to move toward normal relations. Consideration of U.S. economic assistance was secondary at this point, though as the North moved into a period of serious starvation and economic dislocation after Kim Il Sung's death, Pyongyang did not hide its need for food aid and for KEDO's annual shipments of 500,000 tons of heavy fuel oil.

The Out Years

Speed in reaching an agreement is no guarantee that it contains any more than words on paper. In this case, the Agreed Framework not only lasted but in its implementation phase produced wide ranging results for six years (1994-2000). This was a period of productive engagement that significantly slowed North Korea's nuclear weapon and missile developments, as described above. Even after the shock of the abrupt turnaround in U.S. policy under the Bush administration and the collapse of the framework in 2002, there was continuing evidence that Pyongyang hoped to adhere to Kim Il Sung's strategic decision of 1990. In January 2004, the North invited Hecker to Yongbyon to view the plutonium production facilities and discuss technical details about operations with the center's director, Ri Hong Sop. There was strong evidence the Koreans hoped Hecker's report on the visit would convince Washington that the North was serious and making progress in its program, and thus the United States should revert to the previous policy of engagement.

The United States did not respond positively, however, and so in February 2005, the North announced it had become a nuclear state. At that point it had not yet tested a nuclear device, which it finally did in October 2006. The next eleven years (2007-2018) were a period of wandering in the diplomatic wilderness punctuated by North Korean efforts (in 2009, 2012, 2015) to resume talks, and when that failed, to conduct five more nuclear tests and greatly expand its uranium enrichment capacity. A concerted effort to resume talks in 2018 with the Trump administration appeared to make progress but collapsed with a failed summit in Hanoi in February 2019. In Pyongyang, there was a period of reconsideration of the old policy in 2020/2021 followed by what appears to have been a decision in Pyongyang in late 2021 or early 2022 to at last move decisively away from a

fundamental effort to engage the United States and instead to align with China and Russia to a degree it had not done in 50 years. That pattern break is the focus of the next chapter.

CHAPTER FIVE

North Korea's Decision to Develop Fully as a Nuclear Weapon State

Robert Carlin and Siegfried Hecker

Introduction

Over the past thirty-three years, the foreign policy of the Democratic People's Republic of Korea (DPRK) has experienced two fundamental pattern breaks. The first, which we detailed in the previous chapter, dated from late 1990 when Pyongyang decided to try to normalize relations with the United States as a balancer or even a buffer against potentially hostile Chinese and Russian regimes on the North's northern border. That policy basically lasted until 2021, when the North finally abandoned its efforts to normalize with the United States, moved to develop fully as a nuclear weapon possessing state, and aligned itself with the PRC and Russia. In this chapter, we examine what led to the most recent change of course and how this pattern change affected the drivers of, and constraints on, North Korea's acquisition, threat, and use of nuclear weapons. In turn, we examine how the consequences and costs flowing from that decision may continue to shape Pyongyang's approach to nuclear weapons.

As the North abandoned its efforts to normalize relations with the United States, the drivers behind its nuclear arsenal changed from a dual-track policy—nuclearization plus diplomacy—to developing fully as a nuclear weapons state, both in its military capabilities and its policies. Its national defense strategy for 2023 called for an exponential increase of the country's nuclear arsenal and mass-production of tactical nuclear weapons. Kim Jong Un called for expanding the production of weapons-grade nuclear materials and the production of more powerful nuclear weapons. On the missile front, the DPRK launched a solid-fueled Hwasong-18 intercontinental ballistic missile (ICBM) that Kim claimed would “extensively reform the strategic deterrence components of the DPRK, radically promote the effectiveness of its nuclear counterattack posture and bring about a change in the practicality of its offensive military strategy.”¹ These drivers for the acquisition, threat, and potential use of the North's nuclear arsenal may greatly increase the risk of confrontation on the Korean Peninsula. They come with rather few new constraints as Pyongyang's alignment with the PRC and Russia, combined with the greatly deteriorating geopolitical situation, will countenance potentially more aggressive actions by Pyongyang. Moreover, the hardline policies of the Republic of Korea (ROK)'s Yoon administration in conjunction with more muscular U.S.-ROK combined military drills may prompt more threatening DPRK responses.

Initial Pattern

¹ Soo-Hyang Choi and Ju-min Park, “North Korea says it tested new solid-fuel ICBM, warns of ‘extreme’ horror,” *Reuters*, April 14, 2023, <https://www.reuters.com/world/asia-pacific/north-korea-says-it-tested-new-solid-fuel-icbm-thursday-kcna-2023-04-13/>.

Overall, the fundamentals of the North's push for normal relations with the United States continued for three decades, from its inception in late 1990 until 2020. From 1994 to 2002, the North's nuclear weapons capabilities and delivery systems were largely frozen, though developmental work continued out of sight as a hedge against the failure of the diplomatic track with Washington. After the United States walked away from the Agreed Framework in 2002, the North's dual track—nuclear weapons development plus continued efforts to engage Washington—grew in prominence, leading many observers to conclude that Pyongyang's sole interest was nuclear weapons and that diplomacy was a smokescreen. In fact, the diplomatic component remained strong and continued to act as something of a brake on nuclear weapon development.

From 2003 to 2017, although nuclear and missile developments picked up speed, they were always affected by the imperative to normalize relations with the United States. By 2022, when this consideration finally dropped away, the North had conducted six nuclear tests (including of a probable thermonuclear device) and launched several long-range missiles, including a liquid-fueled ICBM (the Hwasong-17) with a projected range of 15,000 kilometers. On April 13, 2023, it flight-tested the Hwasong-18 solid-fuel ICBM for the first time. North Korea was also producing an estimated 150 kilograms of highly enriched uranium and roughly 5 kilograms of plutonium annually. In line with its new stance, the North moved from the defensive declaratory position of deterrence to one of possible preemptive nuclear use, explicitly targeting the ROK and the United States.

As we discussed in the previous chapter, the initial result of the first pattern break was the October 1994 U.S.-DPRK Agreed Framework (AF). The implementation period (1995-2000) for that agreement, which had several complicated, inter-related moving parts, was relatively smooth. Along the way, there were moments when it looked at first as if Pyongyang were abandoning its effort to achieve normal relations with the United States, but each time, at what it deemed a propitious moment, the North returned to its main goal. The one time the process began to wobble seriously was in 1998 when Washington began lessening its attention to the agreement. However, things returned to a positive phase with renewed energy following former Secretary of Defense William Perry's review of U.S. policy on North Korea in 1999 and his visit to Pyongyang.² The relatively rapid settlement of one potentially disruptive issue³ and steady progress on the KEDO reactor construction project, a complex undertaking that required considerable and sustained cooperation from the North Koreans,⁴ reflected the seriousness of Pyongyang's continued commitment a decade after Kim Il Sung's decision to normalize ties with the United States.

In the late 1990s, U.S. intelligence learned of the North's involvement with A.Q. Khan, and its acquisition of a few (the number is uncertain) centrifuges for enriching uranium. Because that took place when the North was in the depths of a debilitating famine (1995-2000) and on the edge of economic collapse, and also at a time when Pyongyang may well have viewed Washington's

² Don Oberdorfer and Robert Carlin, *The Two Koreas*, 3d edition (New York: Basic Books, 2014), pp. 327-330.

³ In 1998, U.S. intelligence discovered what some analysts concluded was a clandestine site in a mountain in Kumchang-ri housing a nuclear reactor and a reprocessing plant. There was a press leak, which caused an uproar in Congress. Such a clandestine operation would definitely have been a gross action violating—almost certainly destroying—the 1994 Agreed Framework. A series of U.S.-DPRK meetings on the issue began in November 1998. They concluded in May 1999 with agreement that the United States could send an experienced team with necessary technical equipment to inspect the site. The inspection found there was not, nor was there evidence there ever had been, anything nuclear related there.

⁴ Robert Carlin, Joel Wit, and Charles Kartman, *A History of KEDO 1994-2006* (policy brief, Center for International Security and Cooperation, 2012), https://cisac.fsi.stanford.edu/publications/a_history_of_kedo_19942006.

commitment to the AF as faltering, there is no way of knowing whether the move to acquire centrifuges was at central direction in a considered effort to get around the AF or the result of less rigorous central oversight and attention. However it started, the North's enrichment program developed into a focus of U.S. policy and eventually became the major source of bomb fuel for Pyongyang's growing arsenal of nuclear weapons.

The reinvigorated U.S. commitment to the process after the Perry visit to the DPRK helped lead to a unilateral moratorium by the North on long-range missile launches in September 1999 and, a year later, an exchange of high-level visits between Pyongyang and Washington. The first of these, by DPRK Vice Marshal Jo Myong Rok to Washington, resulted a joint statement in which the North agreed that the "resolution of the missile issue would make an essential contribution to a fundamentally improved relationship between [the two sides] and to peace and security in the Asia-Pacific region."⁵ Less than two weeks after the Jo visit, Secretary of State Madeline Albright arrived in Pyongyang for hours of talks with Kim Jong Il. Immediately after their meetings, Albright told the press that she and Kim had discussed:

...the full range of our concerns on missiles, including both the DPRK's indigenous missile programs and exports. We also discussed Chairman Kim's idea of exchanging DPRK restraint in missiles for launches of DPRK satellites. Chairman Kim was quite clear in explaining his understanding of U.S. concerns.⁶

Kim, in turn, told Albright he could limit the range on the North's missiles if South Korea did the same but that he couldn't touch already deployed missiles, i.e., short range Scuds and Nodongs. That offer remained on the table after the change of U.S. administration in January 2001, though the new Bush administration—intent on developing missile defense—was never in listening mode. In addition to the potential opening on missiles, as of late 2000, there seemed to be a good possibility of stopping the still nascent uranium program through negotiations once the U.S. intelligence community gave the OK to raise the issue with Pyongyang.⁷

The Bush Years

The new U.S. administration entered office in January 2001 determined to jettison the Agreed Framework. The shock to the North of that reversal of U.S. policy cannot be overstated. In October 2000, improved relations with the United States verging on achieving Kim Il Sung's goal of normalization must have seemed to Pyongyang to be within grasp. On election day in the United

⁵ U.S. Department of State Office of the Spokesman, U.S.-D.P.R.K. Joint Communiqué, U.S. Department of State Archive, October 12, 2000, https://1997-2001.state.gov/regions/eap/001012_usdprk_jointcom.html. A draft of the statement had been passed to the North Korean side at a U.S.-DPRK meeting in Berlin in January 2000. The final version was virtually unchanged from that draft.

⁶ U.S. Secretary of State Madeline Albright, Press Conference in Pyongyang, U.S. Department of State Archive, October 24, 2000, <https://1997-2001.state.gov/statements/2000/001024b.html>.

⁷ The following passage was deliberately included in the October 2000 joint communiqué by the American side to open the possibility for visits to sites suspected of enrichment activities. Based on interaction with DPRK diplomats, there was good reason to believe that the North knew why that passage was in the document. "Pledging to redouble their commitment and their efforts to fulfill their respective obligations in their entirety under the Agreed Framework, the US and the D.P.R.K. strongly affirmed its importance to achieving peace and security on a nuclear weapons free Korean Peninsula. To this end, the two sides agreed on the desirability of greater transparency in carrying out their respective obligations under the Agreed Framework. In this regard, they noted the value of the access which removed U.S. concerns about the underground site at Kumchang-ri."

States, November 7, 2000, the North's party newspaper *Rodong Sinmun* had carried an article reviewing "noteworthy positive moves for the improvement of DPRK-U.S. relations," singling out the October 12, 2000 joint communiqué issued at the conclusion of Vice Marshal Jo's visit to Washington, and pledging the DPRK would "do its best" to develop relations.⁸

Two months later, literally overnight, U.S. policy changed. It might have been a double shock in Pyongyang because the U.S. reversal came exactly at the time Kim Jong Il was moving to begin a multi-stage process of economic reform, something for which he knew he needed an improved external security environment.⁹ Through October 2002, Pyongyang—and certainly the foreign ministry, whose views at that point still had considerable standing in leadership calculations—was in a state of disbelief about the United States' 180 degree turn. The idea that Washington didn't realize the extent to which Kim Jong Il was personally invested in the progress to date or take note of the fact that the October 2000 joint communiqué had so important a figure as Jo Myong Rok as a signatory was baffling to the North.

Things came to a head in October 2002, when Assistant Secretary of State James Kelly led a U.S. delegation to Pyongyang. Kelly was sent with strict instructions to present the U.S. accusations about the North's clandestine uranium enrichment program but under no circumstances to negotiate. A few weeks later, in an oral message to Washington entrusted to former U.S. ambassador to Seoul Don Gregg, Kim Jong Il made a last-ditch effort to put things back on track.¹⁰ When that failed to elicit any American response, Pyongyang ordered the IAEA inspectors to leave the country, restarted the frozen facilities at Yongbyon, and announced its final withdrawal from the NPT. These moves propelled the situation to a new phase, in which the North significantly altered, but did not abandon, its tactics for achieving the goal of normalizing ties with the United States.

The Six Party talks between the United States, the PRC, Russia, the DPRK, the ROK, and Japan began in the summer of 2003, brokered by the Chinese, who did not want to see the situation on the Peninsula escalate in the wake of the U.S. invasion of Iraq. It is unclear how seriously Pyongyang—which wanted bilateral talks with Washington and did not like the multinational setting—took them. For the first round, the North send a lower ranking representative and didn't assign that role to a more experienced figure—Vice Minister Kim Gye Gwan—until the second round in February 2004. A year later, in February 2005 when the talks were deadlocked, the DPRK announced in a high-level foreign ministry statement that it was manufacturing nuclear weapons—essentially negating the main goal of the talks, which was to stop the North from developing such weapons.¹¹ Following the quick collapse of the Six-Party agreement of September 2005, the North made preparations for its first nuclear test, which took place in October 2006. Technically, with a yield of only a kiloton or less, the test was not successful, but it seems to have accomplished what Pyongyang intended—to bring the United States back to talks and, equally important, to establish the North as a nuclear weapon possessing state.

⁸ "DPRK's principled stand on DPRK-U.S. relations," Korean Central News Agency, November 7, 2000.

⁹ For a review of Kim Jong Il's reforms, see Robert Carlin and Joel Wit, *North Korean Reform: Politics, Economics and Security* Adelphi Book 382 (London, UK: International Institute for Strategic Studies, 2006).

¹⁰ Oberdorfer and Carlin, *The Two Koreas*, pp. 377-378.

¹¹ "DPRK FM on Its Stand to Suspend Its Participation in Six-Party Talks for Indefinite Period," Korean Central News Agency, February 10, 2005.

Not long after the collapse of the Agreed Framework, a North Korean diplomat had warned in private that those in Pyongyang who wanted nuclear weapons now had a clear road, and “they wouldn’t stop until they succeeded.”¹² Considering the source and the circumstances, the admonition that there were those in Pyongyang who were determined to complete their drive to attain nuclear weapons does not appear to have been a piece of psychological warfare to convince the United States of a “hardliner” camp in the leadership. More likely, it was meant to reflect the reality of the dual track Pyongyang was adopting even more decisively in the wake of the Agreed Framework’s demise.

To be clear, however, the diplomatic track was far from dead. On the contrary, from 2004 to 2010, it was very much in the forefront as evidenced by the numerous invitations Hecker (one of the authors) received to view the North’s nuclear facilities in the Yongbyon nuclear center and for discussions with key nuclear officials.¹³ That had all the earmarks of an effort to convince Washington that the DPRK was making serious progress in the weapons program and thus to bring the United States back to the table. Indeed, the ten years after the North’s first test in 2006 was a period of wandering in the diplomatic wilderness, but also one punctuated by numerous serious efforts on the part of Pyongyang (in 2009, 2010, 2012, 2013, 2015) to get back to negotiations and to the goal of developing relations with Washington. In parallel, North Korea continued its nuclear and missile development. When these diplomatic initiatives failed, which they all did, the North ramped up those developments.

From 2007 to August 2008 there was a respite of sorts, during which the North agreed under the tattered Six-Party umbrella to a number of disablement steps of key Yongbyon facilities. An inter-Korean summit also took place in Pyongyang in November 2007, likely in an effort to create an environment in which renewed progress with the United States would be possible. Perhaps for much the same reason, the North hosted the New York Philharmonic Orchestra in Pyongyang in February 2008, with some hope that Secretary of State Condoleezza Rice, an accomplished pianist, would attend.¹⁴ In the first half of 2008, even after a conservative administration came to power in Seoul and set back inter-Korean dialogue, Pyongyang stayed the course of disabling the facilities in Yongbyon, though never beyond the point that they couldn’t be quickly restored. The process slowed that summer with disagreement over what steps the United States had pledged in return for what steps the North was to take. In August 2008, Kim Jong Il suffered a near fatal stroke, and through the rest of the year a harder line emerged from Pyongyang.

Early in 2009, as the new Obama administration found its footing, Pyongyang greeted it with an attempted satellite launch, which was viewed in Washington as a disguised missile test. The administration orchestrated a condemnation by the United Nations Security Council, which in turn gave the North the excuse it needed to terminate the disablement agreement, expel the IAEA inspectors, and conduct its second nuclear test. Though Washington viewed these developments in highly negative terms, neither the satellite launch nor the nuclear test was indicative of a

¹² Oberdorfer and Carlin, *The Two Koreas*, p. 394.

¹³ Details of these visits are presented in Siegfried Hecker with Elliot A. Serbin, *Hinge Points: An Inside Look at North Korea’s Nuclear Program* (Stanford: Stanford University Press, 2023).

¹⁴ The invitation and visit by the New York Philharmonic are described in Oberdorfer and Carlin, *The Two Koreas*, pp. 419-423. The alacrity with which North Korean officials agreed to the orchestra’s demands and facilitated the visit, even to the extent of renovating a venue to meet the orchestra’s performance requirements, strongly suggests Kim Jong Il’s personal involvement. Secretary Rice, although next door in Seoul for President Lee Myong Bak’s inauguration, declined to attend.

fundamental change in policy toward the United States. Rather, both appear to have been an effort by the North to show that Kim's stroke had not created an opportunity for outsiders to exploit any weakness.¹⁵

A few months later, Pyongyang made another effort to get back to serious engagement. In August, former President Clinton flew to Pyongyang to accept the release of two American reporters. Notes from the Kim-Clinton discussions indicate that the North Korean leader signaled a desire to get back to the positive path the two sides had been on in 2000.¹⁶ Failing in that effort, Kim turned later that month to the South Koreans, proposing a summit with President Lee Myong Bak.¹⁷ Partially because of Lee's own inclinations and the opposition of his conservative advisors, however, that effort also stumbled.

In November 2010, the North Koreans invited Hecker and a Stanford team to Yongbyon, where they were given a quick tour of a new uranium centrifuge facility. That turned out to be a major effort to make clear that, with development of a uranium path to the bomb, the DPRK's nuclear program had reached a new stage, and, if diplomacy did not resume, the situation would become even more dangerous. At dinner after their visit to the new facility, Vice Foreign Minister Ri Yong Ho spelled out that message to the group.¹⁸ It took another eight months, but in July 2011, U.S.-DPRK talks did begin again, eventually making enough progress on the outlines of an agreement that the sides prepared to meet in Beijing in December for the finishing touches.

Kim Jong Il's death on December 13 disrupted those plans.

When Kim Jong Un assumed power after his father's passing, he was fully prepared both to launch major economic reforms (in effect, picking up what Kim Jong Il had started in 2002 then dropped a few years later) and to reengage with the United States. From the new leader's perspective, those goals were firmly linked, exactly as they had been for his father. The first opportunity for engaging Washington came in February 2012 when the previously planned U.S.-DPRK meeting took place.¹⁹ In the so-called Leap Day deal that emerged, the North agreed to steps that would have significantly slowed its nuclear program. Curiously, no joint statement emerged from the talks. Instead, there were separate statements from each side, and these differed in important respects.

In its statement, Washington sought to underplay the results, tersely characterizing the meeting only as an "exploratory round" of U.S.-DPRK talks. Underlining that "the United States still has

¹⁵ These steps were apparently in planning as early as February, when a senior DPRK Foreign Ministry official warned a visiting Stanford delegation, "You don't have any idea how bad things are going to get." The nuclear test, the North's second, was between 2-7 kilotons, still relatively small but more successful than the one in 2006.

¹⁶ David Straub, "North Korea Policy: Why the Obama Administration is Right and the Critics Are Wrong." Talk presented at Stanford University (May 13, 2016), <https://aparc.fsi.Stanford.edu/events/north-korea-policy-why-obama-administration-right-and-critics-are-wrong>.

¹⁷ *The Two Koreas*, op. cit., p. 437-443.

¹⁸ Hecker and Serbin, *Hinge Points*, op. cit., pp 244-246.

¹⁹ Preparations for a U.S.-DPRK meeting were complete and it was supposed to take place in Beijing in December when Kim Jong Il died. Much as had happened in July 1994 after Kim Il Sung's death, the meeting was rescheduled to occur with a minimum of delay, suggesting Kim Jong Un would be picking up a policy line already approved. The U.S. head of delegation, Ambassador Glyn Davies, was new to the North Korea portfolio, replacing the very experienced Ambassador Stephen Bosworth, and would meet DPRK First Vice Foreign Ministry Kim Gye Gwan, who had been involved in dealing with the Americans since 1994, through the years of the Agreed Framework implementation and then leading the North's delegation to the Six Party talks.

profound concerns regarding North Korean behavior across a wide range of areas,” it noted that the steps agreed reflected “important, if limited, progress in addressing some of these.”²⁰ The North’s announcement, meanwhile, was noticeably more positive. It called the meeting “high-level talks” and described the steps the two sides had agreed to as being “aimed at building confidence as part of the efforts to improve the relations between the DPRK and the U.S.”²¹

The announcements also contained differences when it came to specific steps. The United States said the North had agreed to

implement a moratorium on long-range missile launches, nuclear tests and nuclear activities at Yongbyon, including uranium enrichment activities. The DPRK has also agreed to the return of IAEA inspectors to verify and monitor the moratorium on uranium enrichment activities at Yongbyon and confirm the disablement of the 5 MW reactor and associated facilities.²²

By contrast, Pyongyang’s announcement only said the North “agreed to a moratorium on nuclear tests, long-range missile launches, and uranium enrichment activity at Yongbyon and to allow the IAEA to monitor the moratorium on uranium enrichment while productive dialogues continue.”²³

Even with the differences, however, the agreement signified that the new North Korean ruler was prepared for what could have been a major disruption in the DPRK nuclear and missile developments—certainly not an end to development work at this point but unmistakably a pause that would affect the production of fissile material as well as nuclear and missile tests. Perhaps equally important, it would have afforded the IAEA some (unspecified) access to the enrichment facility, providing what would almost certainly have been an opportunity learn more about it and how it was being operated.

There was no chance for any of that, however, because of a fundamental disagreement over what the two sides meant by “missile launches,” a problem that cropped up when the North announced on March 16, 2012 that it planned to launch a satellite between April 12 and 16 to mark the 100th birthday of Kim Il Sung.²⁴ Washington responded that this would be a breach and would jeopardize the entire agreement. A senior DPRK diplomat privately warned against letting the launch interfere with implementing the rest of the agreement, arguing that if not halted now, the nuclear program would soon be outside the bounds of Yongbyon (in many ways, it probably was already) and impossible for diplomacy to deal with it.²⁵ When the launch took place as scheduled, Washington called off the deal.

²⁰ Press statement by Victoria Nuland Department Spokesperson, Office of the Spokesperson, Washington, DC February 29, 2012, <https://2009-2017.state.gov/r/pa/prs/ps/2012/02/184869.htm>.

²¹ “DPRK Foreign Ministry Spokesman on Result of DPRK-U.S. Talks,” Korean Central News Agency, February 29, 2012.

²² Office of the Spokesperson, Press statement by Department Spokesperson Victoria Nuland, U.S. Department of State, February 29, 2012, <https://2009-2017.state.gov/r/pa/prs/ps/2012/02/184869.htm>.

²³ “DPRK Foreign Ministry Spokesman on Result of DPRK-U.S. Talks,” Korean Central News Agency, February 29, 2012.

²⁴ “DPRK to Launch Application Satellite,” Korean Committee for Space Technology, Korean Central News Agency, March 16, 2012.

²⁵ Authors’ personal files.

In his first public speech in April 2012, Kim Jong Un used a phrase with far-reaching implications: the DPRK people could live “without tightening their belts any longer.”²⁶ That phrase was welcomed in the North to mean the years of sacrifice to build up the military had ended. To the extent that economic progress and economic reform initiatives would need a positive external security environment, Kim’s new approach assumed significant progress in U.S.-DPRK ties, even though his first attempt—the Leap Day deal—had failed.²⁷

Pyongyang took serious steps every year from 2013 to 2018 to demonstrate its willingness to address the nuclear issue with the United States as the price for markedly improved relations. Each year, however, as its nuclear and missile programs advanced, rather than bring the Americans back to the table, the goal of normalization seemed to recede. The perceived need to appear tough was a constant in North Korean policy over the next six years, not as an end in itself—though the DPRK is always painfully sensitive to any suggestion of weakness—but as part of a strategy to make the resumption of diplomacy with the United States more likely and to open the path to normalization of relations. It was in these periodic efforts to resume talks that the North signaled that the core of the 1990 policy decision remained intact.

A brief review of those efforts is necessary to set the stage for describing Pyongyang’s second pattern break.

2013—In February of this year, the North conducted its third nuclear test,²⁸ declared that any talks with the United States were impossible, and through much of March, engaged in unusually inflammatory rhetoric. Then Kim Jong Un pulled back, and at a party plenum at the end of March, he declared a policy of parallel emphasis on the economy and on the nuclear sector.²⁹ Immediately afterwards, an April 1 meeting of the Supreme People’s Assembly adopted a law stating that the North was a “full-fledged nuclear weapons state” and spelling out a policy for use, non-proliferation, and “safekeeping and management.”³⁰ The next day, a spokesman of the North’s General Department of Atomic Energy announced work would begin “without delay” for “readjusting and restarting all the nuclear facilities in Yongbyon including uranium enrichment plant and 5 MWe graphite moderated reactor.”³¹ The reactor and ancillary facilities had been disabled from 2007 to early 2009 under an agreement reached at the six-party talks in October 2007. Asked why Kim had stepped back from his pledge to end belt-tightening and was again emphasizing the military buildup, a senior DPRK official explained that during his first year, Kim felt that outsiders were testing him and that he had to show he was tough.³²

²⁶ “Kim Jong Un Speaks at Military Parade,” Korean Central News Agency, April 15, 2012.

²⁷ Kim’s economic reform efforts from 2012-2018 are discussed in a series of articles on 38North.org from 2021-2023. The correlation between these new policies and Kim’s efforts to engage the United States are striking.

²⁸ In *Hinge Points*, p. 268, the authors point out that that this was likely the first test of a highly enriched uranium nuclear device, demonstrating that the North now had mastered both paths to the bomb.

²⁹ “Report on Plenary Meeting of WPK Central Committee,” Korean Central News Agency, March 31, 2013.

³⁰ The full text of the law can be found on “Law on Consolidating Position of Nuclear Weapons State Adopted,” Korean Central News Agency, April 1, 2013. In language that cheekily mirrored the negative security assurance the United States once gave selected non-nuclear weapon states, and which Washington promised the North in the Agreed Framework but failed to deliver, the law stated that the North “shall neither use nukes against the non-nuclear states nor threaten them with those weapons unless they join a hostile nuclear weapons state in its invasion and attack on the DPRK.

³¹ “DPRK to Adjust Uses of Existing Nuclear Facilities,” Korean Central News Agency, April 2, 2013.

³² Authors’ personal files.

Abruptly on June 16, the DPRK National Defense Commission (NDC) “upon authorization”³³ released a statement emphasizing that denuclearization “is an invariable will and resolve of our army and people,” is “the behest of our leader and our general and the policy task that must be carried out by our party, state, and millions of soldiers and people without fail,” and that the North’s nuclear weapons were “a self-defensive and strategic choice we made to achieve the denuclearization of the Korean peninsula.”

With that preamble, the statement proposed holding “high-level talks between the DPRK and the U.S. authorities to ease tense situation on the Korean peninsula and establish peace and security in the region.” It added that the United States could “set the venue and date of the talks at its own convenience.” The same day he learned of the statement, a DPRK ambassador in Europe, obviously without talking points, expressed surprise that Pyongyang had reversed the firm stance against talks on denuclearization it had taken six months earlier.³⁴

A month later, in Track 1.5 discussions, a senior North Korean diplomat expressed frustration that the United States did not seem to understand the authority or the significance of the NDC statement. In that regard, he emphasized the following points:³⁵

- The June statement was issued at the highest level, coming from Kim Jong Un himself.
- The statement meant that the North was prepared to have denuclearization on the agenda of any talks that might develop.
- Underpinning the policy articulated in the NDC statement was Kim Jong Un’s personal, positive stance toward improving relations with the United States. In that regard, the North had the will to open a new stage in developing ties with countries with whom in the past it had hostile relations, if they would respect the North’s sovereignty.³⁶
- To create a new foundation, the two sides should hold talks in which they could “put all issues in a basket.” Everything, the diplomat said, was on the table. He preemptively offered that the North would be prepared for a nuclear test moratorium and a moratorium on long-range missile launches. He also said the North could discuss such things as a delay in restarting the 5 MWe reactor.
- Finally, the diplomat stressed that Pyongyang was focused on economic construction. This later point was emphasized in a Politburo member’s speech at the July 27th Korean War anniversary parade that the North needed a peaceful environment to concentrate on the economy. By this time, Kim Jong Un’s economic policy reforms were already well underway.

There was no response from Washington to this initiative, and by the end of the year, the North apparently had doubled the size of the centrifuge facility in Yongbyon. In September, it restarted the 5 MWe reactor, which had been shut down since 2007, to produce more plutonium and possible

³³ In North Korean usage, “upon authorization” is a formulation meant to signify an especially important policy pronouncement. The NDC statement is found on “DPRK Proposes Official Talks with U.S.,” Korean Central News Agency, June 16, 2013.

³⁴ Authors’ personal files.

³⁵ Authors’ personal files.

³⁶ This formulation—the will “to develop ties with countries with whom it once had hostile relations”—can be either anodyne or meaningful, depending on the context in which the North uses it.

tritium for hydrogen bombs. The North also test-launched eight short-range ballistic missiles in 2013, all of them before the June diplomatic initiative and none attended by Kim Jong Un.³⁷

2014—In the spring, at another Track 1.5 meeting, a senior DPRK diplomat floated the idea of a North Korean nuclear test moratorium at the same time the United States suspended joint exercises with the ROK. He suggested this could be modeled on what had occurred in 1992, when the United States suspended a major U.S.-ROK joint exercise (Team Spirit) in parallel with the North taking a major step on the nuclear issue (ratifying its IAEA safeguards agreement).³⁸ Though he did not say so, this was not a finished proposal, and there was obviously considerable room for fleshing it out in official channels. Nevertheless, the idea was significant because, once again, it put the nuclear issue on the table, exactly as had the North's initiative in June 2013. The pace of missile tests increased in 2014, totaling eighteen throughout the year—two medium-range and the rest short-range. Over the summer, Kim Jong Un attended several of what were described as “tactical rocket firing” drills.³⁹

2015—On January 10, KCNA reported that the DPRK government had formally passed to the United States a proposal for “temporarily suspending joint military exercises in south Korea and its vicinity this year” and indicated that it was “ready to take such a responsive step as temporarily suspending the nuclear test over which the U.S. is concerned.”⁴⁰ This was exactly along the lines of what had been floated unofficially in May 2014 and suggests the idea had, for nearly a year, been under discussion within the leadership. The KCNA report further noted that Pyongyang's proposal also stated that, “if the U.S. needs dialogue as regards this issue, the former is ready to sit with the U.S. anytime.” Typically, Pyongyang did not want to appear to be the party asking for talks, but there is no doubt that this was only the leading edge of a proposal, with each side taking unilateral action at the outset to create conditions for a broader dialogue under positive conditions. Washington rejected the proposal within a day, hardly time even to consider it.

Pyongyang picked up the thread again in the autumn of 2015, this time with a high-level, sustained public effort to resume talks with the United States under the guise of having discussions about replacing the Korean Armistice Agreement with a peace treaty.⁴¹ The key was that, in advocating its position, the North clearly did not rule out including the nuclear issue in the talks. In response to the U.S. position that the nuclear issue had to be addressed first, the North employed a logic very similar to what it used in October 1994 when getting to yes in the Agreed Framework talks and emphasized repeatedly that the problem was not one of substance but of sequence. A *Rodong Sinmun* article on November 7 stated that, “Every issue requires order of its settlement,” adding that, “The longer the US shelves the conclusion of the peace treaty, the stronger the DPRK's nuclear deterrent will

³⁷ Kim Jong Un's attendance at missile launches—either described as “tests” or “drills”—is a good measure of how much emphasis the leadership is putting on the event.

³⁸ Authors' personal files.

³⁹ “Kim Jong Un Guides Tactical Rocket Firing Drill of KPA Strategic Force,” Korean Central News Agency, June 30, 2014; “Kim Jong Un Guides Tactical Rocket Firing Drill of Units of KPA Strategic Force in Western Sector of Front,” Korean Central News Agency, July 10, 2014; “Kim Jong Un Guides Rocket Firing Drill of Strategic Force of KPA,” Korean Central News Agency, July 27, 2014.

⁴⁰ “KCNA Report,” Korean Central News Agency, January 10, 2015.

⁴¹ After DPRK Foreign Minister Ri Su Yong laid out the proposal in his October 1 speech to the UNGA, over the next 45 days Pyongyang followed up with three foreign ministry pronouncements and numerous articles in the party newspaper, all making the point—albeit with varying degrees of clarity—that the nuclear issue was not off the table.

grow.”⁴² The clear implication of North Korean commentary during these weeks was that there was linkage, i.e., if the United States addressed the North’s concerns, that would have an impact on the nuclear program. Details of how much or how soon, however, were to be left to the talks.

By December, Pyongyang’s effort had run out of steam, and the following month, the North conducted its fourth nuclear test. Asked why the North had tested instead of continuing its effort to engage the United States in a non-official meeting, a senior North Korean diplomat replied that Kim Jong Un had run out of patience with the diplomacy. On the American side, when one of the authors asked a U.S. National Security Official at the time why they had rejected the January offer of a nuclear test moratorium, he was told that the North was not technically prepared to test anyway, so why give them something for nothing. That decision proved to be a mistake. With no activity on the diplomatic front and no reason to stop, the North conducted eighteen more missile launches, fifteen of which were SRBMs and three of which were tests of a new missile meant to be launched from a submarine. Kim Jong Un attended one of those.⁴³

2016—Following the January nuclear test, Beijing agreed that the UN Security Council needed to take action and pass a new sanctions resolution against North Korea. Xinhua, the official state news agency of the PRC, cited Foreign Minister Wang Yi as saying that “China is willing to maintain all-round and profound consultations with all the parties in a responsible way, including the U.S.,” adding that the North’s “latest nuclear test violated the UN Security Council resolution and threatened the international nuclear non-proliferation system.”⁴⁴ As if Kim needed any reminding of what the North Koreans consider a long list of Chinese perfidy, this latest PRC move was more than enough.⁴⁵ He fired off criticism of China, choosing as the vehicle a DPRK Government spokesman’s statement—near the very top of the ladder in terms of authority: “It is our stance never to allow the reality in which legitimacy and illegitimacy are arbitrarily cut by the yardstick of big powers, including the United States...the United Nations has reduced to being monopolized by big powers, including the United States and fools who follow them.”⁴⁶

In early May, the North held the Workers’ Party 7th Congress, an occasion for Kim Jong Un to review past accomplishments, lay out a view of the country’s current challenges, and prescribe policies for the next several years. In so doing, he made clear he was continuing to press ahead on his economic reform policies, now in their fourth year, insisting the core of the reforms—known as the “socialist enterprise responsibility management system”—must be implemented properly. This emphasis on the economic reform program was significant because it was implicitly linked to the

⁴² “Rodong Sinmun Urges U.S. to Opt for Concluding Peace Treaty with DPRK,” Korean Central News Agency, November 7, 2015.

⁴³ “Kim Jong Un Watches Strategic Submarine Underwater Ballistic Missile Test-fire,” Korean Central News Agency, May 9, 2015.

⁴⁴ Xinhua, January 27, 2016 (From authors’ personal files).

⁴⁵ Kim Jong Un’s personal experience with the Chinese may have gotten off to a spectacularly bad start. In December 2013, he executed his uncle by marriage, Jang Song Thaek, for coup plotting. Jang—smart, capable, and cocky—had been problem in the leadership going back many years. He appears to have overstepped the bounds one too many times with the new leader, and worst of all, may have been cooperating with the Chinese outside of the young leader’s writ. If so, Kim’s distrust of the Chinese must have run quite deep.

⁴⁶ “DPRK Govt. Spokesman Clarifies Its Stand to Resolutely Counter UN ‘Resolution on Sanctions,’” Korean Central News Agency, March 4, 2016.

need, at some point, to establish a propitious external security environment which, in turn, required reopening serious talks with the United States.⁴⁷

Two months later, Pyongyang took the next step, one that went further in laying the foundations for an eventual major turn back to engagement. On July 6, the North issued a statement by a “spokesman of the DPRK Government,” a highly authoritative vehicle for signaling a new and important policy decision.⁴⁸ After laying out a series of steps for the United States to take, the statement asserted: “If such a security guarantee comes true, the DPRK will also take steps in response to it and a decisive breakthrough will be made in realizing the denuclearization on the Korean peninsula.” Significantly, it referred back to the January 1992 North-South Denuclearization Declaration, and in so doing, implicitly pointed as well to the 1994 Agreed Framework.

The foundation was in place, but the timing was not yet right. After the U.S. presidential election, in a Track 1.5 meeting with a senior DPRK delegation at the end of 2016, the Americans present urged the North to give the new Trump administration time to find its footing and review the policy. Very specifically, they urged no long-range missile tests. The reply was that Pyongyang thought unless and until Washington understood the North could hit the United States directly, it wouldn’t seriously engage in talks. The implication was that this was not a question of whether engagement could take place, but when.⁴⁹

The North continued to develop its nuclear and missile programs during 2016 with the goal of being able to threaten the U.S. mainland. Its missile program suffered an unusually large failure rate with its Musudan intermediate-range ballistic missile (IRBM)—seven of eight launches failed. The North, however, was quick on its feet: it discontinued the Musudan program and launched a new IRBM, dubbed the Hwasong-12, in subsequent years with good success. It also succeeded in a submarine launch and successfully put a satellite in orbit in 2016. Kim Jong Un attended two submarine-launched ballistic missile (SLBM) tests,⁵⁰ as well as a September drill for firing three extended range Scud missiles by units “tasked to strike the bases of the U.S. imperialist aggressor forces in the Pacific operational theatre in a contingency.”⁵¹ Kim also attended engine tests in March, April, and September. According to KCNA, he described the April test as intended for an ICBM meant “to keep any cesspool of evils in the earth including the U.S. mainland within our striking range and

⁴⁷ For analysis of how Kim’s approach at the Party Congress presaged an eventual pivot to diplomacy, see Robert Carlin, “Pulling the Rabbit Out of the Hat: Kim Jong Un’s Path Out of the Nuclear Crisis,” 38North.org, April 4, 2016, <https://www.38north.org/2016/04/rcarlin040416/>.

⁴⁸ Robert Carlin, “North Korea Said it is Willing to Talk about Denuclearization...But No One Noticed,” 38North.org, July 12, 2016, <https://www.38north.org/2016/07/rcarlin071216/>. The government statement also reemphasized the North’s then-current position against no-first use: “As long as the aggressive hostile forces do not infringe upon our sovereignty with nuclear [weapons], our Republic, as a responsible nuclear state, will not use a nuclear weapon first, as already elucidated; will faithfully carry out the obligation, assumed before the international community, to prevent nuclear proliferation; and make efforts to achieve the denuclearization of the world.” The text of the government statement can be found on “DPRK Government Denounces U.S., S. Korea's Sophism about "Denuclearization of North,” Korean Central News Agency, July 6, 2016.

⁴⁹ Authors’ personal files.

⁵⁰ “Kim Jong Un Guides Underwater Test-fire of Strategic Submarine Ballistic Missile,” Korean Central News Agency, April 24, 2016; “Kim Jong Un Guides Strategic Submarine Underwater Ballistic Missile Test-fire,” Korean Central News Agency, August 25, 2016.

⁵¹ “Kim Jong Un Guides Fire Drill of Ballistic Rockets,” Korean Central News Agency, September 6, 2016.

reduce them to ashes so that they may not survive in our planet.”⁵² The September test as reported by KCNA was intended for “developing and completing the carrier rocket for geo-stationary satellite during the 5-year program for national aerospace development and made it possible to acquire sufficient carrier capability for launching various kinds of satellites including earth observation satellite at a world level.”⁵³

The Yongbyon nuclear facility was operational in 2016, producing more plutonium and highly enriched uranium. Most importantly, the North successfully detonated two nuclear devices. It claimed that the test it conducted in January was of a hydrogen bomb, although its explosive yield was too low for that. In their 2023 book *Hinge Points: An Inside Look at North Korea’s Nuclear Program*, authors Hecker and Elliot Serbin speculate instead that it was a proof-of-principle hydrogen bomb test.⁵⁴ In September, the North tested another nuclear device successfully. This one may well have been a version of the “disco ball” that Kim Jong Un displayed to the world in a photo-op in March.⁵⁵ To leave little to the imagination, behind Kim in the photo were missiles large enough to fit the disco ball. The very public airing of these weapons and delivery systems appeared to be aimed at convincing Washington that Pyongyang was making progress on the nuclear and missile fronts.

2017—The pivot to diplomacy finally came in 2017. It was preceded by a barrage of sharp criticism of the PRC in articles carried by KCNA and meant to convey intense, high-level anger in the North Korean leadership over Chinese support for UNSC sanctions and for growing Chinese criticism of the North’s fifth nuclear test (September 9, 2016).⁵⁶ On April 21, an article titled “Are You Good at Dancing to the Tune of Others,” took full aim at Beijing.⁵⁷ It accused “a country around the DPRK” of “talking rubbish” about its willingness to help preserve the North’s security and warned that, “If the country keeps applying economic sanctions on the DPRK while dancing to the tune of someone after misjudging the will of the DPRK, it may be applauded by the enemies of the DPRK but it should get itself ready to face the catastrophic consequences in the relations with the DPRK.”

Another commentary on May 3, entitled “Reckless words and deeds undermining the DPRK-China relations must be stopped,” observed that “large neighboring countries—apparently taking fright at the threats and blackmail and war noise loudly hyped by the United States—are letting out statements devoid of reason and sense on a daily basis, driving the current situation further into a tense phase.” It went on to charge that “China is hyping up ‘damage caused by the DPRK’s nuclear tests’ to its three northeastern provinces. This is a far-fetched assertion devoid of scientific ground and validity.” At that point, complaining that “It was never China but just the DPRK whose strategic interests have been repeatedly violated due to insincerity and betrayal on the part of its

⁵² “Kim Jong Un Guides Ground Jet Test of New-type High-Power Engine of Inter-continental Ballistic Rocket,” Korean Central News Agency, April 9, 2016.

⁵³ “Kim Jong Un Guides Ground Jet Test of New-type High-Power Engine of Carrier Rocket for Geo-stationary Satellite,” Korean Central News Agency, September 20, 2016.

⁵⁴ Hecker and Serbin, *Hinge Points*, p. 276.

⁵⁵ Geoff Brumfiel, “Why Analyst Aren’t Laughing At These Silly North Korean Photos,” NPR, March 21, 2016, <https://www.npr.org/sections/parallels/2016/03/21/470976577/why-analysts-arent-laughing-at-these-silly-north-korean-photos>.

⁵⁶ It would probably be necessary to go back to the 1960s and China’s Cultural Revolution to find similar vituperative anti-Chinese language in North Korean media.

⁵⁷ “Are You Good at Dancing to Tune of Others: Jong Phil,” Korean Central News Agency, April 21, 2017

partner,” the article detailed examples of Chinese perfidy.⁵⁸ In our view, it is very likely that Kim Jong Un personally reviewed such an attack on China, and may have even written parts of it, before it was released. Overall, the piece demonstrates how bad PRC-DPRK relations had become just as Kim was preparing a major effort to move toward the United States.

Three weeks later, a lengthy, authoritative level “Commentator” article focused on the issue of dialogue with Washington appeared in the party newspaper *Rodong Sinmun*.⁵⁹ It began by reviewing the history of talks, arguing that “It is none other than the United States itself that poured cold water on the other party’s sincere efforts toward resolving the issue through dialogue, and fabricated all kinds of preposterous excuses to cast away like dirt the hard-won agreements.” In one passage, the article specifically noted that the 1994 Agreed Framework was “adopted to resolve the nuclear issue of the Korean Peninsula, and accordingly, we froze the graphite-moderated reactors and related facilities and suspended plutonium production...” It went on to acknowledge the North’s commitment in the September 2005 Six Party Joint Statement to return to the NPT. In each case, it contended, the deal did not go through because of the failure of the United States to live up to its commitments. The particulars of the charges were less important at this point than the degree with which details of past dialogue with Washington were reviewed. In effect, this authoritative article—speaking primarily to a high-level, internal audience—was not using past “bitter” experience to rule out future dialogue, but to suggest instead that dialogue, while difficult, might still be possible:

Such a process in history made it forever difficult to expect normal dialogue or negotiations between Korea and the United States **unless** (emphasis added) the United States fundamentally withdraws its hostile policy toward Korea, and it only leaves to future generations a bitter lesson that any good agreement will only end up useless.

In the next section, the article moved from the past to the future. Rather than argue that dealing with the United States was impossible, it carefully made the point that there are circumstances in which dialogue and “normal relations” could happen:

Acknowledgment, respect, equality, and reciprocity based on the withdrawal of the hostile policy toward Korea, not “maximum pressure” or “maximum engagement,” are the only correct policy base for **establishing normal relations** (emphasis added) between Korea and the United States.

The thrust of Commentator’s argument, thus, was actually not about rejecting dialogue overall but very narrowly rejecting the Trump administration’s “maximum pressure and engagement” policy. The harsh language and bluster were there to ensure that any future moves by the North towards dialogue not be seen as caving in to pressure.

⁵⁸ “Commentary on DPRK-China Relations,” Korean Central News Agency, May 3, 2017. The KCNA English leaves out some of the vituperation in the full vernacular version.

⁵⁹ “*Rodong Sinmun* Commentator Reveals Truth of ‘Maximum Pressure and Engagement,’” Korean Central News Agency, May 25, 2017. Articles signed “Commentator”—i.e., not named but only with that term—have often appeared at moments of decision in the leadership, and this appears to be one of them. The KCNA English version of this article was considerably shorter than the full text in Korean, suggesting the line of argument was meant for an internal audience.

A few weeks later, on July 4, Kim Jong Un took the next step and in his remarks at the launch of the North's first ICBM (HS-14), publicly signaled that the shift to dialogue was underway.⁶⁰ In a formulation typically complex and too easily missed by outside observers, Kim said:

[T]he DPRK would neither put its nukes and ballistic rockets **on the table of negotiations** (emphasis added) in any case nor flinch even an inch from the road of bolstering the nuclear force chosen by itself **unless (emphasis added)** the US hostile policy and nuclear threat to the DPRK are definitely terminated.

The use of the negatives in the formulation obscured what was crucial, that Kim was in effect signaling that the nuclear and missile programs could be “put on the table of negotiations.” On July 27, the North launched another ICBM. That was quickly followed, on August 5, by expanded UNSC sanctions, with Beijing's support. A furious DPRK Government statement appeared two days later, blasting the Chinese:

There are countries to which the ridiculous threats of the U.S. are working and there are countries which lie prostrate at the bluff of the U.S. The U.S. claiming to be the “only superpower of the world” and the DPRK's neighbors hardly any smaller in size than the U.S. are all so frightened at merely two ICMB test-launches by the DPRK that they are making much a scene baying at each other.⁶¹

An authoritative-level *Rodong Sinmun* editorial on Aug. 9 continued to beat the same drum:⁶²

Even our neighboring countries—the large countries in terms of size, which do not have their own opinion and which are bereft of even elementary fidelity and unmindful of their status as powers—joined the oppressive and outrageous act of the United States, overwhelmed by fear.

Nevertheless, Pyongyang was not backing away. Within the space of five weeks, Kim's formulation—with the crucial imagery of the “table of negotiations”—was repeated several times in DPRK media, including in the above-referenced government statement and editorial, as well as in remarks by the North's Foreign Minister at a meeting of the Association of Southeast Asian Nations (ASEAN) in Manila on August 7.⁶³ The rest of the year, at least as it appeared on the surface, was drowned in rhetoric and posturing, highlighted by angry exchanges between President Trump and Kim Jong Un. It is hard to be sure how much of this reflected the personalities involved and how much was calculated, especially on the North Korean side. Two things seem clear to us, however: First, strategically, Kim was aiming to reach the point where he could declare success in the development of the nuclear and missile programs in order to concentrate on the economy and, in tandem with that, take a decisive step back to engaging the United States; and second, tactically, at

⁶⁰ “Kim Jong Un Supervises Test-launch of Inter-continental Ballistic Rocket Hwasong-14,” Korean Central News Agency, July 5, 2017.

⁶¹ “Statement of DPRK Government,” Korean Central News Agency, August 7, 2017.

⁶² The short KCNA English version is available as “DPRK Will Continue to Implement Line of Simultaneously Developing Two Fronts,” Korean Central News Agency, August 9, 2017. The full Korean text in the party newspaper is much longer, devoting more attention to anti-U.S. themes and encouraging economic construction.

⁶³ For the Foreign Minister's remarks and the media's confusion about what he said, see Robert Carlin, “Door to Negotiations or No?” 38North.org, August 8, 2017, <https://www.38north.org/2017/08/rcarlin080817/>.

every turn in the seeming escalation of U.S.-DPRK tensions between August and December, Kim was intent on keeping the situation within bounds.

On September 3, the North tested what was likely a hydrogen bomb with an explosive yield exceeding 200 kilotons, roughly ten times higher than that at Nagasaki. In line with Kim's map for reaching the pivot point, a statement the same day issued by the North's Nuclear Weapons Institute said the test "marked a very significant occasion in attaining the final goal of completing the state nuclear force."⁶⁴ In other words, things were not quite there. Two months later, speaking at the November 29 launch of a newer ICBM model (HS-15), Kim Jong Un put the icing on the cake, declaring that the successful launch marked "the historic cause of completing the state nuclear force."⁶⁵ The declaration of "completion" gave him the necessary room to move fully into the engagement phase, though how much and how fast depended on what Washington would do. It must have seemed heaven sent when, in December, UN Undersecretary for Political Affairs Jeffrey Feltman arrived in Pyongyang bearing a message from President Trump that he was "willing to sit down" with the North Korean leader. On December 9, North Korean media carried reports of Kim riding his white horse up Mt. Paektu, designed to signal domestically a momentous decision on his part, i.e., what would emerge at the beginning of the New Year as a major move toward the United States.⁶⁶

To most of the world, 2017 looked like a dangerous year on the Korean Peninsula because of the fiery rhetoric of the new U.S. president, equal responses from Kim Jong Un, and dramatic advances in the North's nuclear and missile programs. As a case in point, the September nuclear blast was bigger than anything carried out by the major nuclear powers for more than 30 years, and the ICBMs, although launched in a lofted trajectory, had the ability to reach most of the U.S. mainland. In addition to the three ICBM launches—all of which Kim Jong Un attended—a large number of the twenty-four launches conducted in 2017 were medium- and intermediate-range missiles. Taken together, they seemed intended to prove the point Kim Jong Un made in one of his appearances that the North now had the ability to launch missiles at anytime from anywhere. His claim that they had "completed" North Korea's nuclear missile forces was hyperbole, which Kim undoubtedly knew. The great variety of missile delivery systems the North was developing would require more missile and more nuclear tests to constitute a reliable nuclear force. Rather than anything to be taken literally, Kim's claim—as well as his increased visibility at the launches—appear to have been calculated to get Washington's attention and even more important to provide himself with the necessary room domestically to launch a major diplomatic initiative without seeming to retreat.

2018—From January to June, Kim unveiled his new policy and captured the opportunity to nail it down, both domestically and internationally. After setting the stage by sending his sister, Kim Yo Jong, to meet with ROK President Moon in February during the Winter Olympics in the South, he gave a visiting high-level ROK delegation a message to pass to President Trump: Kim would denuclearize, halt nuclear and missile tests, and accept ongoing U.S.-ROK military exercises, and he hoped to meet the U.S. President.⁶⁷ In April, at a Workers' Party plenum, Kim reoriented domestic

⁶⁴ "DPRK Nuclear Weapons Institute on Successful Test of H-bomb for ICBM," Korean Central News Agency, September 3, 2017.

⁶⁵ "Kim Jong Un Guides Test-fire of ICBM Hwasong-15," Korean Central News Agency, November 29, 2017.

⁶⁶ Mt. Paektu is considered the birthplace of the Korean people and symbolically of great importance in the history of the anti-Japanese struggle of the early 20th century.

⁶⁷ Hecker and Serbin, *Hinge Points*, p. 313.

policy and prepared the population for progress with the United States. He said that “a fresh climate of détente and peace” was being created on the peninsula and declared victory for his 2013 “strategic line of simultaneously developing” the nuclear and economic fronts, claiming that “the struggle of the Korean people who worked hard with their belt tightened to acquire a powerful treasured sword for defending peace was successfully concluded.”⁶⁸

Consequently, Kim said, “no nuclear tests and intermediate-range and inter-continental ballistic rocket tests are necessary for the DPRK now, given that the work for mounting nuclear warheads on ballistic rockets was finished as the whole processes of developing nuclear weapons were carried out in a scientific way and in regular sequence, and the development of delivery and strike means was also made scientifically.” He then declared that “it is the strategic line of the Workers’ Party of Korea to concentrate all efforts of the whole party and country on the socialist economic construction.”

Elaborating on Kim’s remarks, the official report on the plenum released the key resolution, titled “On Proclaiming Great Victory of the Line of Simultaneous Development of Economic Construction and Building of Nuclear Force.” These specified that:⁶⁹

First, we solemnly declare that the sub-critical nuclear test, underground nuclear test, making nuclear weapon smaller and lighter and the development of the super-large nuclear weapon and delivery means have been carried out in order in the course of the campaign for implementing the party's line of simultaneously developing the two fronts and thus the work for putting on a higher level the technology of mounting nuclear warheads on ballistic rockets has been reliably realized.

Second, we will **discontinue** (NB: not merely “suspend” but “discontinue”) nuclear tests and inter-continental ballistic rocket test-fire from April 21, Juche 107 (2018). The northern nuclear test ground of the DPRK will be dismantled to transparently guarantee the discontinuance of nuclear tests.

Third, the discontinuance of nuclear tests is an important process for worldwide disarmament, and the DPRK will join the international desire and efforts for the total halt to nuclear testing.

Fourth, the DPRK will never use nuclear weapons nor transfer nuclear weapons or nuclear technology under any circumstances unless there are nuclear threat and nuclear provocation against the DPRK.

Fifth, we will concentrate all efforts on building a powerful socialist economy and markedly improving the standard of people's living through the mobilization of all human and material resources of the country.

Sixth, we will create international environment favorable for the socialist economic construction and facilitate close contact and active dialogue with neighboring countries and

⁶⁸ An English-language summary of Kim’s remarks can be found in “3rd Plenary Meeting of 7th C.C., WPK Held in Presence of Kim Jong Un,” Korean Central News Agency, April 21, 2018.

⁶⁹ Ibid.

the international community in order to defend peace and stability on the Korean peninsula and in the world.⁷⁰

In case there were any doubts in his military as to what this new “strategic line” meant, Kim convened a meeting of the Central Military Commission in May, where he “stressed that the whole army should reliably safeguard and guarantee the all-people struggle for implementing the decisions of the [recently concluded] 3rd Plenum of the 7th WPK Central Committee with the matchlessly powerful bayonet.”⁷¹ In a symbolically important move, though one not formally announced, the military’s representative on the Politburo’s highest body, the Standing Committee, was quietly dropped.

Pyongyang’s initial moves in early 2018 set off unease in Beijing about how far this might go and what it might mean for China’s strategic position. Articles appeared in PRC media casting doubt on what the North was doing. In response, on February 8, an article carried in full on KCNA and in both the party paper *Rodong Sinum* and the government paper *Minju Joson* (i.e., for both domestic and international audiences) delivered a lengthy response, albeit one that was carefully aimed at “some quarters” in Beijing rather than more broadly at the PRC leadership.⁷²

At this time, some media of China, not to be left behind the U.S. and Japan, reactionaries of history, are letting out impudent arguments of individual experts, seriously spoiling the atmosphere for the feast.

It continued: “This is evidently an act of screwballs feeling dissatisfaction with the north and the south of Korea aspiring after detente and peace, and a mischievous act to reverse and divert the international focus away from the atmosphere for the north-south reconciliation.”

The depth of concern in some quarters in Beijing was also reflected in pushback that appeared in the *Global Times* on March 9 immediately after news reports that Kim would meet President Trump.⁷³

It is unnecessary for China, a major power, to worry about North Korea “turning to the US,” as there will be no one around China that will completely side with the US. Since the very beginning of the peninsula nuclear crisis, China has been actively pushing for a direct dialogue between North Korea and the US, and we should continue to support this approach at this moment. If the Kim-Trump meeting will contribute to denuclearization and peace that China desires the most, China has no reason to be unhappy about it.

⁷⁰ It is worth noting that this proclamation on halting nuclear and long-range missile tests came almost two months prior to the first U.S.-DPRK summit in June. While Kim Jong Un had communicated something similar to President Trump via the ROK delegation that went to Washington in March, it is unusual for the North to concede in public positions that would be useful in negotiations.

⁷¹ “Kim Jong Un Guides 1st Enlarged Meeting of 7th WPK Central Military Commission,” Korean Central News Agency, May 18, 2018.

⁷² “Chinese Media Slashed for Arrogantly Meddling in Event of Korean Nation,” Korean Central News Agency, February 8, 2018. The article was attributed to the same author—Jong Phil—as the one given for the even harsher criticism of China in April 2017. See Footnote 410.

⁷³ “How China Should Respond to US-NK Talks,” *Global Times*, March 9, 2018, <https://www.globaltimes.cn/page/201803/1092615.shtml>.

Not long after, both Beijing and Pyongyang, each for its own reasons, decided that in view of the decisive steps Kim was about to take toward the United States, they needed to patch up their relations. Kim needed to have his flanks covered when he went in to meet the U.S. President, and Xi Jinping wanted to ensure that the North would not go too far in developing ties with Washington. From March 26 to 28, Kim was in Beijing, his first trip to China since taking power in 2012.

Although at first Pyongyang was cautious about commenting on a possible Kim-Trump summit, it immediately began adjusting its public posture. In the aftermath of the early March visit by the high-ranking ROK delegation to Washington, Pyongyang virtually stopped referring to its nuclear program. At the same time, it began to open up space for a negotiating position to deal with the issue. A March 23 *Rodong Sinmun* article characterized sanctions as “the main contents of the US hostile policy,” an example of linkage that raised the possibility that Pyongyang could deliberately portray movement on easing sanctions as a lessening of the U.S.’ “hostile policy.”⁷⁴ In turn, because the North’s consistent position had been that its nuclear program was a result of U.S. hostile policy, any movement on the latter could give Pyongyang justification for some movement on the former.

While holding back from explicit references to the possibility of a summit, officials in Pyongyang did not hide how much the situation had developed. A March 20 KCNA commentary noted “there has been a sign of change” in the DPRK-U.S. relations. In an obvious reference to the possibility of talks, it criticized “small-minded” efforts to “spoil the atmosphere and say this or that even before the parties concerned are given a chance to study the inner thoughts of the other side and are seated at a negotiating table.” This was the time, the commentary emphasized, for “all to approach everything with prudence with self-control and patience.”⁷⁵

Apart from central media, Pyongyang also used the pro-DPRK newspaper in Japan, *Choson Sinbo*, to advance a positive line. On March 10, in an extremely quick reaction to the news of the South Korean envoys’ visit to Washington, the newspaper carried an “analysis” by its long-time and well-connected correspondent in Pyongyang. The article was careful not to say that Kim had actually empowered the South Korean envoys to deliver an offer to the U.S. President but rather that the envoys had “grasped” Kim’s “intent,” and that, in response, President Trump had “expressed his intent” for a summit. The item did note specifically that Kim had said the North could refrain from conducting nuclear and ballistic rocket test launches. The item also referred, without elaboration, to the North Korean leader having made a “big, resolute, decisive decision,” a formulation frequently used to signify a major shift in policy. Playing to the U.S. President’s claim that policies of previous administrations had all failed, the article predicted that Kim would “show the president—who claims to be ‘the master of deals’—the way to evade the repeated failures of his predecessors and will call for his decisive decision.”⁷⁶

⁷⁴ “Rodong Sinmun Slams U.S. and Its Vassal Forces’ Sanctions Racket against DPRK,” Korean Central News Agency, March 23, 2018. The language cited above is in the longer vernacular text, not in the brief English-language version.

⁷⁵ “KCNA Blasts Dishonest Forces’ Distortion of Truth,” Korean Central News Agency, March 20, 2018. The opening sentence of the piece was “The Korean Central News Agency issued a commentary...,” a lede meant to emphasize the authoritative level of the views.

⁷⁶ “Analysis by reporter Kim Chi-yo’ng: Summit Talks Between the Democratic People’s Republic of Korea and the United States, Which Have Been Scheduled—End to War Commotions and the Beginning of Negotiations for Peace [in Korean], *Choson Sinbo*, March 10, 2018.

This “analysis” was followed quickly with another mention of a possible U.S.-DPRK summit in a March 14 column in *Choson Sinbo*.⁷⁷ The column painted the best outcome in terms of a “win-win strategy”—not a usual North Korean formulation. Further, the column did not rule out having denuclearization on the agenda, though it used a tortured construction to make this point, noting that it would be “extremely foolish” for the U.S. President to think that, in the talks, he could seek “only” North Korea’s denuclearization. The column also implied that Pyongyang was aiming for a major realignment of the structure in Northeast Asia, noting “there is no eternal foe, and no eternal ally”—the same language Kim Jong Il had used years before to signal the possibility of a significant opening for U.S.-DPRK relations.

When Kim and the U.S. President met in Singapore in June, it turned out to be the high point in the North Korean leader’s plans for normalizing relations with the United States. In the short joint statement issued at the end of the talks, the two men mentioned establishing “new U.S.-DPRK relations” three times, and Kim twice committed to “complete denuclearization of the Korean Peninsula.”⁷⁸ A month later, when U.S. Secretary of State Mike Pompeo went to Pyongyang to continue the discussions, it was clear to the North Koreans that there remained a wide gap between the two countries’ approaches. Washington was focused on denuclearizing the North and paid little attention to Kim’s top priority—establishing normal relations.⁷⁹

The lengthy Kim-Trump letter correspondence during this time, largely dismissed by analysts as fluff, actually reflected Kim’s persistent efforts to move the process along and the extent to which he was prepared to make concessions in return for what he regarded as necessary movement by the United States.⁸⁰ In particular, in a September 6 letter to Trump, Kim focused on what he could offer on the nuclear front, noting he was fully prepared to implement the Singapore joint statement and that,

...in addition to the steps we have taken up front (i.e., a reference to ending long-range missile tests, nuclear tests, and blowing up the tunnels at the test site) we are willing to take further meaningful steps one at a time in a phased manner, such as the complete shutdown of the Nuclear Weapons Institute or the Satellite Launch District and the irreversible closure of the nuclear materials production facility [at Yongbyon]...in order for us to sustain the momentum ... we need to feel some changes in our surroundings, even a little, to prove that the effort[s] we make are by no means in vain.⁸¹

⁷⁷ Ik (pseudonym), “A Turning Point in History” [in Korean], *Choson Sinbo*, March 14, 2018.

⁷⁸ White House, Joint Statement of President Donald J. Trump of the United States of America and Chairman Kim Jong Un of the Democratic People’s Republic of Korea at the Singapore Summit, June 12, 2018, <https://trumpwhitehouse.archives.gov/briefings-statements/joint-statement-president-donald-j-trump-united-states-america-chairman-kim-jong-un-democratic-peoples-republic-korea-singapore-summit/>.

⁷⁹ The rocky road through the July-December period is covered from various angles in a number of sources, including *Hinge Points*, op.cit; Bob Woodward, *Rage* (New York: Simon & Schuster, 2020); John Bolton, *The Room Where It Happened*, (New York, Simon & Schuster, 2020.); “Negotiating with North Korea: An interview with former U.S. Deputy Secretary of State Stephen Biegun,” *Arms Control Today*, June 2021, <https://www.armscontrol.org/act/2021-06/interviews/negotiating-north-korea-interview-former-us-deputy-secretary-state-stephen>; Bryan Betts, “An interview with Stephen Biegun, former US special envoy to North Korea,” *NK News* July 14, 2021, Stephen Biegun interview with *NK Daily*, <https://www.nknews.org/2021/07/an-interview-with-stephen-biegun-former-us-envoy-to-north-korea/>.

⁸⁰ Robert Carlin, “The Real Lessons of the Trump-Kim Love Letters,” *Foreign Policy*, August 13, 2021.

⁸¹ *Ibid.*

At a summit between North and South Korea later in September, Kim echoed to South Korean President Moon what he had told Trump in his letter. He laid out in detail what Pyongyang was prepared to offer on the nuclear issue, as well as his intense frustration at not seeing a positive response from Washington.⁸²

Kim underscored the seriousness of his diplomatic outreach by halting all missile and nuclear tests in 2018. For good measure, he added a publicity spectacular by inviting foreign journalists to witness the blowing up of tunnel entrances at the Punggye-ri nuclear test site on May 24, shortly before the Singapore Summit. As with several other disablement actions taken by the North over the years, it provided some useful information, slowed the program a bit, but was eventually reversible. Lack of launches did not mean the missile program was at full stop; undoubtedly as part of longer-term defense plans, work continued at operational sites around the country, and well out of sight, there was certainly continuing development of the new missiles, again in line with long-term plans.⁸³ Operations at Yongbyon also appeared to be cut back with the 5 MWe reactor operating only intermittently during the year.

2019—The second U.S.-DPRK summit, which took place in Hanoi in February, proved a disaster, jolting Kim into a painful process of reevaluating his own nine-year effort to fulfill the North's even longer-term push for normalization of U.S.-DPRK relations. It will take more insights, declassified papers, and memoirs than are currently available to be sure what went wrong at the summit. Clearly, there was miscalculation on both sides. Both President Trump and Kim Jong Un came to the meeting with unrealistic expectations of what was possible, and neither was ready for the sort of give-and-take that was necessary to make progress, or at least prevent a total breakdown in the talks.⁸⁴ The mistakes themselves pale in comparison to the consequences that unfolded over the ensuing years, however.

The collapse of the Hanoi summit might well have looked to Kim like a repeat of what happened to his father in 2001. Promising movement on the diplomatic track—movement on which both Kims expended considerable personal prestige—reached a high point and then abruptly collapsed. When Kim Jong Un returned to Pyongyang from Hanoi, there seems to have been considerable back and forth in the leadership over what to do next. Engagement policy seemed to go through a rough period of internal debate through the spring of 2019. By June—judging from the exchange of Kim-Trump letters—Kim was willing to give things one last try. A rump summit in Panmunjom in July accomplished nothing, however, and in August Kim sent a letter to Trump making it clear that there would be no further serious engagement.⁸⁵ A U.S.-DPRK meeting in Stockholm in October appears to have been—to put it in stark terms—a diplomatic ambush, with no plans by the North for it to make even a modicum of progress.

On April 17, six weeks after Kim Jong Un returned empty-handed and angry from Hanoi, the North resumed missile launches, the first since November 2017. However, none of the more than twenty missiles launched in 2019 broke the North's pledge not to launch more ICBMs. Virtually all were

⁸² Authors' personal files.

⁸³ David E. Sanger and William J. Broad, "In North Korea, Missile Bases Suggest a Great Deception," *New York Times*, November 12, 2018, https://www.nytimes.com/2018/11/12/us/politics/north-korea-missile-bases.html?emc=edit_nn_20181112&nl=morning-briefing&nid=7794167520181112&te=1.

⁸⁴ Hecker and Serbin, *Hinge Points*, pp. 332-348.

⁸⁵ Carlin, "The Real Lessons of the Trump-Kim Love Letters," *Foreign Policy*, August 13, 2021.

developmental tests of various short-range tactical ballistic missiles. There was one launch of an SLBM from an underwater barge, the day after Pyongyang announced that it had agreed to U.S.-DPRK working-level negotiations.⁸⁶ The centrifuge facility operated throughout the year as it appears to have since it was expanded in 2013. Much construction also appeared in the Yongbyon complex, but neither reactor appeared to be operating—most likely for technical reasons (cooling issues have plagued both the 5 MWe reactor and the Experimental Light Water Reactor).

Pre-Pattern Break

In October 2019, soon after the final, dead-end talks with the United States, Kim Jong Un climbed Mt. Paektu again, signaling another major decision. He held a Central Military Commission meeting in late December, followed a few days later by a four-day party plenum. Those two meetings suggested that, while a new policy was under consideration, the core goal of the old policy—normalizing with the United States—had not yet been completely abandoned. There was still, notionally, a path to movement in that direction, but it was slowly closing, and hints of a new policy direction were in the air.

In particular at the party plenum, Kim addressed the issue of dialogue at length.⁸⁷ He warned that, “The stalemate between the DPRK and the U.S. cannot but assume protracted nature,” and dismissed recent Washington offers to resume talks:

Recently the U.S. is talking about continued dialogue while peddling the issue of the resumption of the dialogue here and there but this is just aimed to pass without trouble the year-end time-limit set by us and stall for the time for evading a lethal attack as it now finds itself in a tight corner, not out of the intention to withdraw the hostile policy toward the DPRK and solve issues through improved relations. On the other hand, the U.S. has openly revealed its provocative political, military and economic maneuvers to completely strangle and stifle the DPRK. This is the double-dealing behavior of the brigandish U.S.

We will never allow the impudent U.S. to abuse the DPRK-U.S. dialogue for meeting its sordid aim but will shift to a shocking actual action to make it pay for the pains sustained by our people so far and for the development **so far restrained** (emphasis added).

Kim then discarded one of the major props for dialogue with the United States—the need to transform the external security environment to support his economic reform initiatives:

It is true that we urgently need external environment favorable for the economic construction, but we can never sell our dignity which we have so far defended as valuable as our own life, in hope for brilliant transformation.

...we cannot give up the security of our future just for tangible economic achievements, happiness, and comfort in the reality where absolutely nothing has changed in our external

⁸⁶ For the North’s acceptance of talks, see “Choe Son Hui, First Vice-minister of Foreign Affairs of DPRK, Issues Statement,” Korean Central News Agency, October 1, 2019. For the announcement of the missile test, see “DPRK Academy of Defence Science Succeeds in Test-firing of New-type SLBM,” Korean Central News Agency, October 3, 2019.

⁸⁷ “5th plenary meeting of the 7th WPK Central Committee,” Korean Central News Agency, January 1, 2020.

environment between the days when we were taking the path of the simultaneous line and now when we are carrying out the struggle to concentrate all efforts on economic construction, and hostile acts and nuclear threats and blackmail are still increasing due to the robber-like acts of the United States.

The situation had evolved, and Kim seemed to make clear that continuing under current circumstances to pursue dialogue with Washington was a fool's errand:

The DPRK-U.S. stand-off which has lasted century after century has now been compressed to clear stand-off between self-reliance and sanctions.

If there were not the nuclear issue, the U.S. would find fault with us under another issue, and the U.S. military and political threats would not end.

It was impossible for Kim not to address the unilateral concessions he had made during the previous two years—halting nuclear and missile tests—which had been fully reported to the domestic audience and now needed to be explained in light of his new position:

In the past two years alone when the DPRK took preemptive and crucial measures of halting its nuclear test and ICBM test-fire and shutting down the nuclear-test ground for building confidence between the DPRK and the U.S., the U.S., far from responding to the former with appropriate measures, conducted tens of big and small joint military drills which its president personally promised to stop and threatened the former militarily through the shipment of ultra-modern warfare equipment into south Korea.

The next step was thus, Kim suggested, inevitable: “Under such condition, there is no ground for us to be unilaterally bound to the commitment any longer, the commitment to which there is no opposite party.” The North should not, Kim argued, “hesitate by pinning some kind of expectation on the United States, chained to its lifting of sanctions and the like, even now when we have delved into the real intention of the United States.”

And then, not uncharacteristically, Kim seemed to circle back and leave the door a tiny bit open, perhaps to give himself room to maneuver depending on the outcome of the 2020 U.S. presidential elections. He employed his favorite formulation in which the conditional “if” once again played a major part:

There would never be denuclearization on the Korean Peninsula **if** the United States pursues its hostile policy toward North Korea to the end; and the development of strategic weapons—which is essential and a prerequisite for state security—will be continuously carried out vigorously without interruption **until** the hostile US policy toward North Korea is withdrawn, and a lasting and durable peace mechanism is established on the Korean Peninsula.

Building on the notion that there might be a change in U.S. policy at some point, Kim asserted that “the breadth and depth of the strengthening of our deterrent will be upgraded according to the future US stance toward North Korea.”

Yet ten months later on October 10, 2020, in a speech at a military parade marking the Workers' Party's founding anniversary, Kim still seemed unsure what he wanted this message to be, whether leaning forward or holding back on the North's nuclear strategy. While he affirmed that North Korea's nuclear deterrent "will never be abused or used as a means of preemptive strike," he immediately qualified this statement by noting that, "But, if, and if, any forces infringe upon the security of our state and attempt to have recourse to military force against us, I will enlist all our most powerful offensive strength in advance to punish them." Stepping carefully, he said, "I never want that our military strength would aim at someone else" and insisted that "We clarify that our war deterrent is being developed not for aiming at others. We are developing it in order to defend ourselves."⁸⁸ This restraint was to evaporate in less than a year.

A few months later, in a 9-hour speech at the 8th Party Congress in January 2021, the tone was tougher but still suggested that Kim was waiting to see what the new Biden administration's policy would be.⁸⁹ Reviewing the previous years, he even mentioned in positive terms the June 2018 U.S.-DPRK joint statement, noting the:

...dramatic change in the balance of power between the DPRK and the U.S. during the period under review, thereby wonderfully demonstrating the dignity and prestige of our state.

At the face-to-face meetings of the top leaders of the two countries, the first of its kind in the hostile relations between the two countries, the Party Central Committee yielded with strong stand of independence the joint declaration that assures the establishment of new DPRK-U.S. relationship.

The several rounds of DPRK-U.S. summit talks came to be event of the greatest concern in the history of world politics, through which the strategic position of the DPRK, which defends its independent interests, peace and justice against a superpower, were manifested worldwide.

While reiterating by now routine formulations about the need to strengthen national defense, even in the face of "US hostile policy" he still did not rule out diplomacy. It was "foolish and dangerous to fail to steadily build our muscle and to while away time," because "reality shows that only when we bolster up the national defense capabilities without a moment's halt, we can contain the military threat from the U.S. and achieve peace and prosperity on the Korean peninsula." At the same time, he stressed that "strong defense capabilities of the state never preclude diplomacy but serve as a great means that propel toward the correct orientation and guarantees its success."

We should put the focus of foreign policy activities on containing and subduing the US. The fundamental obstacle to the development of our revolution and our **foremost principal enemy** (emphasis added).

⁸⁸ "Supreme Leader Kim Jong Un Delivers Speech at Military Parade," Korean Central News Agency, October 10, 2020.

⁸⁹ "Great Programme for Struggle Leading Korean-style Socialist Construction to Fresh Victory: On Report Made by Supreme Leader Kim Jong Un at Eighth Congress of WPK," Korean Central News Agency, January 9, 2021.

Critically, here Kim did not call the United States the “eternal” but rather the “principal” enemy, a choice of terminology that left the way open for him to declare that “...a key to establishing new relationship between the DPRK and the U.S. lies in the U.S. withdrawal of its hostile policy towards the DPRK.”

Calling the “withdrawal of hostile policy” the key to a new relationship was hardly a new formulation. In the past, it had proven to be an entirely flexible approach, allowing the North to move in and out of negotiations depending on its view of whether diplomacy was making progress or not. Nevertheless, it could be a long-lasting and very high barrier, and a source of considerable frustration to Washington.

Marking a significant change from the previous Party Congress in 2016, when he had condemned “big powers” and “dominationists”—language used to criticize both Beijing and Moscow without explicitly mentioning them by name—Kim also signaled that the North’s relations with both China and Russia were now good:

The Party Central Committee has...provided a firm guarantee for fresh development of the DPRK-China relations through five rounds of the DPRK-China summits, based on the demand of the times that required giving continuity to the fraternal friendship and unity between the two parties and two peoples of the two countries which are inseparably bound up with each other in the struggle for common cause.

The Party Central Committee has also provided a cornerstone for the expansion of friendly relations between the DPRK and Russia through external activities for the development of friendly and cooperative relations with Russia, while attaching importance to the fresh development of the traditional DPRK-Russia relations.

He did not, however, completely abandon the North’s insistence on its independent right to protect its interests, noting that the development of a menu of new weapons systems—tactical nuclear weapons, super-large nuclear warheads, long-range “preemptive and retaliatory” nuclear strike capabilities, hypersonic warheads, solid fuel ICBMs, and “underwater launch strategic weapons”—fit with the strategy of “countering toughness in kind...against the hostile forces unwarrantedly running amuck and the **big powers** (emphasis added) using high-handed practices.” Still, although he did reaffirm that the North did not have a clear no-first-use policy, he also indicated that his country, “as a responsible nuclear weapons state, would not misapply the nuclear weapons unless the aggressive hostile forces try to use their nuclear weapons against the DPRK.”

If the door for diplomacy was still open, it was only a crack. In a March 18 statement issued soon after the new Biden administration took office, First Vice Foreign Minister Choe Sun Hui noted that the United States had made numerous efforts to contact the North since mid-February, detailing attempts by email and telephone messages through the DPRK UN Mission in New York. In language that was more a brush off than a definitive rejection, she dismissed these attempts as a “trick,” adding, “It will only be a waste of time to sit with the U.S. as it is not ready to feel and accept new changes and new times.”⁹⁰

⁹⁰ “Statement of First Vice Foreign Minister of DPRK,” Korean Central News Agency, March 18, 2021. The United States has not revealed what those messages contained. As noted above, Pyongyang can use the charge of a “US hostile

A week later, Politburo member Ri Pyong Chol issued a statement expressing “deep apprehension” at the U.S. response to a recent test of a new short-range missile system that likewise couched his criticism of Washington in carefully hedged terms meant to signal possible room for progress: “I think that the new U.S. administration obviously took its first step wrong. If the U.S. continues with its thoughtless remarks without thinking of the consequences, it may be faced with something that is not good.”⁹¹ In early May, criticizing President Biden’s State of the Union address, the director general of the Foreign Ministry’s U.S. Affairs Department also pulled his punches, calling the President’s comments nothing more than “a big blunder.”⁹² At the end of May, an authoritative-level article carried by the North’s news agency noting that the United States had lifted missile range guidelines for South Korea used the same term, calling it “a serious blunder.”⁹³ In a line seeming to contradict Kim Jong Un’s formulation the previous October, the article claimed that “The target of the DPRK is not the south Korean army but the U.S.” Whether that meant literally a military target or the target of attention was left unclear.

At a party plenum in June, half a year into the new U.S. administration, Kim was still signaling that there might be a return to engagement.⁹⁴ The DPRK report on the meeting noted that he:

...made detailed analysis of the policy tendency of the newly emerged U.S. administration toward our Republic and clarified appropriate strategic and tactical counteraction and the direction of activities to be maintained in the relations with the U.S. in the days ahead.

That meant, Kim said, “...the need to get prepared for both dialogue and confrontation, especially to get fully prepared for confrontation in order to protect the dignity of our state and its interests for independent development...” When U.S. National Security Advisor Jake Sullivan picked up on that formulation as a potential opening, however, Pyongyang was quick to signal that Kim had not meant anything was ready at the moment: Kim’s sister Kim Yo Jong released a caustic but not totally clear statement pushing back on Sullivan’s optimism but not explicitly ruling out the possibility of dialogue at some point.⁹⁵ The next day—perhaps to clarify—Foreign Minister Ri Son Gwon issued a statement in support of the “clear cut” remarks by Kim Yo Jong “brushing off hasty judgment, conjecture and expectation of the U.S.” The North was not, the Foreign Minister said, “considering even the possibility of any contact with the U.S., let alone having it, which would get us nowhere, only taking up precious time.”⁹⁶ This theme—that talks would be a waste of time—falls short of an explicit rejection of talks *per se*.

policy” with maddening imprecision and virtually whenever it wants. So soon after the administration had taken office, Choe was using it like a piano player in a saloon, just vamping until ready.

⁹¹ “Ri Pyong Chol Expresses Deep Concern over U.S. President’s Statement Faulting DPRK’s Regular Testfire,” Korean Central News Agency, March 27, 2021.

⁹² “Statement of DPRK Foreign Ministry Director General of Department of U.S. Affairs,” Korean Central News Agency, May 2, 2021. In his address to Congress, the President said: “On Iran and North Korea—nuclear programs that present serious threats to American security and the security of the world—we’re going to be working closely with our allies to address the threats posed by both of these countries through di- — through diplomacy, as well as stern deterrence.”

⁹³ “What Is Aim of Termination of ‘Missile Guidelines,’” Korean Central News Agency, May 31, 2021.

⁹⁴ “Third-day Sitting of 3rd Plenary Meeting of the 8th Central Committee of WPK Held,” Korean Central News Agency, June 18, 2021.

⁹⁵ “Kim Yo Jong Releases Press Statement,” Korean Central News Agency, June 22, 2022.

⁹⁶ “Press Statement by Ri Son Gwon, Minister of Foreign Affairs of DPRK,” Korean Central News Agency, June 23, 2021.

Six weeks later, in August, the United States pullout from Afghanistan received quick attention from Pyongyang; this event may have marked the start of a final reevaluation of policy. Beginning on August 31, there were four articles on the pullout on the foreign ministry website in the space of a week. Signaling new calculations about the situation in Asia, over the next month, in quick succession, articles on KCNA and statements from the Foreign Ministry began offering unusual support for China and Russia. Starting on September 15, a flurry of articles appeared on KCNA, ostensibly by “researchers” or “international affairs analysts.” These would not have appeared without authoritative-level approval and very likely were expressing high-level views not yet ready to receive top-level imprimatur. The first of these was on the Taiwan issue and expressed “full support” by the Korean people for Beijing’s stand:

The U.S. hell-bent on the preparations for a new war is steadily building up armed forces in and around the Korean peninsula in its persistent moves to perpetuate the division of the Korean nation and territory and disrupt peace and stability in the region.

The Korean people reject the U.S. moves for interference in the internal affairs and division and will always stand with the Chinese people on the road for defending the socialist cause.⁹⁷

Days later, KCNA carried two more commentaries by named authors. Such commentaries rarely appear, and two in one day strongly suggested something was bubbling in the policy pot. The first of the articles discussed at some length the broader implications of the U.S. withdrawal from Afghanistan. It argued that the withdrawal “has brought to light the status quo of the ‘only superpower’ now on the decline with no qualifications for international policing,” and “shattered the U.S. fiction and crumbled the master-servant relationship between the U.S. and capitalist countries.”⁹⁸ It is unlikely that Pyongyang believed literally that the withdrawal from Afghanistan would have immediate, far-reaching consequences, but beginning in September there was a noticeable change in tone and substance of the North’s comment on dialogue with the United States, as well as a clear uptick in attention to China and Russia.

The second commentary was focused on the United States, and more specifically, on the issue of talks. It included many of the positions laid out in earlier foreign ministry pronouncements and may have represented a last-ditch effort by some quarters to hold the door for diplomacy open. An article issued at this level could not take a position forthrightly declaring that dialogue was either possible or impossible until there was a top-level decision; in the midst of what appears to have been a discussion in the leadership over new options, a definitive statement had to await a much higher-level signal. But the article did describe talks as being at a “stalemate,” a term implying there could be room for restarting them.

As had the March 2021 foreign ministry pronouncement, it acknowledged that the “new administration” had been sending signals “wishing for our return to the talks.” The article stated flatly, “We have never opposed the dialogue itself.” While the problem it laid out was a step beyond the argument that talks were a “waste of time”, it still did not portray them as impossible:

⁹⁷ “U.S. Challenge to ‘One China’ Principle Rejected,” Korean Central News Agency, September 15, 2021.

⁹⁸ “Collapse of Imperialist Domination System Is Inevitable,” Korean Central News Agency, September 17, 2021.

Even though contacts and dialogues are undertaken **now** (emphasis added; use of the term “now” holds open things changing in the future), it is certain that the U.S. would raise the double-dealing yardstick by which it would call our acts for self-defence “threats” to the world peace and its allies.

Unless (emphasis added) the U.S. vouches for the withdrawal of its hostile policy toward the DPRK, the word denuclearization can never be **put on the table**.⁹⁹

In this same time frame, signs appeared of a new North Korean approach to Moscow. In a message to Russian President Vladimir Putin on the Korean Liberation Anniversary (August 15), Kim Jong Un went beyond routine language, expressing the belief that:

...the friendly and cooperative relations between the two countries with long history and traditions would grow stronger onto a new strategic level on the basis of the agreements reached at the 2019 meeting in Vladivostok.¹⁰⁰

In September, the DPRK Foreign Ministry’s website carried an article on the long-running dispute between Russia and Japan over the southern Kuril Islands, which had been claimed by Japan but awarded to the Soviet Union at several Allied conferences during World War II.¹⁰¹ This Russian-Japanese territorial dispute is right in the North’s backyard, and even though Pyongyang regularly bashed Japan on a range of topics, this was not one that had previously received much attention. The September article was written as a historical primer, even-handedly presenting both the Japanese and Russian positions, though it implied support for the Russian claims. North Korean articles appearing on the dispute over the next several months, however, were noticeably more forthright in backing the Russian claims.

Suggesting broader policy was not yet fixed, Pyongyang also reintroduced the concept of “balance” and eased off references to “deterrence” in its discussions of military power during this same period. In his September 30 address to the Supreme People’s Assembly, for instance, Kim Jong Un spoke of the development of new weapons systems as “ensuring the stable control of the instable military situation” around Korea, while accusing the United States and South Korea of “destroying the stability and balance.”¹⁰²

Another sign suggesting that there had not yet been a final decision on a major policy shift was Kim Jong Un’s cool and rational treatment of both South Korea and the United States at a large Defense

⁹⁹ “U.S. Double-Dealing Attitude Is Main Stumbling Block in Settling Korean Peninsula Issue,” Korean Central News Agency, September 17, 2021. This terminology, “put on the table,” mimics Kim Jong Un formulation in July 2017. We can only surmise that was no accident.

¹⁰⁰ “Respected Comrade Kim Jong Un Sends Congratulatory Message to Russian President,” Korean Central News Agency, August 15, 2021.

¹⁰¹ “Prospect is Bleak for the Settlement of Territorial Conflict between Russia and Japan,” DPRK Foreign Ministry website, September 26, 2021.

¹⁰² A similar shift in emphasis—away from references to “deterrence” and to emphasis on “balance”—had occurred in 2017. At that time, while Kim was ramping up WMD development through missile and nuclear tests, Pyongyang began stressing the importance of achieving a “balance” or, in some cases, a “practical equivalence” with the U.S. Robert Carlin, “North Korea: New Terminology Portends Ongoing Policy Shift” 38north.org, October 5, 2021, <https://www.38north.org/2021/10/north-korea-new-terminology-portends-ongoing-policy-shift/>.

Exhibition in Pyongyang on October 12.¹⁰³ The Moon Jae-in government, with whom Pyongyang had gone through a period of productive dialogue (2018-2019), was near the end of its term in office, and the North knew it was looking at a new administration taking power by May 2022. When criticizing the South, Kim framed the problem in broader terms of regional stability rather than a direct threat to the North, an issue of “hurt feelings” rather than existential threat:

[South Korea’s] hypocritical attitude and the US tacit sponsorship continue to damage the inter-Korean feelings and emotions and their unlimited, dangerous attempts to strengthen military capability are **breaking the military equilibrium** in the region of the Korean peninsula and **aggravating the military instability** (emphasis added) and danger there.

We express deep regret over such avaricious ambition and their double-dealing, illogical and brigandish attitude that causes unfairness to and hurt the feelings of the other side....

But, if south Korea does not find fault with us in a stubborn manner and if it does not pick a quarrel even with our exercise of national sovereignty, I assure that no tension will be caused on the Korean peninsula.

Were it not for it, we will not be involved in verbal confrontation with south Korea nor have any reason to be so.

Kim then revived a theme he had used in his final letter (August 2019) to President Trump, that “South Korea is not the target of our armed forces.” To reinforce that point, he repeated, “Undoubtedly, we are not strengthening our defense capability targeting at south Korea.”

The language that followed was noteworthy because of how different it was from Pyongyang’s stance four months later.

I want to make sure once again: We are not talking about a war with someone; we are building up war deterrent true to the meaning of the words in order to prevent the war itself and to safeguard the sovereignty of our state. Our war deterrent and south Korea’s so-called capability to contain the north are different concepts in vocabulary, meaning and essence.

Our archenemy is war itself, not south Korea, the United States or any other specific state or forces.

Kim then turned his attention to the United States, portraying it as the core of the problem but not an existential threat to the North or even the creator of a situation beyond repair. Acknowledging oft-repeated statements from Washington over the past year that it sought to engage the North, Kim did not dismiss these out of hand. Instead, he took a softer approach that seemed to provide an opening: The United States was not guilty of hostility but “wrong judgment.”

Recently, the United States has frequently sent signals that it is not hostile to our state, but its behavior provides us with no reason why we should believe in them.

¹⁰³ “Kim Jong Un Makes Commemorative Speech at Defence Development Exhibition,” Korean Central News Agency, October 12, 2021.

Sure enough, it is not fools alone that live in the world. I wonder if there is any person or state who believes in its claim that it is not hostile to the DPRK and, if any, I am curious to know who they are.

The United States is still generating regional tension with its **wrong judgment** (emphasis added) and acts.

What is clear is that the unstable situation in the region of the Korean peninsula cannot be easily removed because of the United States.

Possibly reflecting signs of continuing concern in the leadership over the proper balance between civilian and military spending and the fate of the economic reform measures, Kim addressed the issue in a way that suggested the needle might be swinging back to defense spending, with implications for his reform policies of the previous eight years:

The main contents are to further strengthen the already-gained war deterrent in terms of both quality and quantity and further accelerate the development and production of strategic and tactical means essential for guaranteeing national security.

Of course, the economic situation in the country is still difficult and other sectors must have important and pressing tasks. All the sectors, however, should never forget the overriding importance of consolidating the defense capability, and remember that any development and success of our revolution is inconceivable separated from the preferential development of the national defense capability.

Without strong self-defense capability we can neither expect successful progress of the internal and external policies of the Party and the government nor think about stability and peaceful environment of the country.

Soon after Kim's remarks at the October Defense Exhibition, the foreign ministry issued a statement responding to U.S. criticism of a recent missile test.¹⁰⁴ "It **truly concerns us** (emphasis added. This is a noticeably mild formulation) that the U.S. is showing abnormal reactions to the exercise of the right to self-defense proper and just to a sovereign state." The statement reiterated Kim's recent stance that neither South Korea nor the U.S. were the North's "arch-enemies" and indicated that the recent missile test-firing was not done with the United States in mind. For that reason, the U.S. criticism "only **excites our suspicion...**" (also a mild formulation).

The next day, a vice foreign minister released a statement with a tougher line on Taiwan than had appeared a month earlier. This new statement more forcefully supported the PRC position and most important, directly linked the Taiwan issue with North Korea, claiming that U.S. bases in South Korea are used to "put pressure on China," while U.S. forces being concentrated near Taiwan "can be committed to a military operation targeting the DPRK at any time."¹⁰⁵ The statement asserted that the Taiwan issue is "on no account, irrelevant to the situation of the Korean peninsula," and pointedly warned that, "The indiscreet meddling by the U.S. into the issue of Taiwan entails a potential danger of touching off a delicate situation on the Korean peninsula."

¹⁰⁴ "Answer of Spokesperson for DPRK Foreign Ministry," Korean Central News Agency, October 21, 2021.

¹⁰⁵ "U.S. Reckless Meddling in Taiwan Issue Blasted," Korean Central News Agency, October 23, 2022.

All of this was prelude to a week of highly unusual, intense diplomatic activity between the DPRK, China, and Russia in early November 2021. On November 5, Pyongyang reported that one of its vice foreign ministers met with the Russian ambassador. The same day, another vice foreign minister met with the PRC ambassador. Also—and surely this was no coincidence—on November 5, the DPRK ambassador to China met with the assistant PRC foreign minister, with the North reporting there had been agreement “to continue to strengthen the strategic and tactical cooperation in the future.”¹⁰⁶ On November 11, the North reported that its ambassador in Moscow had met with Russian vice minister of foreign affairs.¹⁰⁷ Finally, on December 16, the Director General of the DPRK foreign ministry’s European Affairs Department met with the Russian ambassador, where they “exchanged views on major international issues of mutual concern.” Any one of these meetings in isolation would not have been noteworthy. But in combination, it seems likely that they reflected important changes that were underway in the North’s policy, notably in its relations with both China and Russia.

Confirmation of such appeared in January and February, when there was a concerted (and seemingly coordinated) effort by the three capitals to press the United States to take “practical action” to deal with Korean issue. This came at a time when Pyongyang was moving decisively to the new strategic foreign policy line and international tension was building over the Ukraine issue. Whether this push for “practical” U.S. action was a last-ditch effort by the three to elicit a new response from Washington or merely a distraction is impossible to tell without more access to their files.

The new-found emphasis on DPRK-PRC relations came into sharp focus on November 11 when the North’s foreign ministry website, reporting remarks on Taiwan by the Chinese foreign minister, reiterated Pyongyang’s recently expressed official position “that on no account is the situation of Taiwan irrelevant to the situation on the Korean peninsula and that we will continue to watch very closely the American move for holding hegemony over the issue of Taiwan in a broader context of correlation with the situation on the Korean peninsula.”¹⁰⁸ These comments were followed by a burst of articles on the website pegged to the Taiwan issue.

Then, beginning December 7, the North began publicly dealing with the Ukraine issue and backing Moscow’s position. An article on the North’s foreign ministry website that day cited Putin’s warning that the West was playing down Russian’s security concerns.¹⁰⁹ The article took the Russian line that tensions on the Russo-Ukraine border were the result of “the anti-Russia confrontational policy of the U.S. for seeking to expand the NATO’s military infrastructure to the very front yard of Russia.” A week later, the website ran another article on Russia, noting Moscow’s protest over Washington’s call for a reduction of Russian diplomats in the United States.¹¹⁰ A few days after that came an item noting incidents between U.S. reconnaissance planes and a Russian passenger plane.¹¹¹ Shortly

¹⁰⁶ “DPRK Ambassador to China Meets with Assistant to Chinese Foreign Minister,” DPRK Foreign Ministry website, November 6, 2021.

¹⁰⁷ “DPRK Ambassador met Vice Foreign Minister of Russia,” DPRK Ministry of Foreign Affairs website, November 12, 2021.

¹⁰⁸ “US Needs to Approach Taiwan with Discretion,” DPRK Ministry of Foreign Affairs website, November 11, 2021.

¹⁰⁹ “Inveterate Repugnance,” DPRK Ministry of Foreign Affairs website, December 7, 2021.

¹¹⁰ “Diplomatic Dispute That Cannot Be Easily Settled,” DPRK Ministry of Foreign Affairs website, December 14, 2021.

¹¹¹ “Who is Behind Destruction and Disturbance of Global Peace?” DPRK Ministry of Foreign Affairs website, December 19, 2021.

thereafter, an article appeared headlined, “Russian Censures Attempts of Pressure by U.S. and the West over Ukrainian Issue.”¹¹²

The dam finally broke with a Korean Workers’ Party Politburo meeting on January 19, 2022.¹¹³ The meeting squarely took up the question of confronting the United States, adopting a tone completely different from the one Kim Jong Un had used the previous October. The meeting discussed “countermeasures against the US for the future,” portraying a situation in which U.S. actions in the “last few years alone after the DPRK-US summits” were “seriously threatening” DPRK security. Gone were the conditional constructions leaving open the possibility of engagement with the United States. Instead, the future was described in terms of implacable enmity and “long term confrontation”:

All the facts clearly prove once again that the hostile policy towards the DPRK will exist in the future, too as long as there is the hostile entity of U.S. imperialism.

Assessing that the hostile policy and military threat by the U.S. have reached a danger line that cannot be overlooked any more despite our sincere efforts for maintaining the general tide for relaxation of tension in the Korean peninsula since the DPRK-U.S. summit in Singapore, the Political Bureau of the Party Central Committee unanimously recognized that we should make more thorough preparation for a long-term confrontation with the U.S. imperialists.

Moving beyond rhetoric, the meeting “concluded to take a practical action to more reliably and effectively increase our physical strength for defending dignity, sovereign rights and interests of our state.” The instructions were specific:

... to a sector concerned to reconsider in an overall scale the trust-building measures that we took on our own initiative on a preferential ground and to promptly examine the issue of restarting all temporarily suspended activities. [e.g., long-range missile and nuclear tests].

The Politburo meeting had been preceded by six missile launches in the first weeks of January—three medium-range and three short-range. After that, the pace picked up even more. On January 30 the North launched an IRBM, followed by tests on February 27 and March 5 which, according to the United States, were preliminary test launches for an ICBM. On March 24 came the first launch of what the North claimed was a new ICBM, the HS-17—finally breaking the 2018 commitment not to launch ICBMs. At the same time, work was resumed at the Punggye-ri nuclear test site to prepare one of the nuclear test tunnels. Clearly, the pattern of the years since 2018 was changing.

Meanwhile, the North was watching the geopolitical landscape shift, beginning with the February 4 Xi-Putin joint statement. Curiously, DPRK media did not acknowledge the joint statement, though the North reported that a vice foreign minister met with the Russian ambassador three days later, almost certainly to get a readout.¹¹⁴ It took a few weeks for the North to decide how to deal publicly

¹¹² “Russia Censures Attempts of Pressure by U.S. and the West Over Ukrainian Issue,” DPRK Ministry of Foreign Affairs website, December 24, 2021; the next day the ministry website carried an item titled “Russian President Censures U.S. for Increased Tension in Europe.”

¹¹³ “6th Political Bureau Meeting of 8th C.C., WPK Held,” Korean Central News Agency, January 20, 2022.

¹¹⁴ “Vice Foreign Minister Meets with Russian Ambassador,” DPRK Foreign Ministry website, February 8, 2022.

with the February 24 Russian invasion of Ukraine. On February 28, a foreign ministry spokesman vaguely addressed the “Ukraine crisis” without any detail.¹¹⁵ Not until March 14 did an article on North’s foreign ministry website refer to Russia’s “military operation” in Ukraine and cite both Putin’s and Russian Foreign Minister Sergei Lavrov’s defense of Moscow’s actions; the article concluded with full support for Moscow, claiming that, “All the above facts clearly show that the root of and the responsibility for the Ukrainian crisis lie in the U.S. and its vassal forces, and that the mastermind who endangers global peace and security of humankind is none other than the U.S.”¹¹⁶ The same day, a second article on the website argued that, “In recent days, the U.S. is further worsening the Ukrainian crisis with its large-scale military aid to Ukraine.”¹¹⁷

From that point, the ripples of the pattern break appeared in every widening circles. The North accelerated the development and testing of weapons systems that were already part of a 5-year defense plan; it announced increasingly destabilizing policies on the use of force, moving to a declared preemptive nuclear strike option and a dead-hand policy of mandating decisionmaking for the use of nuclear weapons at lower levels in case central command authority was destroyed, this in response to high-profile ROK advocacy of “decapitation”; it reported that tactical nuclear weapons had been assigned to front line units, which began operational practice. On April 25, 2022, in a speech at a major military parade,¹¹⁸ Kim Jong Un made explicit what had previously been carefully hedged in the North’s public explanation of its nuclear use policy, proclaiming:

The fundamental mission of our nuclear forces is to deter a war, but our nukes can never be confined to the single mission of war deterrent even at a time when a situation we are not desirous of at all is created on this land. If any forces try to violate the fundamental interests of our state, our nuclear forces will have to decisively accomplish its unexpected second mission.

Once the new Yoon administration took office in the ROK in May 2022 and U.S.-ROK joint military exercises ramped up and reached levels not seen in years, an action-reaction cycle took hold.

As the North moved to align itself with the PRC and Russia, it abandoned its efforts to normalize relations with the United States. During the rest of 2022 and into 2023, Pyongyang moved away from its dual-track policy—nuclearization plus diplomacy—to develop fully as a nuclear weapon state, both in its military capabilities and its policies. At the Sixth Party Plenum in December 2022, it was decided that the national defense strategy for 2023 would entail “mass-producing tactical nuclear weapons” and “an exponential increase of the country's nuclear arsenal.”¹¹⁹ In line with that, on March 28, while viewing work on mating nuclear warheads to missiles, Kim called for expanding the production of weapons-grade nuclear materials and production of “powerful nuclear

¹¹⁵ “Answer of Spokesman for Ministry of Foreign Affairs of the DPRK,” Korean Central News Agency, February 28, 2022.

¹¹⁶ “What Does the Reality Show?” DPRK Ministry of Foreign Affairs, March 14, 2022.

¹¹⁷ “United States-Main Culprit of ‘National Proliferation Financing Risk,’” DPRK Ministry of Foreign Affairs website, March 14, 2022.

¹¹⁸ “Respected Comrade Kim Jong Un Makes Speech at Military Parade Held in Celebration of 90th Founding Anniversary of KPRA,” Korean Central News Agency, April 26, 2022.

¹¹⁹ “Report on 6th Enlarged Plenary Meeting of 8th WPK Central Committee,” Korean Central News Agency, January 1, 2023.

weapons.”¹²⁰ These efforts may necessitate additions to the country’s uranium enrichment capacity and, more importantly, fixing the problems with the experimental light water reactor to increase the stockpile of plutonium and tritium. On the missile front, in April Kim was present for the launch of the solid-fueled Hwasong-18 ICBM that increases the threat posed to the U.S. mainland. In Kim’s words, the development of the HS-18 would “extensively reform the strategic deterrence components of the DPRK, radically promote the effectiveness of its nuclear counterattack posture and bring about a change in the practicality of its offensive military strategy.”¹²¹

There is no way to know at this point how long the North’s new policy will last. There should be no mistake—what we’ve seen since January 2022 is not a tactical feint or an effort by Pyongyang to gain “leverage.” To the contrary, it has been a fundamental break with the policy of the previous thirty years, the result of a strategic decision certainly by Kim Jong Un but more broadly by the leadership that will have long-term consequences for the Korean Peninsula and Northeast Asia. That is not to argue that Pyongyang won’t open the door again to engagement with the United States, but when it does, the door will almost certainly lead to a fundamentally different room. In effect, through three North Korean leaders, the United States encountered a single, basic effort by the North not only to engage but to normalize relations with Washington to achieve the long-term, strategic goal of freeing itself as much as possible from PRC dominance. The pattern break of 2022 was not the result of a snap decision but came after years of weighing the alternatives and calculating the costs. It will require a new, concerted effort in Washington to understand how the North now sees its place in the strategic landscape in Northeast Asia, how it perceives its constraints and its opportunities. Strategic empathy requires getting beyond the common wisdom that has much too often shackled thinking about North Korea by analysts and policymakers alike. The lack of strategic empathy has led to years of bad decisions. It could yet prove fatal.

¹²⁰ “Respected Comrade Kim Jong Un Guides Work for Mounting Nuclear Warheads on Ballistic Missiles,” Korean Central News Agency, March 28, 2023.

¹²¹ “Another Mighty Entity Showing Continuous Development of Strategic Force Unveiled in DPRK Respected Comrade Kim Jong Un Guides First Test-Fire of New-Type ICBM Hwasongpho-18 on the Spot,” Korean Central News Agency, April 14, 2023.

CHAPTER SIX

The Iran-Iraq War, 1980-1988

Jim Lamson

Introduction

This chapter—the first in a series of three in this report focused on the Islamic Republic of Iran (IRI)—examines the Iran-Iraq War, which lasted from 1980-1988. While much has been written about this conflict, both primary and secondary sources speak to its suitability for pattern break analysis. Indeed, according to both Western and Iranian accounts and as described below, Iranian officials were surprised and shocked by several aspects of the war—elements that had serious, long-term implications for Iran’s acquisition, threat, and use of strategic weapons. Additionally, Iran experts have identified the Iran-Iraq War as a pivotal point—what they have termed a “catalyst event”¹ or “contingent event”²—for the evolution of Iranian military strategy and weapons acquisition over the long term.

In contrast with some of the other pattern breaks examined in this report, this chapter frames the Iran-Iraq War not as a single, discrete event but rather as a cumulative set of shocks that drove and shaped Iran’s acquisition, threat, and use of strategic weapons both during and after. As it argues, the most significant of these were related to Iraqi actions in its conduct of the Iran-Iraq War. After the initial surprise of Iraq’s initial invasion in September 1980, it finds that three such developments in particular drove Iran’s acquisition, threat, and use of strategic weapons as the war was ongoing. These were (1) the shock of Iraq’s air and missile attacks on Iranian non-military targets, including population and industrial centers, in several phases of what was called the “War of the Cities;” (2) Iraqi air and missile attacks on Iranian oil shipping, oil facilities, and shipment of goods into Iran—the so-called “Tanker War;” and (3) Iraq’s extensive use of chemical weapons (CW) against Iran’s military and population.³

In addition, however, this chapter also argues that the reaction of the international community to the war came as a surprise to Iran and affected its acquisition, threat, and use of strategic weapons in important ways. Specifically, it finds that Iranian officials were shocked by what they perceived to be

¹ Ariane M. Tabatabai and Annie Tracy Samuel, “What the Iran-Iraq War Tells Us about the Future of the Iran Nuclear Deal,” *International Security*, Vol. 42, No. 1 (Summer 2017), p. 155. According to the authors, Western scholars and analysts have failed to “understand the full impact of the Iran-Iraq War on Iranian decisionmaking.” (Ibid., p. 154.)

² Erik A. Olson, “Iran’s Path Dependent Military Doctrine,” *Strategic Studies Quarterly*, Vol. 10, No. 2 (Summer 2016), pp. 72-77. In defining “contingent events,” Olson quotes sociologist James Mahoney, who stated that such events “set into motion institutional patterns or event chains that have deterministic properties”—a description highly fitting to impact of the war as a pattern break on Iran.

³ In addition, Iranian officials highlighted the Iraqi targeting of non-military aircraft, including civilian airliners. For example, in March 1985, Iraq warned that civilian aircraft would not be safe flying in Iranian airspace, and in February 1986, Iraqi warplanes shot down an Iranian civilian airliner carrying government officials flying in southwestern Iran. (Charles P. Wallace, “Iran Officials Die as Iraq Shoots Down Civilian Jet,” *Los Angeles Times*, February 21, 1986, <https://www.latimes.com/archives/la-xpm-1986-02-21-mn-10205-story.html>.)

the lack of response by both the United Nations and individual countries to the Iraqi actions above, especially its missile and CW attacks, and by the foreign military, intelligence, financial, and logistical support Iraq received from Arab states in the Persian Gulf, the United States, and other countries during the war. It also determines that, in the final year of the war, the Iranians were surprised by the United States' use of military force against Iran, including Operation Praying Mantis as well as the U.S. Navy's accidental shootdown—perceived as intentional by Tehran—of an Iranian civilian airliner. Lastly, it concludes that end of the war itself constituted a final shock to Iran: Despite eight brutal years of fighting, Iraq remained a strategic rival and a perceived military threat, and the United States had increased its military presence in the region.

As this chapter will show, these cumulative shocks and surprises both drove the origins of the IRI's acquisition, threat, and use of strategic weapons and laid important foundations for strategy and acquisition that would influence its efforts in these areas for decades. In so doing, however, the analysis presented here broadens the discussion of “strategic weapons” in terms of both effects and range beyond the traditional *sine qua non* example of a “strategic weapon”—that is, a nuclear weapon delivered by missile or bomber across a range of 1,000s of kilometers (km).⁴ This scoping choice reflects the fact that, although Iranian officials have not offered an official definition of what they mean by “strategic weapons” (*taslibat-e rabbordi* and other Persian-language terms), statements by Iranian political and military leaders suggest that they view ballistic missiles, cruise missiles, and—more recently—long-range armed and suicide UAVs with ranges of at least hundreds of kilometers as types of “strategic weapons.” There does not appear to be a specific Iranian requirement in terms of ranges or effects for “strategic” weapons, unlike in the U.S.-Soviet or U.S.-Russia contexts.

To the contrary, the ranges of strategic value in Iran are shorter than those in U.S.-Russia or U.S.-China dyads, or other rivalries, due to the nature of Iran's geography and perceived threats. For instance, during the Iran-Iraq War, Iran's ability to strike Baghdad (approximately 150-200 km from firing positions within Iranian territory) and other key targets in Iraq did not require weapons with ranges of 1,000s of km. Iran requires weapons with a range of approximately 1,200 km to strike Israel from Iranian territory, hundreds of kilometers to strike many important U.S. military targets in the region, and hundreds of kilometers to strike naval targets located within the Persian Gulf or approaching it in the Gulf of Oman. On this basis, this chapter and those that follow apply the concept of weapons with “strategic effects” articulated in the introduction to this report (see “Operationalizing Strategic Empathy”) and include a wide range of Iranian weapons as “strategic,” such as conventionally armed long-range strike weapons like ballistic missiles, long-range artillery rockets, cruise missiles, and UAVs, in addition to nuclear, chemical, and biological weapons.

Having thus defined the scope and unit of analysis for this study, the remainder of this chapter proceeds as follows: first, it examines the Iran-Iraq War pattern break in detail and Iran's responses to it. Then, it highlights Iran's patterns for the acquisition, threat, and use of strategic weapons at the time of the war itself and, importantly, in the years and decades to follow. In the process, it focuses both on Iran's approaches toward military strategy—the threat and use of strategic weapons—and

⁴ For instance, see: Herbert Scoville Jr., “Strategic Weapons and their Control,” *India International Centre Quarterly*, Vol. 5, No. 3 (1978), pp. 147-154. However, even in the more clearcut U.S.-Soviet context, things were not always simple: During the Strategic Arms Limitation Treaty (SALT) negotiations, the Soviets wanted to include any U.S. weapon that could reach key targets in the Soviet Union from Europe as a “strategic weapon.” (Dennis Evans, *Strategic Arms Control Beyond New START: Lessons from Prior Treaties and Recent Developments* (national security report, Johns Hopkins Applied Physics Laboratory, 2021) p. 43.

its reported and suspected acquisition of ballistic and cruise missiles, long-range artillery rockets, CW, nuclear weapons, and biological weapons (BW) to support that strategy. The results show how the pattern break of the Iran-Iraq War created the origins and set the foundation in important ways for Iran's acquisition, threat, and use of strategic weapons in the following years and decades—with important implications for the other Iranian pattern breaks that follow.

Initial Pattern

What was Iran's baseline "pattern" for the acquisition, threat, and use of strategic weapons before the Iran-Iraq War? The short answer is that there *was* no real pre-war pattern. With the Islamic Revolution, the removal of the Shah, and the establishment of the Islamic Republic of Iran (IRI), there was no baseline for Iranian strategic weapons with the outbreak of war in 1980. Instead, as Iranian officials often remark about the start of the war, "our hands were empty" (*dast-eman kbali bud*)—an observation that was true both of actual strategic weapons and the defense industries to produce them.

In the area of ballistic missiles, long-range artillery rockets, and other conventional-strike missiles, for instance, the IRI began in 1979 with very few capabilities. Joseph Bermudez states that with the outbreak of war in 1980, "Iran had no long-range artillery rocket or ballistic missile capabilities to speak of."⁵ During the 1970s, the Shah unsuccessfully sought to purchase ballistic missiles, including the U.S. Lance⁶ and Soviet Scud,⁷ and also to acquire the Israeli Jericho ballistic missile through a joint project with Israel.⁸ The Shah also sought unspecified land-based missiles—unclear whether ballistic or cruise—from the United States to enable Iran to target the entire Strait of Hormuz.⁹ Pre-revolution Iran had acquired various types of short-range conventional strike weapons, including unguided BM-21 artillery rockets from the Soviet Union,¹⁰ short-range U.S. Harpoon and Italian Sea

⁵ Joseph S. Bermudez, Jr., "Iran's Missile Development," in William C. Potter and Harlan W. Jencks, eds., *The International Missile Bazaar: The New Suppliers' Network* (Boulder: Westview Press, 1994), p. 47.

⁶ Sidney Sober, "Your Meeting with the Shah at Blair House," Confidential Briefing Memorandum to Secretary of State Henry Kissinger, May 9, 1975, Department of State, Bureau of Near Eastern and South Asian Affairs, in Digital National Security Archive collection: Iran Revolution.

⁷ "Memorandum From Robert B. Oakley of the National Security Council Staff to the President's Assistant for National Security Affairs (Scowcroft)," Washington, December 10, 1976, Monica L. Belmonte, ed., *Foreign Relations of the United States, 1969–1976, Volume XXVII, Iran; Iraq, 1973–1976*, <https://history.state.gov/historicaldocuments/frus1969-76v27/d196>.

⁸ "Iranian reports Israel had pact for missile," *Globe and Mail*, 3 February 1986; Ronen Bergman, *The Secret War with Iran: The 30-Year Clandestine Struggle Against the World's Most Dangerous Terrorist Power* (New York: Free Press, 2008), pp. 12-14; "Minutes from Meeting Held in Tel Aviv between H.E. General M. Dayan, Foreign Minister of Israel, and H.E. General H. Toufanian, Vice Minister of War, Imperial Government of Iran," Digital National Security Archive collection: Nuclear Nonproliferation, Israeli Ministry of Foreign Affairs, Top Secret, Minutes, July 18, 1977; "pasokh be nabard-e makhfi ba Iran, schonist-ha chetor ba shah-e Iran raftar mikardand" [response to the secret war with Iran, how did the Zionists treat the shah of Iran?], *Tasnim News Agency*, 30 Farvardin 1400 [April 19, 2021], <https://www.tasnimnews.com/fa/news/1400/01/30/2487493/>.

⁹ "Memorandum From the Joint Chiefs of Staff to the Assistant Secretary of Defense for International Security Affairs (Warnke)," DJSM 790–68, Washington, June 25, 1968, *Foreign Relations of the United States, 1964–1968, Volume XXII, Iran*, <https://history.state.gov/historicaldocuments/frus1964-68v22/d300>; Walter S. Poole, "The Joint Chiefs of Staff and National Policy: 1965-1968," History of the Joint Chiefs of Staff, Office of Joint History, Office of the Chairman of the Joint Chiefs of Staff, Washington, D.C., 2021, https://www.jcs.mil/Portals/36/Documents/History/Policy/Policy_V009.pdf, p. 188.

¹⁰ A.T. Schulz, "Iran: an enclave arms industry," in Michael Brzoska and Thomas Ohlson, eds., *Arms Production in the Third World* (London: Taylor and Francis, 1986), p. 151; "Recent Trends in Iranian Arms Procurement," Intelligence Memorandum ER IM 72-79, May 1972, *Foreign Relations of the United States, 1969-1976, Volume E-4, Documents on Iran*

Killer¹¹ anti-ship cruise missiles,¹² and short-range U.S. Maverick and French AS-12 air-to-surface missiles.¹³ Still, at the onset of war in 1980, Iran lacked any significant means—apart from its U.S.-provided inventory of F-4 fighter-bomber aircraft—for conventional long-range strikes.

When it came to acquiring weapons of mass destruction, Iran also appeared to have little interest or capacity prior to 1979. Indeed, despite one unsourced claim,¹⁴ Iran seems to have had no CW ambitions or capabilities, and later during the war, Iran’s war commander Ayatollah Ali Akbar Hashemi Rafsanjani¹⁵ reportedly criticized the Shah’s government for its lack of preparation for CW offense and defense.¹⁶ Likewise, according to Gregory Giles, in 1979, the IRI had “no biological warfare program,” either.¹⁷ In the nuclear sector, despite the Shah’s grand ambitions for a nuclear energy program and ambiguous public statements about his intentions to eventually acquire nuclear

and Iraq, 1969-1972, <https://history.state.gov/historicaldocuments/frus1969-76ve04/d181>; “The Middle East and the Mediterranean,” *The Military Balance*, Vol. 79, No. 1 (1979), p. 39.

¹¹ Anthony H. Cordesman and Abraham R. Wagner, *The Lessons of Modern War, Volume 2: The Iran-Iraq War* (Boulder: Westview Press, 1990), pp. 63-64, 272-273; “The Middle East and the Mediterranean,” *The Military Balance*, Vol. 79, No. 1 (1979), p. 39.

¹² In July 2020, IRGC Navy commander Alireza Tangsiri stated that before the revolution, Iran’s longest range naval missile was the 45-km-range Harpoon (“daryadar Tangsiri: shahr-ha-ye zir-zamini-e niru-ye daryai dar hameh savahel-e jonub gostarsh yafteh ast” [admiral Tangsiri: underground cities of the naval force spread all over the southern coast], *Tasnim News Agency*, 15 Tir 1399 [July 5, 2020], <https://www.tasnimnews.com/fa/news/1399/04/15/2300243/>). However, Iran’s Harpoon missiles were reportedly inoperable for the most part, due to problems with maintenance and spare parts. (Cordesman and Wagner, *The Lessons of Modern War*, pp. 272-273; “In 1980s Battle With America, Iran Held Back Its Deadliest Missiles,” *War is Boring*, April 19, 2014, <https://medium.com/war-is-boring/in-1980s-battle-with-america-iran-held-back-its-deadliest-missiles-2fc05c4a991d>.) According to David Crist, in 1986, Iran had only one functioning Harpoon missile, deployed on the missile boat Joshan (David Crist, *The Twilight War: The Secret History of America’s Thirty-Year Conflict With Iran* (New York: Penguin Books, 2012), pp. 207, 343, 345.). During the war, Rafsanjani highlighted Iran’s reliance on Western weapons as one of the “enduring challenges” (*daghdagheb-ha-ye daemi*) during the war, with a lack of spare parts and logistics capabilities causing many of its Western-supplied weapons such as missiles and aircraft to be inoperable. (Diary of Ayatollah Hashemi Rafsanjani, *Omid va Delvapas* [hope and anxiety], p. 18)

¹³ “The Middle East and the Mediterranean,” *The Military Balance*, Vol. 79, No. 1 (1979), p. 39; SIPRI Arms Transfer Database, https://armstrade.sipri.org/armstrade/page/trade_register.php.

¹⁴ Pierre Razoux claims that “Tehran had an extremely limited stock of chemical munitions acquired under the Shah,” but provides no sourcing for this claim. (Razoux, *The Iran-Iraq War*, pp. 300-301.)

¹⁵ Often described as the head of the Majles (Iran’s parliament)—which is accurate—Rafsanjani during the war was also, more importantly, Iran’s *de facto* war commander (*farmandeh-ye jang*) and *de facto* commander-in-chief of the armed forces (*farmandeh-i kol-e ghova*), representing Ayatollah Khomeini. In these capacities, Rafsanjani was the most important leader in the day-to-day execution all aspects of Iranian wartime policy and strategy, pursuant to the strategic leadership and guidance of Khomeini. Indeed, many viewed Rafsanjani as the second most powerful leader after Ayatollah Khomeini. This included Rafsanjani’s deep involvement in the details and decisions of Iranian military strategy and weapons acquisition. Rafsanjani was also Khomeini’s representative to the Supreme Defense Council—which oversaw Iran’s wartime policymaking—and served as the council’s spokesperson. Wearing all of these hats, Rafsanjani was, according to Pierre Razoux, “concurrently responsible for chairing Parliament, managing the regime’s finances, and leading the war effort.” (Pierre Razoux, *The Iran-Iraq War* (Cambridge: Belknap Press, 2015), p. 178.)

¹⁶ Ahmed Hashim, “Iran’s Military Situation,” in Patrick Clawson, ed., *Iran’s Strategic Intentions and Capabilities*, McNair Paper No. 29 (Washington, D.C.: National Defense University Press, 1994), p. 211.

¹⁷ Gregory Giles, “The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons,” in Peter R. Lavoy, Scott D. Sagan, and James J. Wirtz, eds., *Planning the Unthinkable: How New Powers Will Use Nuclear, Biological, and Chemical Weapons* (New York: Cornell University Press, 2000), p. 81.

weapons,¹⁸ Iran in 1979 also had no clear nuclear weapons intentions or capabilities.¹⁹ According to David Patrikarakos, U.S. concerns about Iranian nuclear intentions in the 1970s “centered on Iran’s future intentions or its future capabilities” while its actual program “caused little alarm.”²⁰

The IRI also inherited little from the Shah in terms of military strategy regarding the threat and use of military force and lacked a coherent military strategy from 1979 to the outbreak of war in 1980. Simply put, the Shah, with his significant conventional military—across ground, air, and naval forces—had relied on deterrence and defense as well as, importantly, the military backing and advanced weaponry of the United States for his military strategy. With the 1979 revolution, Iran changed almost overnight from the status of a major regional military power and close ally of a superpower to a country with a military in turmoil and lacking any strong allies. The IRI rejected Western-based military strategy and planning and also fired, arrested, and executed many military officers.²¹ According to retired Artesh²² general Abdolhossein Mofid, before the war, Iran lacked a military strategy for defense or fighting a war, in contrast to Iraq’s strategy and goals in starting the war.²³ Echoing this view, in 2004 Iranian defense minister Ali Shamkhani stated that, before the war, Iran had no plans for strategic deterrence and defense.²⁴

The organizations that would later acquire, deploy, and use strategic weapons were in a similarly chaotic or inchoate state during the pre-war period. The Artesh was in turmoil, and its affiliated Defense Ministry—which was responsible for supplying weapons to the Artesh—was transitioning from the Shah’s government to its new existence under the IRI. Iran had just established a new parallel counterpart to the Artesh, the Islamic Revolutionary Guard Corps (IRGC), in 1979, which was focused on internal security rather than foreign defense and lacked organization, structure, and weapons. According to Matthew McInnis, “the postrevolutionary Artesh was in a state of complete flux when Saddam Hussein invaded in 1980. The IRGC, on the other hand, was a brand-new

¹⁸ For example, in 1974, the Shah stated that “If in this region each little country tries to arm itself with armaments that are precarious, even elementary, but nuclear, then perhaps the national interests of any country at all would demand it do the same.” Also, in response to a question whether Iran would eventually possess nuclear weapons, he stated, “Without any doubt, and sooner than one would think.” (U.S. Department of State cable, U.S. Embassy in Paris, “Further Remarks by Shah on Nuclear Weapons,” June 25, 1974, National Security Archive, <https://nsarchive2.gwu.edu/nukevault/ebb521-Irans-Nuclear-Program-1975-vs-2015/01.pdf>; U.S. Department of State cable, U.S. Embassy in Tehran, “Shah’s Alleged Statement on Nuclear Weapons,” June 25, 1974, National Security Archive, <https://nsarchive2.gwu.edu/nukevault/ebb521-Irans-Nuclear-Program-1975-vs-2015/02.pdf>.)

¹⁹ However, Sina Azodi claims that, according to unspecified U.S. intelligence reports that he reviewed, “the Iranian military had begun working on the design of nuclear explosive devices by 1978.” (Sina Azodi, “Iran’s nuclear program has a long history of advances, setbacks and diplomatic pauses,” *Commentary*, Stimson Center, June 28, 2023, <https://www.stimson.org/2023/irans-nuclear-program-has-a-long-history-of-advances-setbacks-and-diplomatic-pauses/>.)

²⁰ David Patrikarakos, *Nuclear Iran: The Birth of an Atomic State* (London: I.B. Taurus, 2021), p. 80.

²¹ Nikola B. Schahgaldian, *The Iranian Military Under the Islamic Republic* (Santa Monica: RAND Corporation, 1987), pp. 18-27.

²² This chapter refers to Iran’s traditional, regular military as the Artesh, which is separate from the Islamic Revolutionary Guard Corps (IRGC) that was created in 1979.

²³ Mohammad Dorudian, *Naghbi Bar Dars-ha va Dastavard-ha-ye Jang: Goftegu ba Farmandeban va Masulan-e Jang* [going through war lessons and achievements: discussions with war commanders and officials], Tehran: IRGC markaz-e asnad va tahghighat-e defa-e moghadas [IRGC center of documents and research of holy defense], 1401 (March 2021-March 2022), pp. 316, 318.

²⁴ “daryaban Shamkhani dar goftegu-ye ekhtesasi ba ‘mehr’: aghna-sazi-e jameh va fael-sazi-e sakhtar-ha-ye bastari baraye esteghlal va karamadi-e defai ast” [admiral Shamkhani in exclusive talk with “mehr”: persuasion of society and activation of strategic structures is the basis for independence and defense efficiency], *Mebr News*, 3 Khordad 1383 [May 23, 2004], <https://www.mehrnews.com/news/80911/>.

organization thrown together when the Iran-Iraq War broke out. Its first mission was to defend the regime from counterrevolution, not to engage a regional military power like Saddam's army."²⁵ In short, the organizations that would later be important to the acquisition, threat, and use of strategic weapons had yet to become stable, established, and functional as the war began in 1980.

Thus, with the revolution, the IRI inherited almost no weapons of strategic value along with limited defense industries that provided a poor basis for Iran's domestic development and production of weapons. With the start of the war in 1980—in stark contrast to the end of the war eight years later—Iran had no actual capabilities in the areas of ballistic missiles, long-range artillery rockets or cruise missiles, CBW, or nuclear weapons. Therefore, the Iran-Iraq War serves as the “origin story” and foundation for Iranian strategic weapons in terms of acquisition, threat, use, and the associated organizations.

Pattern Break

It was against this backdrop that the events comprising the cumulative pattern break of the Iran-Iraq War occurred. As outlined previously, these can be divided into three categories of shocks—Iraqi actions, the policies and actions of others, and the end of the war—each of which elicited specific perceptions and reactions from Iran.

Iraqi Actions

The Iraqi actions that most surprised Tehran in the context of the war, as described below, were the air and missile attacks it carried out against non-military targets in Iran, attacks on Iranian oil facilities and shipping, and use of CW.²⁶ Iranian officials commonly referred to these Iraqi actions as evils (*shararat-ha*) and war crimes (*jenayat-e jangi*).²⁷ Iraq undertook these actions in large part due to the failures of its offensives in the ground war—the main axis of the conflict—and in response to Iran's counter-offensives and refusal to accept Iraqi ceasefire proposals.²⁸ According to James Bill, with these actions, Iraq “sought to break Iran's spirit and capacity to resist through massive missile, air, and gas attacks on both military and civilian targets.”²⁹

Iraqi Air and Missile Attacks Against Non-Military Targets

Iraq began sporadic air, rocket, and missile attacks against Iranian cities near the border as early as fall 1980.³⁰ As the war reached a stalemate and shifted into a war of attrition, however, it began to conduct more extensive and sustained air, rocket, and missile attacks against Iranian cities and

²⁵ J. Matthew McInnis, *Iranian Concepts of Warfare: Understanding Tebran's Evolving Military Doctrines*, American Enterprise Institute, February 2017, <https://www.aei.org/wp-content/uploads/2017/02/Iranian-Concepts-of-Warfare.pdf>, p. 12.

²⁶ Iranian officials also highlighted Iraq's threats and attacks against non-military aircraft, including civilian airliners.

²⁷ Diary of Rafsanjani, *Be Suye Sarnevesht* [towards destiny], p. 11.

²⁸ Diary of Rafsanjani, *Defa va Siyasat* [defense and policy], p. 13; Ray Takeyh, “The Iran-Iraq War: A Reassessment,” *Middle East Journal*, Vol. 64, No. 3 (Summer 2010), p. 374.

²⁹ James A. Bill, “Morale vs. Technology: The Power of Iran in the Persian Gulf War,” in Farhang Rajaei, ed., *The Iran-Iraq War: The Politics of Aggression* (Gainesville: University of Florida Press, 1993), pp. 200-201.

³⁰ For instance, in addition to air attacks, Iraq began using FROG-7 long-range rockets in November 1980 and Scud B missiles in October 1982. (UNMOVIC, p. 347; Ali Khaji, Shoaodin Fallahdoost, and Mohammad Reza Soroush, “Civilian casualties of Iranian cities by ballistic missile attacks during the Iran-Iraq war (1980-1988),” *Chinese Journal of Traumatology*, Vol. 13, No. 2 (2010), p. 88.)

industrial centers—dubbed the “War of the Cities” (*jang-e shahr-ha*)—and eventually reached deeper into Iranian territory to include Iran’s capital of Tehran.³¹ According to Pierre Razoux, Saddam Hussein “decided to play a new card to break the stalemate and convince the mullahs to put an end to the war. By bombing the Iranian population, [Iraq] hoped to demoralize and force the Iranian people to pressure their government into accepting negotiations with Baghdad.”³² In executing what was called a “scorched earth” (*zamin-e sukhteh*) policy,³³ Iraqi attacks involved aircraft, artillery, Soviet-supplied unguided artillery rockets such as the FROG-7, Soviet-supplied Scud B ballistic missiles,³⁴ and later, Iraq’s Al-Hussein extended-range ballistic missiles.³⁵ According to Iranian estimates, 127 Iranian cities were attacked a total of 4,769 times with aircraft, missiles, and artillery. Sixty-three percent of the attacks used aircraft, 31.9 percent used artillery, and 4.9 percent used missiles, and an estimated 76,873 Iranian people were killed or injured in the attacks.³⁶

Iraqi Attacks on Iranian Oil Facilities and Shipping

Similar to Iraq’s air and missile attacks above, the stalemate with Iran in the ground war drove Iraq to start attacking Iranian oil facilities, oil tankers, and other ships—as part of what was termed the “Tanker War” (*jang-e naftkesh-ha*). Iraqi attacks initially focused on Iranian oil facilities and later targeted Iranian ships in the northern Persian Gulf and included the use of aircraft firing French-supplied Exocet anti-ship cruise missiles.³⁷ Importantly, in early 1984, with its newly-acquired long-range Super Etendard aircraft from France, Iraq expanded its attacks to Iranian targets in the southern Persian Gulf, including critical oil facilities.³⁸ In May 1984, Iran’s war commander, Ayatollah Hashemi Rafsanjani, described Iraq’s attacks as a “new situation,” a new development in the trend of the war, and a “new phase” for Iran. He viewed Iraq’s actions as an official conspiracy by Iraq and its supporters—including the United States, France, and regional countries—the aims of which were to pressure Iran, to prevent its oil exports and entry of required goods, and to weaken its economy and its financial support for the war.³⁹ According to Rafsanjani, Iraq targeted Iran’s oil

³¹ Kenneth M. Pollack, *The Persian Puzzle: The Conflict Between Iran and America* (New York: Random House, 2004), pp. 195-196.

³² Razoux, *The Iran-Iraq War*, p. 302.

³³ Diary of Rafsanjani, *Payan-e Defa, Aghaz-e Baz-Sazi* [end of defense, start of reconstruction], p. 7.

³⁴ Iraq began attacks using Scud B ballistic missiles in October 1982. (U.S. Defense Intelligence Agency, “Iran Military Power: Ensuring Regime Survival and Securing Regional Dominance,” 2019, https://www.dia.mil/Portals/110/Images/News/Military_Powers_Publications/Iran_Military_Power_LR.pdf.)

³⁵ To develop the Al-Hussein missile, Iraq modified the Scud B missile and increased its range from 300 to 650 km, by adding propellant and decreasing its warhead weight, to enable the targeting of Tehran. (United Nations Monitoring, Verification, and Inspection Commission (UNMOVIC), “Compendium: The Missile Programme,” June 2007, p. 347; “Delivery Systems,” Comprehensive Report of the Special Advisor to the DCI on Iraq’s WMD, with Addendums (Duelfer Report), Volume 2, September 30, 2004, p. 3.) Iranian missile officials uncovered this new Iraqi system by early 1988. (Diary of Rafsanjani, 14 Esfand 1366 [March 3, 1988], *Defa va Siyasat* [defense and policy]; Diary of Rafsanjani, *Onj-e Defa* [peak of defense], p. 420.) According to IRGC missile officials, with the changes and decreased explosive power of the warhead, the missile system was ineffective and often exploded during flight or failed to detonate upon impact. (Diary of Rafsanjani, 14 Esfand 1366 [March 4, 1988], *Defa va Siyasat* [defense and policy].)

³⁶ Diary of Rafsanjani, *Payan-e Defa, Aghaz-e Baz-Sazi* [end of defense, start of reconstruction], pp. 10-11.

³⁷ Pollack, *The Persian Puzzle*, pp. 196-197.

³⁸ Martin S. Navias, “The First Tanker War,” *History Today*, August 2019, <https://www.historytoday.com/history-matters/first-tanker-war>; Samuel J. Cox, “H-018-1: No Higher Honor—The Road to Operation Praying Mantis, 18 April 1988,” Naval History and Heritage Command, April 2018, <https://www.history.navy.mil/about-us/leadership/director/directors-corner/h-grams/h-gram-018/h-018-1.html>.

³⁹ “Majlis Speaker: Iraq’s Weapons Suppliers Create Crisis,” Tehran IRNA, May 15, 1984, FBIS-SAS-84-096, May 15, 1984; Diary of Rafsanjani, *Defa va Siyasat* [defense and policy], p. 10.

facilities and shipping because Tehran's enemies knew that its reliance on oil was a weak point (*noghteb-ye za'f*) for its ability to secure its wartime financial and material needs.⁴⁰

Iraqi Use of CW

A third type of Iraqi action that shocked Iranian leaders was its use of CW against Iran's military and population. According to Shahrām Chubin, Iraq's use of these weapons (and ballistic missiles) constituted "the most traumatic chapter for Iran in the war."⁴¹ While some U.S. and Iranian sources claim that Iraq began using CW as early as late 1980 or early 1981,⁴² it appears that Iraq began CW attacks against Iran only in 1983 after its initial use of riot control agents the year prior. CW played an increasingly important role in Iraqi strategy until the end of the war.⁴³

In February 1984, Rafsanjani noted that Iraq's extensive use of CW showed that Saddam's supporters left his hand free for any evil (*sbararat*) and crime (*jenayat*).⁴⁴ According to Iranian claims, Iraq used CW against Iranian military targets and cities dozens of times, delivered by artillery, mortars, and aircraft,⁴⁵ and Iran claimed to suffer 60,000 CW-related casualties during the war.⁴⁶ Iran also alleges that Iraq used a range of CW including nerve, blistering, and blood agents. According to Iraqi sources, Baghdad used more than 54,000 artillery shells, 27,000 rockets, and almost 19,500 bombs to deliver CW between 1983 and 1988, munitions that used about 1,800 tons of mustard gas, more than 600 tons of sarin nerve gas, and 140 tons of tabun nerve gas.⁴⁷

During the last year of the war, Iranian officials also grew concerned that Iraq might use missile warheads to deliver CW.⁴⁸ According to Javed Ali, in early 1988, Iranian fears of Iraqi Scuds armed with CW were "so great that some reports indicate that up to one-quarter to one-half of Tehran's population fled."⁴⁹ Ultimately, Iraq did not use CW missile warheads during the war but did develop,

⁴⁰ Diary of Rafsanjani, *Omid va Delvāpasi* [hope and anxiety], p. 17.

⁴¹ Shahrām Chubin, *Iran's National Security Policy: Capabilities, Intentions, and Impact* (Washington, D.C.: Carnegie Endowment for International Peace, 1994), p. 21.

⁴² U.S. Defense Intelligence Agency, "Iran Military Power: Ensuring Regime Survival and Securing Regional Dominance," 2019, https://www.dia.mil/Portals/110/Images/News/Military_Powers_Publications/Iran_Military_Power_LR.pdf, p. 5; "Letter Dated 11 April 1988 from the Permanent Representative of the Islamic Republic of Iran Addressed to the President of the Conference on Disarmament," Conference on Disarmament Document CD/87, April 12, 1988, <https://digitallibrary.un.org/record/38412?ln=en#record-files-collapse-header>.

⁴³ Javed Ali, "Chemical Weapons and the Iran-Iraq War: A Case Study in Noncompliance," *Nonproliferation Review*, Spring 2001, pp. 47, 49; "Iraq's Chemical Warfare Program," Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD, with Addendums (Duelfer Report), Volume 3, September 30, 2004, p. 10; Central Intelligence Agency, "Impact and Implications of Chemical Weapons Use in the Iran-Iraq War," April 1988, p. 7.

⁴⁴ Diary of Rafsanjani, 8 Esfand 1362 [February 27, 1984], *Aramesh va Chalesh* [calm and challenge].

⁴⁵ "Letter Dated 11 April 1988 from the Permanent Representative of the Islamic Republic of Iran Addressed to the President of the Conference on Disarmament," Conference on Disarmament Document CD/87, April 12, 1988, <https://digitallibrary.un.org/record/38412?ln=en#record-files-collapse-header>.

⁴⁶ Ali, "Chemical Weapons and the Iran-Iraq War," p. 52.

⁴⁷ "Iraq's Chemical Warfare Program," Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD, with Addendums (Duelfer Report), Volume 3, September 30, 2004, p. 10. Of note, Iraq was the first state in history to use nerve gas on the battlefield. (U.S. Central Intelligence Agency, "Impact and Implications of Chemical Weapons Use in the Iran-Iraq War," April 1988, p. 5.)

⁴⁸ Diary of Rafsanjani, *Payan-e Defa, Aghaz-e Baz-Sazī* [end of defense, start of reconstruction], p. 8; Pollack, *The Persian Puzzle*, p. 228.

⁴⁹ Ali, "Chemical Weapons and the Iran-Iraq War," p. 51.

test, and deploy CW warheads armed with nerve gas for the Al-Hussein missile by 1990.⁵⁰ Nevertheless, in 1988, Ayatollah Khomeini cited Iraqi CW use as one of the main reasons he accepted a ceasefire, stating that “given the enemy’s widespread use of chemical weaponry against our cities and civilians, I am now inclined to agree to a full-scale ceasefire.”⁵¹

Policies and Actions of Others

Although main events that constitute this pattern break were the Iraq’s actions above, Iranian officials were also surprised by the policies and actions of others during this period. As described below, they were caught off-guard by the perceived lack of response and condemnation by the international community for Iraq’s actions, the support by many countries for Iraq during the war, and U.S. military actions against Iran.

International Response

One particularly surprising element of the Iran-Iraq war for Iranian officials was the reaction—or lack thereof—of the international community to Iraq’s missile, air, and CW attacks. Indeed, they were shocked by the failure of the United Nations and individual countries to respond to or condemn Baghdad’s actions. In this context, Iranian officials referred to the “closed eyes” (*chashm-pushi*)⁵² of the international community to the “evils” and “crimes” of Iraq, many of which, as Iran highlighted, were against international laws and regulations. These included actions such as targeting populations, attacking commercial shipping, and using CW.⁵³

Foreign Support for Iraq

Another surprising element of the war from Iran’s perspective was the fact that many states not only refused to condemn and halt Iraq’s actions but also appeared to actively support Iraq against Iran. This support entailed the provision of weapons and munitions, intelligence, and financial and logistical support to Iraq by Gulf Arab states, the United States, and other countries before and during the war.⁵⁴ It also included the critical means that enabled Iraq’s missile, air, and CW attacks highlighted above, such as Soviet-supplied combat aircraft, FROG-7 rockets, and Scud B missiles; French-supplied Super Etendard aircraft and Exocet anti-ship cruise missiles; and CW-related technology provided by U.S. and European companies.⁵⁵ In Iran’s view, the combination of the lack

⁵⁰ “Iraq’s Chemical Warfare Program,” Comprehensive Report of the Special Advisor to the DCI on Iraq’s WMD, with Addendums (Duelfer Report), Volume 3, September 30, 2004, pp. 5, 9.

⁵¹ Document 26. Islamic Republic of Iran, Letter, Ayatollah Ruhollah Khomeini, [Announcing Agreement to a Ceasefire in the Iran-Iraq War], July 16, 1988, in Malcolm Byrne and Kian Byrne, *Worlds Apart: A Documentary History of US-Iranian Relations, 1978-2018* (Cambridge: Cambridge University Press, 2022), p. 112.

⁵² Diary of Rafsanjani, *Aramesh va Chalesh* [calm and challenge], p. 11.

⁵³ Diary of Rafsanjani, *Pas az Bobran* [after the crisis], p. 13.

⁵⁴ Diary of Rafsanjani, *Defa va Sijyasat* [defense and policy], p. 13; Diary of Rafsanjani, *Pas az Bobran* [after the crisis], p. 13; “Hashemi-Rafsanjani Discusses Chemical Weapons,” Tehran Domestic Service, March 23, 1984, FBIS-SAS-84-059, March 26, 1984; Afshon Ostovar, *Vanguard of the Imam: Religion, Politics, and Iran’s Revolutionary Guards* (Oxford: Oxford University Press, 2016), p. 82.

⁵⁵ According to various sources, U.S., West and East German, and other western companies assisted Iraq’s CW program. (“Iraq’s Chemical Warfare Program,” Comprehensive Report of the Special Advisor to the DCI on Iraq’s WMD, with Addendums (Duelfer Report), Volume 3, September 30, 2004, pp. 6, 62.; Razoux, *The Iran-Iraq War*, p. 300.)

of international condemnation and active foreign support constituted a “green light” (*cheragh-e sabz*) for Iraq to conduct its “evils” and “crimes” against Iran.⁵⁶

In particular, Tehran was concerned about the support by the Gulf Arab states for Iraq and the potential military and economic threat they posed to Iran. During the war, Kuwait and Saudi Arabia provided funding support to Iraq and allowed Baghdad to use their ports to import needed weapons and equipment.⁵⁷ Also, in 1981, the Gulf Arab states created the Gulf Cooperation Council (GCC) and in 1982 established a GCC joint military force called the Peninsula Shield Force (PSF)—two entities which Tehran viewed as designed to counter Iran.⁵⁸ and the GCC received significant weapons and equipment from the United States and other western countries during the war.⁵⁹ Also, Iran perceived an “oil conspiracy” against Iran by Iraq, Saudi Arabia, and Kuwait, aimed at damaging Iranian oil revenues to undermine Iran’s ability to conduct the war.⁶⁰

U.S. Military Actions

A third set of foreign policies and actions that shook Iranian leaders during the war was the military actions taken by the United States that were directly or indirectly aimed at Iran. Indeed, starting in 1982, Iran saw the United States move away from a neutral stance to a “tilt” toward Iraq and against Iran. This “tilt” was manifested by Washington’s perceived hostility toward Iran⁶¹ coupled with its active support for Iraq—including intelligence sharing. It was also apparent in its lack of condemnation of Iraq’s CW use and other actions of concern.⁶² Particularly worrying in this regard for Tehran was the growing United States military presence in the Persian Gulf, which increased the threats Iran perceived and, in Rafsanjani’s view, clearly benefitted Baghdad.⁶³ This included the creation in 1980 of the Rapid Deployment Joint Task Force (RDJTF) in response to the Iranian hostage crisis and the Soviet invasion of Afghanistan; the establishment in 1982 of a U.S.-Saudi Military Committee to address the threat of Iran;⁶⁴ and the formation in 1983 of the U.S. Central Command (CENTCOM) to further strengthen U.S. capabilities to protect its interests in the region.⁶⁵ Washington also enhanced the military capabilities of the Gulf Cooperation Council (GCC)

⁵⁶ Diary of Rafsanjani, *Omid va Delvāpasi* [hope and anxiety], p. 10.

⁵⁷ Dilip Hiro, *The Longest War: The Iran-Iraq Military Conflict* (New York: Routledge, 1991), pp. 76, 260.

⁵⁸ Hiro, *The Longest War*, pp. 78-79; Ostovar, *Vanguard of the Imam*, p. 81; Seyed Hossein Mousavian with Shahir ShahidSaless, *Iran and the United States: An Insider’s View on the Failed Past and the Road to Peace* (New York: Bloomsbury, 2014), Kindle edition, locations 1954, 1956.

⁵⁹ “Arms Sales in the Middle East: Trends and Analytical Perspectives for U.S. Policy,” Congressional Research Service, updated November 23, 2020, pp. 43-44; “Limiting Conventional Arms Exports to the Middle East,” Congressional Budget Office, September 1992, pp. 8-10.

⁶⁰ Hiro, *The Longest War*, p. 213.

⁶¹ For instance, by the early 1980s, the United States had imposed strict export controls on goods to Iran and had added Iran to the U.S. list of state sponsors of terrorism. (Hiro, *The Longest War*, p. 120.)

⁶² Pollack, *The Persian Puzzle*, pp. 207-208. According to Ostovar, “Washington’s favoring of Saddam shielded him from international criticism and pressure.” (Ostovar, *Vanguard of the Imam*, p. 82.)

⁶³ Diary of Rafsanjani, *Payan-e Defa, Aghaz-e Baz-Sazi* [end of war, start of reconstruction], p. 7.

⁶⁴ Hiro, *The Longest War*, p. 78.

⁶⁵ Jim Garamone, “A Short History of U.S. Central Command,” U.S. Department of Defense, March 28, 2019, <https://www.defense.gov/News/News-Stories/Article/Article/1799465/a-short-history-of-us-central-command/>; “CENTCOM Mission and Command Priorities,” U.S. Central Command, undated, <https://www.centcom.mil/ABOUT-US/>.

states,⁶⁶ and in 1983 began Operation Staunch,⁶⁷ an effort to block arms sales and deliveries to Iran to deny it the means to continue the war. As a reflection of Iran's increasing perception of a U.S. threat, in 1985, Iranian President Khamenei declared that the United States was the "principal enemy" of Iran.⁶⁸

The ever-increasing U.S. military presence in the Persian Gulf that Iran witnessed culminated in the last year of the war with direct U.S. military action against Iran's military. In 1987, the U.S. military conducted the U.S. Earnest Will and Prime Chance operations designed to protect Gulf shipping against Iranian attacks.⁶⁹ Iran already had suspicions—as well as some hard data⁷⁰—about U.S. support for Iraq, but these actions helped solidify Iran's view that the United States was actively supporting Baghdad and was not a neutral player in the Iran-Iraq War. Correspondingly, in September 1987, President Khamenei told the UN that the United States had taken the first step toward a war and that, while Iran "under no circumstances" wanted a full-scale war with the US, it reserved "the right to retaliate" to defend itself.⁷¹

These warnings did not have the effect Iran desired, however, and the U.S. military continued to conduct direct actions against Iran's military in response to Iranian attacks. These included sinking Iranian naval vessels and destroying Iranian oil platforms being used to support military operations, including as part of Operation Praying Mantis, one of the U.S. Navy's largest operations since World War II.⁷² In May 1988, Rafsanjani stated that "Iran is at war with the United States."⁷³ His observations reflect how Iran now viewed its relationship with the United States and its military presence in the region.

These perceptions were compounded by a final U.S. military action, and one that was accidental by most accounts. In July 1988, the USS Vincennes cruiser shot down Iran Air flight 655, having mistaken the civilian aircraft for an Iranian F-14 fighter.⁷⁴ Iranian leaders, however, did not view this as an accidental act: Rafsanjani concluded that it was "highly unlikely" that the attack was a mistake, and claimed that it was a pre-planned attack and a "well-calculated plot" against Iran.⁷⁵ Indeed, according to Kenneth Pollack, Tehran viewed the shootdown as deliberate and as part of a larger

⁶⁶ David B. Crist, "Gulf of Conflict: A History of U.S.-Iranian Confrontation at Sea," Washington Institute for Near East Policy, Policy Focus 95, June 2009, <https://www.washingtoninstitute.org/media/3423>, p. 1.

⁶⁷ Hiro, *The Longest War*, p. 120; U.S. National Security Council Memorandum, "PRG [Policy Review Group] on Option for Additional Trade Controls on Iran," August 5, 1987, <https://www.cia.gov/readingroom/docs/CIA-RDP89B00224R000401120004-5.pdf>.

⁶⁸ "U.S. Called Principal Enemy," Tehran IRNA, February 9, 1985, FBIS-SAS-85-028, February 11, 1985.

⁶⁹ Williamson Murray and Kevin M. Woods, *The Iran-Iraq War: A Military and Strategic History* (Cambridge: Cambridge University Press, 2014), p. 35; Crist, *The Twilight War*, pp. 228-230, 338-357; Richard A. Mobley, "Deterrence Without Escalation: Fresh Insights into U.S. Decisionmaking During Operation *Earnest Will*," *Joint Forces Quarterly*, No. 106 (2022).

⁷⁰ For instance, Iran reportedly was aware of U.S. intelligence sharing with Iraq and also U.S. Navy cooperation and deconfliction in assisting Iraqi air attacks against Iranian shipping. (Crist, *The Twilight War*, pp. 232-232.)

⁷¹ "Khamene'i Press Conference in New York," Tehran Domestic Service, September 27, 1987, FBIS-NES-87-188, September 29, 1987.

⁷² Crist, "Gulf of Conflict," pp. 4-9. Two prominent U.S. military operations against Iran were Operation Nimble Archer in October 1987 against Iranian oil platforms and Operation Praying Mantis in April 1988 that sunk Iran's most capable naval assets.

⁷³ "Iran is at War with USA' Says Rafsanjani," *Jane's Defence Weekly*, May 28, 1988.

⁷⁴ Razoux, *The Iran-Iraq War*, pp. 443-462.

⁷⁵ "Vows Certain 'Retaliation,'" Tehran IRNA, July 5, 1988, FBIS-NES-88-129, July 6, 1988.

U.S. signal that it “had decided to openly enter the war on Iraq’s side and was now willing to do anything—including killing Iranian civilians—to bring down the Islamic Republic.”⁷⁶

End of War Situation

Iraqi missile, air, and CW attacks, the nature of the international response and foreign support for Iraq, and increasing U.S. military presence and actions all combined to push Iran to accept a ceasefire with Iraq and end the war. But a final shock for Iran was the resulting strategic situation in which it found itself in the post-war period. Not only were Iran’s military capabilities weak, but despite fighting a brutal, eight-year war, it (still) faced Iraq as a strategic rival and military threat as well as the suspicions that it was pursuing WMD and long-range missile programs.⁷⁷ Furthermore, it now confronted an increased U.S. military presence in the region. Thus, at the end of the 1980s, Iran saw itself as a relatively weak military power, standing alone in confronting threats from Iraq’s massive military and its WMD and missile programs as well as from U.S. military forces in the region. These factors would shape Iranian strategic weapons intentions and activities as it entered the 1990s.

Iran’s Responses

Iran responded in several important ways to the elements of the pattern break outlined above—especially Iraq’s actions—with respect to its acquisition, threat, and use of strategic weapons, including after the end of the war. The most significant of these relate to three key areas: (1) Iranian military strategy, with its policy of “retaliation”; (2) Iran’s acquisition of the critical means—including missiles, rockets, and CW—to implement its retaliation policy and to deter, compel, and fight more broadly; and (3) Iran’s initial steps toward the longer-term goal of developing a nuclear deterrent. In line with the scope and nature of Iran’s responses to the pattern break, the landscape of its strategic weapons acquisition, threat, and use drastically changed. This evolution would provide important foundations for Iranian efforts in the coming decades.

Policy of “Retaliation” and Acquisition of the Means for Retaliation

The main element of Tehran’s military strategy to emerge in response to Iraq’s actions outlined above was its officially stated policy of “retaliation” (*moghabeleh be mesl*).⁷⁸ This policy was implemented in reaction to Iraq’s air and missile attacks against Iranian non-military targets as well as Iraqi attacks against Iranian shipping and oil facilities. Iran also threatened to develop and use CW in response to Iraqi CW attacks. There is debate, however, over whether Iran actually used these weapons against Iraq.

Iran’s policy of retaliation was aimed both at exacting revenge on Iraq for its actions and also deterring further actions. In describing Iran’s retaliatory actions, Rafsanjani stated that, “When the

⁷⁶ Pollack, *The Persian Puzzle*, p. 232. Steven Ward makes a similar point, stating that Iran viewed the shootdown as a deliberate attack and as a signal that Washington was prepared to use any means to defeat Iran. (Steven R. Ward, *Immortal: A Military History of Iran and its Armed Forces* (Washington, D.C.: Georgetown University Press, 2009) p. 294.)

⁷⁷ Iraq’s rivalry with Iran—and Iran’s increasing military capabilities and suspected WMD efforts—was the primary motivation for Iraq’s WMD and missile programs. (Comprehensive Report of the Special Advisor to the DCI on Iraq’s WMD, with Addendums (Duelfer Report), Volume 1, September 2004, pp. 1, 4, 29-30.)

⁷⁸ Iranian officials also occasionally used the Persian term “talafi” (retaliation) to informally refer to this policy.

Iraqis engage in mischief, we will respond to the extent we are prepared. We will launch a limited operation so that they will know their mischief will not go unanswered. That is a deterrent.”⁷⁹ Iranian leaders also learned that there were two critical elements to retaliatory deterrence: not just acquiring the capability to retaliate, but also demonstrating the willingness to use it. To this end, Iran pursued multiple efforts to augment its limited means to support its retaliation policy, working to acquire ballistic missiles, long-range artillery rockets, long-range anti-ship cruise missiles, and the capability to produce and possibly weaponize CW. Since it was essentially starting from scratch in these areas, however, Iran needed to both acquire the weapons and, in some cases, receive training on how to effectively operate them.

Response to Air and Missile Attacks

Acquisition of Ballistic Missiles

To retaliate against Iraqi air and missile attacks against its cities and industrial areas—including as part of the phases of the War of the Cities—Iran needed to acquire the critical means of ballistic missiles and long-range rockets to augment its limited capabilities for air strikes and short-range artillery attacks. To this end, it sought Scud B ballistic missiles as one main thrust of its efforts to retaliate against Iraqi attacks on its cities and industrial areas. Starting in 1984—concurrent with the adoption of its formal policy of “retaliation”—Iran attempted to purchase Scud missiles, launchers, and associated equipment from foreign countries. According to former Iranian foreign minister Mohammad Javad Zarif, Iran “went to one country after another, begging, begging—I’m insisting—begging for a single Scud missile to defend our people.”⁸⁰ According to Rafsanjani, the Iraqi evils (*shararat-ha*) drove Iran to prepare the capabilities to retaliate, which included the two pathways of purchasing missiles and domestically manufacturing them—work which began from “zero” (*sef*).⁸¹ The IRGC was initially able to procure thirty Scud missiles and two launchers from Libya,⁸² and later more missiles from North Korea.⁸³ It also unsuccessfully attempted to obtain Scuds from Syria,⁸⁴ the Soviet Union,⁸⁵ and Bulgaria.⁸⁶

⁷⁹ “Hashemi-Rafsanjani Holds News Conference,” Tehran Domestic Service, June 4, 1987, FBIS-NES-87-111, June 10, 1987.

⁸⁰ Zarif, in response to a reporter’s question, New Zealand Institute of International Affairs, March 2016, <https://www.youtube.com/watch?v=ejudkZgs5Vg>.

⁸¹ Diary of Rafsanjani, *Be Suye Sarnevesht* [towards destiny], pp. 13-14.

⁸² Said Alamian, *Baraye Tarikh Miguyam* [I speak for history], Volume 1: *Khaterat-e Mohsen Rafiqhdust* [memoirs of Mohsen Rafiqhdust] (1357-1367 [March 1978-March 1989]), 1398 (March 2019-March 2020), p. 299.

⁸³ North Korea offered missiles to Iran as early as May 1985, and Iran began receiving them by late 1986. (Diary of Rafsanjani, 24 Ordibehesht 1365 [May 14, 1985], *Omid va Delvapas* [hope and anxiety]; Diary of Rafsanjani, 8 Dey 1365 [December 29, 1986], *Onj-e Defa* [peak of defense].) In early 1987, Rafsanjani ordered the IRGC to acquire more missiles from North Korea to support the retaliation policy because Libya would no longer supply missiles. (Diary of Rafsanjani, 14 Bahman 1365 [February 3, 1987], 18 Bahman 1365 [February 7, 1987], and 16 Esfand 1365 [March 6, 1987], *Onj-e Defa* [peak of defense].)

⁸⁴ Diary of Rafsanjani, 16 Esfand 1363 [March 7, 1985], *Be Suye Sarnevesht* [towards destiny]; Diary of Rafsanjani, 8 Farvardin 1364 [March 28, 1985], *Omid va Delvapas* [hope and anxiety].

⁸⁵ Iran reportedly sought Scud missiles from the Soviet Union by mid-1984. (Diary of Rafsanjani, 2 Mordad 1363 [July 24, 1984], *Be Suye Sarnevesht* [towards destiny]; Diary of Rafsanjani, 23 Esfand 1363 [March 14, 1985], *Be Suye Sarnevesht* [towards destiny].)

⁸⁶ Diary of Rafsanjani, 27 Esfand 1365 [March 17, 1987], *Onj-e Defa* [peak of defense]; Alamian, *Khaterat-e Mohsen Rafiqhdust* [memoirs of Mohsen Rafiqhdust], pp. 305-306.

In parallel to the IRGC's purchase efforts, the newly created IRGC Missile Unit also obtained the necessary training for the Scud B (and the FROG-7 rocket) in late 1984 from Syria's Brigade 155.⁸⁷ Although Iran was unable to acquire missiles from Syria, it was able to receive two months of in-depth technical and operational training on the Scud B from the Syrians.⁸⁸ Separate from the efforts above, the IRGC Ministry also attempted to reverse engineer the Scud B and establish a domestic production capability using two of the missiles obtained from Libya.⁸⁹ This effort was apparently unsuccessful but likely provided Iran with increased technical knowledge of the system that aided future production efforts.

Later in the war, the IRGC secretly negotiated with China to purchase B610 ballistic missiles—which were more accurate than the Scud B⁹⁰—but was unable to secure their delivery until after the war. Speaking in 2014, IRGC Aerospace Force (IRGC-ASF) deputy commander Sayyed Majid Musavi stated that Iran's aim in purchasing the B610 was to strike Baghdad, and the Chinese agreed to modify the 125-km-range missile to meet Iran's operational need for a range of 150 km. Musavi stated that Iran also wanted to avoid reliance on a single supplier by having multiple, parallel sources for missiles. In Musavi's view, if Iran had been able to procure the B610 during the war, it might have fundamentally affected the War of the Cities and changed the course of the war.⁹¹

Acquisition of Long-Range Artillery Rockets

In addition to its efforts to acquire ballistic missiles, Iran undertook extensive parallel efforts to develop long-range artillery rockets to support its retaliation policy. At the time, Iran's longest-range rocket was the approximately 20-km-range BM-21. According to Rafsanjani, Iran sought to mass produce rockets with ranges of 150-200 km to enable targeting of almost all Iraqi cities and retaliate against Iraqi missile attacks.⁹² These activities were conducted under the general title of the “Baghdad Rocket” (*raket-e Baghdad*), with the aim of striking strategic areas in Iraq—ultimately

⁸⁷ The training from Syria included the topics of missile technology, fueling, warheads, launchers, assembly, testing, meteorology, mapping, and launching.

⁸⁸ Abdolreza Saleminejad, *Rab-e roshan-e setaregan: yademan-e shobada-ye mushaki-e niru-ye havafaza-ye sepah* [bright path of the stars: the memory of the missile martyrs of the IRGC Aerospace Force] (Tehran: Nilufaran, 1394 [March 2015-March 2016]), pp. 10, 19-20. Syrian President Hafez Assad told the Iranians that Syria could not supply missiles to Iran because the missiles were under the control of Soviet advisors. (Alamian, *Khaterat-e Mohsen Rafiqhdust* [memoirs of Mohsen Rafiqhdust], p. 285.)

⁸⁹ Alamian, *Khaterat-e Mohsen Rafiqhdust* [memoirs of Mohsen Rafiqhdust], pp. 351, 377; Diary of Rafsanjani, 27 Shahrivar 1366 [September 18, 1987], 27 Mehr 1366 [October 19, 1987], and 14 Esfand 1366 [March 4, 1988], *Defa va Siyasat* [defense and policy].

⁹⁰ The B610 had an accuracy of 250 meters, in contrast to the Scud B's accuracy of 1-1.5 km.

⁹¹ “sardar Musavi: sarasar-e sarzamin-e eshghali dar tir-ras-e mushak-ha-ye Irani moghavemat ast” [general Musavi: the entire occupied territory is in the crosshairs of Iranian missiles], *Nasim News*, 1 Aban 1393 [October 23, 2014], <https://www.nasim.news/fa/tiny/news-948118>; “majera-ye mozakerat-e mushaki-e Iran ba Chin dar Thailand” [the story of Iran's missile negotiations with China in Thailand], *Tabnak News*, 21 Aban 1393 [November 12, 2014], <https://www.tabnak.ir/fa/news/448829>.

⁹² “mosahebeh-ye Ayatollah Hashemi Rafsanjani dar khosus-e tajavoz-e Iraq be Iran” [interview with Ayatollah Hashemi Rafsanjani regarding Iraq's attack on Iran], Center of Documents of Ayatollah Hashemi Rafsanjani, 19 Tir 1380 [July 10, 2001], <https://rafsanjani.ir/records/%D9%85%D8%B5%D8%A7%D8%AD%D8%A8%D9%87-%D8%A2%DB%8C%D8%AA-%D8%A7-%D9%87%D8%A7%D8%B4%D9%85%DB%8C-%D8%B1%D9%81%D8%B3%D9%86%D8%AC%D8%A7%D9%86%DB%8C-%D8%AF%D8%B1-%D8%AE%D8%B5%D9%88%D8%B5-%D8%AA%D8%AC%D8%A7%D9%88%D8%B2-%D8%B9%D8%B1%D8%A7%D9%82-%D8%A8%D9%87-%D8%A7%DB%8C%D8%B1%D8%A7%D9%86-2q=%D8%A8%D8%A7%D8%B2%D8%AF%D8%A7%D8%B1%D9%86%D8%AF%DA%AF%DB%8C>.

Baghdad.⁹³ In contrast to its ballistic missile efforts, which were concentrated in the IRGC, Iran pursued parallel development efforts of long-range artillery rockets across multiple organizations, including the IRGC Ministry, the IRGC's Ground Force, the Defense Ministry—both its Defense Industries Organization (DIO) and Defense Industries Research Center—and the Ministry of Construction Jihad.⁹⁴ These projects reportedly included a mix of copies of foreign rockets and Iranian domestic designs.⁹⁵

By the mid-1980s, several rocket projects were well underway. Indeed, by 1985, the DIO was developing the Oghab, a 40-km-range rocket⁹⁶ and in 1987, the DIO tested an unidentified 70-km-range rocket⁹⁷ and the 87-km-range Nazeat.⁹⁸ In 1986 and 1987, the IRGC Ministry was developing an unidentified 70-km-range rocket⁹⁹ and conducting research on the FROG-7¹⁰⁰—possibly an effort to reverse engineer the system—in addition to producing the shorter-range Katyusha.¹⁰¹ In 1987, the IRGC Ground Force was developing the Sejil rocket.¹⁰² Lastly, in 1986, the War Engineering Research Center of the Ministry of Construction Jihad was developing an unidentified 100-km-range rocket, later identified as the Mojteme.¹⁰³

⁹³ “khaterat-e Mohsen Hashemi az sakhtan-e mushak-ha-ye Irani” [memories of Mohsen Hashemi about manufacturing Iranian missiles], *Khabar Online*, 2 Mehr 1390 [September 24, 2011], <https://www.khabaronline.ir/news/174183/>; “moghadameh-ye ketab-e khaterat-e sal-e 1367” [introduction to the book of memories of the year 1367], Center of Documents of Ayatollah Hashemi Rafsanjani, <https://rafsanjani.ir/records/%D9%85%D9%82%D8%AF%D9%85%D9%87-%DA%A9%D8%AA%D8%A7%D8%A8-%D8%AE%D8%A7%D8%B7%D8%B1%D8%A7%D8%AA-%D8%B3%D8%A7%D9%84-1367?q=%D8%B1%D8%A7%DA%A9%D8%AA>. Iran's military required systems with 130-150 km ranges to strike Baghdad from Iran's western border.

⁹⁴ Diary of Rafsanjani, 1 Dey 1371 [December 22, 1992], *Ronagh va Saẓandegi* [prosperity and construction]; “khaterat-e Mohsen Hashemi az sakhtan-e mushak-ha-ye Irani” [memories of Mohsen Hashemi about manufacturing Iranian missiles], *Khabar Online*, 2 Mehr 1390 [September 24, 2011], <https://www.khabaronline.ir/news/174183/>; “Hashemi-Rafsanjani Delivers Friday Prayer Sermon,” Tehran Domestic Service, August 19, 1988, FBIS-NES-88-162, August 22, 1988.

⁹⁵ “Show Throws Light on Iran's Arms Industry,” *Jane's Defence Weekly*, November 19, 1988. According to IRGC minister Mohsen Rafiqdust, that Iran used both copying and design to develop weapons including rockets: To make copies of foreign rockets, Iran would take apart sample rockets, draft blueprints without foreign assistance, and manufacture a copy—a process which he stated was a type of design. (“Rafiqdust, Kharrazi Discuss War of Cities,” Tehran Television Service, March 10, 1988, FBIS-NES-88-048, March 11, 1988; “Rafiqdust, Afshar Discuss Latest War Operations,” Tehran Television Service, June 3, 1988, FBIS-NES-88-108, June 6, 1988.)

⁹⁶ Diary of Rafsanjani, 22 Farvardin 1364 [April 11, 1985], *Omid va Delvāpasi* [hope and anxiety].

⁹⁷ Diary of Rafsanjani, 30 Tir 1366 [July 21, 1987], *Defa va Siyāsāt* [defense and policy].

⁹⁸ Diary of Rafsanjani, 6 Azar 1366 [November 27, 1987], *Defa va Siyāsāt* [defense and policy]; Diary of Rafsanjani, 30 Bahman 1366 [February 19, 1988], *Defa va Siyāsāt* [defense and policy].

⁹⁹ Alamian, *Khaterat-e Mohsen Rafiqdust* [memoirs of Mohsen Rafiqdust], p. 351.

¹⁰⁰ “bazdid-e Hashemi az mohemat-sazi-e Shahid Bagheri” [visit of Hashemi to Shahid Bagheri munitions manufacturing], 20 Mordad 1366 [August 11, 1987], Center of Documents of Ayatollah Hashemi Rafsanjani, <https://rafsanjani.ir/records/%D8%AE%D8%A7%D8%B7%D8%B1%D8%A7%D8%AA-%D8%B1%D9%88%D8%B2%D8%A7%D9%86%D9%87-%D8%A2%DB%8C%D8%AA-%D8%A7%D9%84%D9%84%D9%87-%D9%87%D8%A7%D8%B4%D9%85%DB%8C-%D8%B1%D9%81%D8%B3%D9%86%D8%AC%D8%A7%D9%86%DB%8C-%D8%B3%D8%A7%D9%841366-%D8%AF%D9%81%D8%A7%D8%B9-%D9%88-%D8%B3%DB%8C%D8%A7%D8%B3%D8%AA-137?q=%D9%81%D8%B1%D8%A7%DA%AF>.

¹⁰¹ Diary of Rafsanjani, 26 Mordad 1365 [August 17, 1986], *Onj-e Defa* [peak of defense].

¹⁰² Diary of Rafsanjani, 6 Mehr 1366 [September 28, 1987], *Defa va Siyāsāt* [defense and policy].

¹⁰³ Diary of Rafsanjani, 24 Mehr 1365 [October 16, 1986], *Onj-e Defa* [peak of defense]. This was probably the first variant of this ministry's family of “Mojteme” rockets. Mojteme is a Farsi-language acronym for “Missile/Rocket for Response to Missile Attacks of Iraq” (*mushak-e javab-e tajawozāt-e mushaki-e Iraq*). (Diary of Rafsanjani, 19 Esfand 1367 [March 10, 1989], *Payan-e Defa, Aghaz-e Baz-Sazi* [end of war, start of reconstruction].)

By early 1988, Iran's parallel rocket programs were in an active testing phase. The Defense Ministry and its DIO were testing unidentified 130-km and 150-km-range rockets, which probably included a variant of the Nazeat,¹⁰⁴ and Iran was using Nazeats against Iraq by the end of the war.¹⁰⁵ The IRGC Ministry, meanwhile, was testing an unidentified 110-km-range rocket,¹⁰⁶ the "Baghdad-130" 130-km-range rocket,¹⁰⁷ and an unidentified 160-km-range rocket,¹⁰⁸ and the IRGC Ground Force was testing the 130-km-range Sejil rocket.¹⁰⁹ Lastly, the Ministry of Construction Jihad was testing an unidentified 120-km-range rocket¹¹⁰ and an unidentified 150-km-range rocket, probably the Mojteme-5.¹¹¹ According to Rafsanjani, by the end of the war, Iran had tested and was working to establish production lines for rockets with ranges up to 160 km.¹¹² However, they reportedly did not enter mass production phase before the end of the war.¹¹³

Threats and Retaliation Against Air and Missile Attacks

In its initial responses to Iraqi air and missile attacks, Iran both threatened to retaliate and conducted ad hoc retaliation against Iraq as early as 1982, including air and artillery attacks.¹¹⁴ Iran refrained from a formal, stated policy of "retaliation," however, until 1984. It was only after opposing requests by Iranian officials to attack Iraqi cities as retaliation and to compel Iraq to refrain from striking Iranian cities¹¹⁵ that Ayatollah Khomeini agreed in February of that year to a formal policy of retaliation against Iraqi industrial, political, and military targets. However, he required Iran to

¹⁰⁴ "New Missile Nearly Ready for Production," Tehran Domestic Service, April 7, 1988, FBIS-NES-88-068, April 8, 1988; Diary of Rafsanjani, 29 Esfand 1366 [March 19, 1988], *Defa va Siyasat* [defense and policy]; Diary of Rafsanjani, 29 Ordibehesht 1367 [May 19, 1988], *Payan-e Defa, Aghaz-e Baz-Sazi* [end of war, start of reconstruction].

¹⁰⁵ Interview with Mostafa Khosh Cheshm, Iranian expert on international affairs and foreign policy, Iranian "Deterrent" (bazdarandeh) documentary, part 1, <https://t.co/wBOr6jh21T>.

¹⁰⁶ Rafiqdust, in Sayyed Mohammad Mehdi Dezfuli, *Jang va Solh: Ravayati az Sal-ha-ye Ghabl va Ba'd az Pazireshe Ghat'نامه-ye 598* [war and peace: a narrative of the years before and after the adoption of Resolution 598] (Tehran: Yarmand, 1400 [March 2021-March 2022]), p. 292.

¹⁰⁷ Diary of Rafsanjani, 29 Ordibehesht 1367 [May 19, 1988] and 1 Khordad 1367 [May 22, 1988], *Payan-e Defa, Aghaz-e Baz-Sazi* [end of war, start of reconstruction].

¹⁰⁸ "IRGC Minister Rafiqdust on New Missiles," Tehran Domestic Service, July 31, 1988, FBIS-NES-88-148, August 2, 1988.

¹⁰⁹ Diary of Rafsanjani, 3 Mordad 1367 [July 25, 1988] and 9 Mordad 1367 [July 31, 1988], *Payan-e Defa, Aghaz-e Baz-Sazi* [end of war, start of reconstruction].

¹¹⁰ "IRGC Minister Rafiqdust on New Missiles," Tehran Domestic Service, July 31, 1988, FBIS-NES-88-148, August 2, 1988.

¹¹¹ Diary of Rafsanjani, 29 Esfand 1366 [March 19, 1988], *Defa va Siyasat* [defense and policy]. According to an Iranian national award received in March 1989-March 1990 by the project director of the Mojteme rocket project, the Ministry of Construction Jihad had developed the 145-km-range Mojteme-5 rocket. (Iranian Kharazmi Festival award, 1368 [March 1989-March 1990], <http://kia-kahroba.ir/laureates/sites/default/files/covers/3-%20%D9%85%D8%AC%D8%AA%D9%85%D8%B9%205.pdf>.)

¹¹² "moghadameh-ye ketab-e khaterat-e sal-e 1367" [introduction to the book on memories of the year 1367], Center of Documents of Ayatollah Hashemi Rafsanjani, <https://rafsanjani.ir/records/%D9%85%D9%82%D8%AF%D9%85%D9%87-%DA%A9%D8%AA%D8%A7%D8%A8-%D8%AE%D8%A7%D8%B7%D8%B1%D8%A7%D8%AA-%D8%B3%D8%A7%D9%84-1367?q=%D8%B1%D8%A7%DA%A9%D8%AA>.

¹¹³ Diary of Rafsanjani, *Payan-e Defa, Aghaz-e Baz-Sazi* [end of war, start of reconstruction], p. 9.

¹¹⁴ S. Taheri Shemirani, "The War of the Cities," in Farhang Rajaei, ed., *The Iran-Iraq War: The Politics of Aggression* (Gainesville: University of Florida Press, 1993), p. 36; Diary of Rafsanjani, 27 Tir 1361 [July 18, 1982] and 27 Mordad 1361 [August 18, 1982], *Pas az Bobran* [after the crisis].

¹¹⁵ Diary of Rafsanjani, 28 Khordad 1362 [June 18, 1983], *Aramesh va Chalesh* [calm and challenge].

provide warnings to the Iraqi population before each retaliatory action.¹¹⁶ Iranian officials described these retaliatory strikes as “deterrence measures” or “deterrence operations” intended to halt Iraq’s actions.¹¹⁷ According to Rafsanjani:

Our war policy (*siyasat-e jangi*) in attacking economic centers and cities and civilian areas in general is a policy of revenge (*entegham*) and is not a policy of first strike (*tabajom-e ebtedai*), and we never take the initiative to attack civilian centers. If Iraq attacks our civilian centers and we do not retaliate (*moghabeleh be mesl*), Iraq will become bolder. Therefore, we have to fight back in this situation. In such a way that the Iraqis are forced to stop their crimes. International regulations have nothing to say about retaliation and revenge. In other words, this is our right, and we act according to international regulations in this field, and this act also has a humane aspect. Because it is the defense of civilians.¹¹⁸

Initially, Iran’s retaliatory actions included attacks against Iraqi military, economic, and industrial targets using artillery of the Artesh Ground Force (IRIGF) and the IRGC’s Artillery Unit as well as air attacks by the Artesh Air Force (IRIAF). Later, however, as Iran acquired Scud B ballistic missiles from Libya (and subsequently North Korea) and developed various types of long-range artillery rockets, its retaliatory actions came to include Scud missile attacks starting in March 1985 by the IRGC’s Missile Unit as well as long-range artillery rocket attacks by the Artesh and IRGC.¹¹⁹

For Iran’s Scud missiles, Libyan technicians on-site in Iran initially prepared and fired the missiles, but in November 1986, Libyan leader Moammar Qaddafi—under pressure from Saddam Hussein—ordered them to stop launching the missiles and the technicians departed Iran after sabotaging the

¹¹⁶ Diary of Rafsanjani, 19 Bahman 1364 [February 8, 1986] and 22 Bahman 1364 [February 11, 1986], *Aramesh va Chalesh* [calm and challenge]; Saleminejad, *Rah-e roshan-e setaregan* [bright path of the stars], p. 19; “Communique on Retaliation,” Tehran IRNA, March 5, 1985, FBIS-SAS-85-043, March 5, 1985.

¹¹⁷ “Missile Fired at Baghdad Military Center,” Tehran IRNA, October 5, 1987, FBIS-NES-87-193, October 6, 1987; “WIH on ‘New Phase of Deterrent Operations,’” Tehran Domestic Service, October 5, 1987, FBIS-NES-87-193, October 6, 1987.

¹¹⁸ “siyasat-e Iran dar hamleh be manategh-e gheyr-e nezami-e Iraq: mosahebeh-ye Ayatollah Hashemi Rafsanjani ba ruznameh-ye etela’at piramun-e tahdidat-e Amrika arzyabi-e jang” [policy of Iran in attack on non-military area of Iraq: interview of Ayatollah Hashemi Rafsanjani with Etelaat newspaper about the threats of the United States, evaluation of the war], dated 28 Esfand 1364 [March 19, 1986], Documents Center of Ayatollah Hashemi Rafsanjani, <https://rafsanjani.ir/index.php/records/%D9%85%D8%B5%D8%A7%D8%AD%D8%A8%D9%87-%D8%A2%DB%8C%D8%AA-%D8%A7%D9%84%D9%84%D9%87-%D9%87%D8%A7%D8%B4%D9%85%DB%8C-%D8%B1%D9%81%D8%B3%D9%86%D8%AC%D8%A7%D9%86%DB%8C-%D8%A8%D8%A7-%D8%B1%D9%88%D8%B2%D9%86%D8%A7%D9%85%D9%87-%D8%A7%D8%B7%D9%84%D8%A7%D8%B9%D8%A7%D8%AA-%D9%BE%DB%8C%D8%B1%D8%A7%D9%85%D9%88%D9%86-%D8%B3%DB%8C%D8%A7%D8%B3%D8%AA-%D8%A7%DB%8C%D8%B1%D8%A7%D9%86-%D8%AF%D8%B1-%D8%AD%D9%85%D9%84%D9%87-%D8%A8%D9%87-%D9%85%D9%86%D8%A7%D8%B7%D9%82-%D8%BA%DB%8C%D8%B1%D9%86%D8%B8%D8%A7%D9%85%DB%8C-%D8%B9%D8%B1%D8%A7%D9%82-%D8%AA%D9%87%D8%AF%DB%8C%D8%AF%D8%A7%D8%AA-%D8%A2%D9%85%D8%B1%DB%8C%DA%A9%D8%A7-%D8%A7%D8%B1%D8%B2%DB%8C%D8%A7%D8%A8%DB%8C-%D8%AC%D9%86%DA%AF/print>; see also: “Hashemi-Rafsanjani Interviewed on War With Iraq,” Tehran Domestic Service, March 20, 1986, FBIS-SAS-86-055, March 21, 1986.

¹¹⁹ Diary of Rafsanjani, *Onj-e Defa* [peak of defense], pp. 106-107 (IRIAF air attacks, IRIGF Artillery unit attacks), p. 283 (IRGC Artillery unit attacks), p. 196 (air, missile, artillery attacks as retaliation), p. 369 (IRIGF Oghab rocket attacks).

missiles and launchers.¹²⁰ After an intense effort to fix them, the IRGC Missile Unit in January 1987 was able to prepare and launch Scud missiles by itself for the first time.¹²¹ Throughout the war, Iran's Scud attacks were constrained by its modest arsenal of tens of missiles, which was smaller than Iraq's by orders of magnitude.¹²² Iran continued its limited missile retaliatory attacks using North Korean-provided missiles for the rest of the war—firing a total of approximately eighty Scud missiles,¹²³ compared to Iraq's use of hundreds of Scud B¹²⁴ and 189 longer-range Al-Hussein missiles.¹²⁵

In contrast to the case of ballistic missiles, where the IRGC's Missile Unit deployed and fired the Scud B, both the IRGC (its Artillery Unit) and the Artesh—namely its IRIGF and IRIAF—were involved in launching artillery rockets against Iraq as part of Iran's retaliation policy.¹²⁶ During the last few years of the war, the IRGC and Artesh reportedly fired hundreds of rockets altogether—mostly shorter-range rockets but later a limited number of longer-range rockets—at Iraqi cities and industrial targets along Iran's western border.¹²⁷

Response to Tanker War

To retaliate for Iraqi attacks against Iranian shipping and oil facilities as part of the Tanker War while also threatening Gulf Arab countries, Iran sought to acquire, threaten to use, and use longer-range, more capable anti-ship cruise missiles. Such missiles would improve upon Iran's limited existing capabilities for strikes with aircraft and smaller, short-range cruise missiles and played an important role in responding to—and threatening—the increasing U.S. military activities and presence in the region during the war's later years.

Acquisition of Long-Range Cruise Missiles

¹²⁰ Iranian documentary, “paiz 63 - tavan-e mushaki-e sepah” [fall of 63 [1984]: IRGC missile capability], 23 Esfand 1400 [March 14, 2022].

¹²¹ Diary of Rafsanjani, 21 Dey 1365 [January 11, 1987], *Onj-e Defa* [peak of defense]. In January 1987, IRGC Air Force commander Musa Rafan and Rafsanjani discussed how the IRGC Missile Unit now had no need for assistance from Libya or others to launch missiles. (Diary of Rafsanjani, 1 Bahman 1365 [January 21, 1987], *Onj-e Defa* [peak of defense].)

¹²² During the 1970s and 1980s, Iraq reportedly received 819 Scud B missiles from the Soviet Union. (“Delivery Systems,” Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD, with Addendums (Duelfer Report), Volume 2, September 30, 2004, p. 3.)

¹²³ “joziat-e 89 sili-e mushaki-e Iran be Saddam / tigh-ha-ye abdideh; tazmin-e jan-e sharhneshinan-e Iran” [details of Iran's 89 missile slaps on Saddam / watered-down blades; guaranteeing the lives of the citizens of Iran], *Tasnim News*, 4 Mehr 1395 [September 25, 2016], <https://www.tasnimnews.com/fa/news/1395/07/04/1194944/>.

¹²⁴ Ali Khaji, Shaoodin Fallahdoost, and Mohammad Reza Soroush, “Civilian casualties of Iranian cities by ballistic missile attacks during the Iran-Iraq war (1980-1988),” *Chinese Journal of Traumatology*, Vol. 13, No. 2 (2010), p. 88.

¹²⁵ UNMOVIC, p. 347.

¹²⁶ Diary of Rafsanjani, *Onj-e Defa* [peak of defense], pp. 106-107 (IRIAF air attacks, IRIGF Artillery unit attacks), p. 283 (IRGC Artillery unit attacks), p. 196 (air, missile, artillery attacks as retaliation), p. 369 (IRIGF Oghab rocket attacks).

¹²⁷ Joseph S. Bermudez, Jr., “Ballistic Missile Development in Iran,” paper prepared for the Missile Proliferation Project at the Monterey Institute of International Studies, February 1, 1992, pp. 32-33; “Show Throws Light on Iran's Arms Industry,” *Jane's Defence Weekly*, 19 November 1988; Bermudez, Jr., “Iran's Missile Development,” in Potter and Jencks, eds., *The International Missile Bazaar*, p. 50; “Iran's Growing Missile Forces,” *Jane's Defence Weekly*, 23 July 1988; “Majlis Speaker Interviewed on 'Val-Fajr-10',” Tehran Television Service, March 19, 1988, FBIS-NES-88-055, March 22, 1988.

Iran's cruise missile acquisition efforts focused on obtaining the Chinese HY-2 Silkworm anti-ship cruise missile (ASCM).¹²⁸ Despite reports that Iran *captured* limited numbers of Iraqi Silkworm or Soviet-made Styx missiles,¹²⁹ the main thrust of Iran's acquisition effort was in fact on *purchasing* Silkworm missiles, equipment, and training from China. Similar to Iran's Scud B missile efforts, the IRGC had the lead in acquiring and deploying the Silkworm.¹³⁰

To this end, Iran began secret talks with China to purchase Silkworms in mid-1985,¹³¹ and later that year the IRGC signed a contract for one hundred missiles and forty-eight launchers.¹³² By mid-1986, an IRGC team had traveled to China for training on ASCMs, and Rafsanjani and IRGC Minister Mohsen Rafiqhust discussed deployment locations for the missiles and the need for more training to effectively operate the missiles.¹³³ By December 1986, the IRGC Navy (IRGCN) had established deployment sites for ASCMs in southwest Iran¹³⁴ and around the Strait of Hormuz.¹³⁵ The IRGCN then conducted testing of the ASCM in December 1986 and worked to make the system operational.¹³⁶ Rafiqhust stated that, by May 1987, the IRGC had deployed Chinese ASCMs along its coast, including around the Strait of Hormuz.¹³⁷ According to David Crist, "Any ship entering the Gulf had to pass through the Silkworm missile envelope, and the [U.S. military] regarded these missiles as the most potent conventional threat to convoy operations."¹³⁸

Similar to the case of the Scud B, Iran reportedly began efforts in 1987 to establish a domestic capability to produce the Silkworm through reverse engineering, Chinese assistance, or both.¹³⁹

¹²⁸ The 95-km-range Silkworm was "strategic" in the context of Iran and the war because it could attack ships and port facilities in the Persian Gulf from Iranian territory, and its deployment could threaten all commercial and military ships in the strategic Strait of Hormuz. Importantly, with its larger warhead, the Silkworm could sink ships as opposed to simply causing damage. Indeed, the Silkworm had "strategic effects" on the United States in terms of its perceived threat to U.S. interests and the U.S. sending of explicit warnings to Iran not to use the missile.

¹²⁹ The Chinese HY-2 was based on the Soviet Styx anti-ship cruise missile. (Diary of Rafsanjani, 28 Dey 1366 [January 18, 1988], *Defa va Sijyasat* [defense and policy]; Hiro, *The Longest War*, p. 194; "Envoy in Beijing Says Missiles Not From China," Hong Kong AFP, August 14, 1987, FBIS-NES-87-158, August 17, 1987; Charles P. Wallace, "Missile, Possibly Iranian Silkworm, Hits in Kuwait," *Los Angeles Times*, September 5, 1987, <https://www.latimes.com/archives/la-xpm-1987-09-05-mn-1635-story.html>.)

¹³⁰ While there appears to have been some disagreement between the IRGC and Artesh over who would control the ASCMs, the IRGC Navy eventually was the service that deployed and operated them. In April 1986, Rafsanjani was involved in discussions about dividing up the ASCMs that Iran had purchased from China, which was a point of contention between the navies of the IRGC and Artesh. (Diary of Rafsanjani, 30 Farvardin 1365 [April 19, 1986], *Onj-e Defa* [peak of defense].)

¹³¹ Diary of Rafsanjani, 12 Khordad 1364 [June 2, 1985] and 19 Tir 1364 [July 10, 1985], *Omid va Delhapasi* [hope and anxiety].

¹³² CIA, "Iran's Silkworm Antiship Missile Capability."

¹³³ Diary of Rafsanjani, 9 Tir 1365 [June 30, 1986], *Onj-e Defa* [peak of defense]. In July 1986, Rafsanjani wrote a letter to Chinese prime minister [Zao Ziang] highlighting Iran's limitations in operating the ASCMs and requesting a Chinese training team be sent to Iran for immediate training on ASCMs. (Diary of Rafsanjani, 25 Tir 1365 [July 16, 1986], *Onj-e Defa* [peak of defense]; see pp. 716-717 for the text of the letter.)

¹³⁴ Diary of Rafsanjani, 19 Azar 1365 [December 1, 1986], *Onj-e Defa* [peak of defense].

¹³⁵ Diary of Rafsanjani, 23 Azar 1365 [December 14, 1986], *Onj-e Defa* [peak of defense].

¹³⁶ Diary of Rafsanjani, 24 Azar 1365 [December 15, 1986], *Onj-e Defa* [peak of defense].

¹³⁷ Alamian, *Khaterat-e Mohsen Rafiqhust* [memoirs of Mohsen Rafiqhust], pp. 364-365; CIA, "Iran's Silkworm Antiship Missile Capability."

¹³⁸ Crist, "Gulf of Conflict," p. 10.

¹³⁹ Bermudez, Jr., "Iran's Missile Development," pp. 49-60.

According to IRGC minister Rafighdust, in late 1987 the IRGC began to copy ASCMs—probably the Silkworm—using missiles from the large shipment it received from China.¹⁴⁰

Threats and Retaliation in the Tanker War

Much like its retaliatory strikes that were intended to deter Iraqi air and missile strikes, Iranian leaders by May 1984 had decided to retaliate against ships leaving or entering the western Persian Gulf—including oil tankers. Correspondingly, they began a series of actions designed to compel Gulf Arab states to pressure Iraq to stop its attacks against Iranian shipping and oil facilities.¹⁴¹ According to Rafsanjani, Iran’s retaliatory actions in the Persian Gulf were a form of both retaliation (*moghabeleh be mesl*) and deterrence (*bazdaranedgi*) against the evils of the Iraqi regime.¹⁴²

Broadly speaking, Iran’s retaliation policy in the Tanker War was linked to the implied threat contained in its stated policy that “either the Persian Gulf will be safe for all or for no one.”¹⁴³ As stated by Rafsanjani, “the Persian Gulf should be safe for everyone and if they want to make it unsafe for Iran, it will become unsafe for everyone.”¹⁴⁴ He added that if the Persian Gulf is insecure for Iran, God will make it insecure for all and no crime (*shararat*) will occur without a response.¹⁴⁵

The reason why Iran targeted Gulf Arab oil tankers and oil and port facilities as part of its policy of retaliation is because it could not attack Iraqi oil shipments. Indeed, Iraq did not use oil tankers in the Persian Gulf and instead used pipelines through Turkey and Saudi Arabia as well as tanker trucks through Jordan.¹⁴⁶ Rafsanjani noted that Saudi and Kuwaiti oil tankers were legitimate targets since Iraq’s attacks were part of a collective conspiracy (*tote’eh-ye dasteh-jam’i*) involving its Gulf Arab allies.¹⁴⁷ As a 1987 CIA assessment states, “Since Baghdad began the ‘tanker war’ in 1984, Iran has

¹⁴⁰ Alamian, *Khaterat-e Mohsen Rafighdust* [memoirs of Mohsen Rafighdust], p. 377.

¹⁴¹ Diary of Rafsanjani, 20-21 Ordibehesht 1363 [May 10-11, 1984], Be Suye Sarnevesht [towards destiny]; U.S. Central Intelligence Agency, Directorate of Intelligence, “Iraq-Iran: The War Moves Into the Gulf,” May 17, 1984, <https://www.cia.gov/readingroom/docs/CIA-RDP85T00287R001301570002-5.pdf>; U.S. Central Intelligence Agency, Directorate of Intelligence, “The Tanker War: Ship Attacks in the Persian Gulf,” June 1987, https://www.cia.gov/readingroom/docs/DOC_0000268293.pdf; Hiro, *The Longest War*, p. 214.

¹⁴² “mosabeheh-ye agha-ye Hashemi ba khabar-gozari-e jomhuri-e eslami piramun-e bastan-e tangeh-ye hormuz” [interview of Mr. Hashemi with IRNA about closing the Strait of Hormuz], 9 Farvardin 1366 [March 29, 1987], Center of Documents of Ayatollah Hashemi Rafsanjani, <https://rafsanjani.ir/records/%D9%85%D8%B5%D8%A7%D8%AD%D8%A8%D9%87-%D8%A2%D9%82%D8%A7%DB%8C-%D9%87%D8%A7%D8%B4%D9%85%DB%8C-%D8%A8%D8%A7-%D8%AE%D8%A8%D8%B1%DA%AF%D8%B2%D8%A7%D8%B1%DB%8C-%D8%AC%D9%85%D9%87%D9%88%D8%B1%DB%8C-%D8%A7%D8%B3%D9%84%D8%A7%D9%85%DB%8C-%D9%BE%DB%8C%D8%B1%D8%A7%D9%85%D9%88%D9%86-%D8%A8%D8%B3%D8%AA%D9%86-%D8%AA%D9%86%DA%AF%D9%87-%D9%87%D8%B1%D9%85%D8%B2?q=%D8%A8%D8%A7%D8%B2%D8%AF%D8%A7%D8%B1%D9%86%D8%AF%DA%AF%DB%8C>.

¹⁴³ “Majlis Speaker: Iraq’s Weapons Suppliers Create Crisis,” Tehran IRNA, May 15, 1984, FBIS-SAS-84-096, May 15, 1984.

¹⁴⁴ Diary of Rafsanjani, *Defa va Siyasat* [defense and policy], p. 11. Rafsanjani also stated that it was Iran’s policy that either all ships can travel in the Persian Gulf safely or no ship will be able to move through it. (“Hashemi-Rafsanjani Interviewed,” Tehran Domestic Service, June 11, 1984, FBIS-SAS-84-114, June 12, 1984.)

¹⁴⁵ Diary of Rafsanjani, *Omid va Delvapas* [hope and anxiety], p. 17.

¹⁴⁶ Murray and Woods, *The Iran-Iraq War*, p. 239; Pollack, *The Persian Puzzle*, p. 224.

¹⁴⁷ Diary of Rafsanjani, 19 Ordibehesht 1363 [May 9, 1984], *Be Suye Sarnevesht* [towards destiny].

retaliated against shipping bound for the Gulf Arab states in the hope that these countries will pressure Iraq to stop its attacks.”¹⁴⁸

Iran initially carried out these retaliatory actions using IRIAF aircraft, Iranian helicopters, IRGCN small boats, and Artesh Navy (IRIN) short-range Sea Killer and Harpoon anti-ship missiles. Later—with its acquisition of Silkworm ASCMs¹⁴⁹ from China—the IRGCN began to use more capable, longer-range cruise missiles.¹⁵⁰ Also, when it directly confronted U.S. naval forces in 1988, Iran reportedly unsuccessfully attempted to fire Sea Killer missiles,¹⁵¹ its sole Harpoon missile,¹⁵² and Silkworms¹⁵³ at U.S. ships. According to claims by Iranian officials, Iran conducted 140 retaliatory operations during the Tanker War, including missile attacks that struck fifty ships.¹⁵⁴

An important contrast between Iran’s approach to retaliation in the War of the Cities and the Tanker War is that, while Iran’s retaliatory strikes in the former were overt and publicized by Tehran, it aimed at deniability in its attacks in the latter. It did so reportedly out of a desire to minimize the risk of retaliation against it while still imposing costs on its adversaries.¹⁵⁵ Iranian officials in some cases referred to these deniable strikes as “invisible shots” (*tir-ha-ye gheib*), and in his diaries, Rafsanjani recorded instances of military officials reporting to him that Kuwaiti, Saudi, and other foreign ships had been hit by “invisible shots”—for example, in May 1984,¹⁵⁶ August 1984,¹⁵⁷ June 1987,¹⁵⁸ and May 1988.¹⁵⁹ For his part, then-President Khamenei said of a 1987 Iranian Silkworm missile strike on Kuwait that “Almighty God alone knew best where the missile came

¹⁴⁸ U.S. Central Intelligence Agency, Directorate of Intelligence, “The Tanker War: Ship Attacks in the Persian Gulf,” June 1987, https://www.cia.gov/readingroom/docs/DOC_0000268293.pdf.

¹⁴⁹ According to a 1989 CIA estimate, the Silkworm had a 95 km range and 1,000 kg warhead, enabling one missile to “cause sufficient hull damage or fires to sink even the largest supertanker.” (U.S. Central Intelligence Agency, Office of Near Eastern and South Asian Analysis, Persian Gulf Division, Iran-Iraq Branch, “Iran’s Silkworm Antiship Missile Capability,” July 2, 1989, <https://www.cia.gov/readingroom/docs/CIA-RDP90T00114R000700410001-6.pdf>.)

¹⁵⁰ U.S. Central Intelligence Agency, Directorate of Intelligence, “Iraq-Iran: The War Moves Into the Gulf,” May 17, 1984, <https://www.cia.gov/readingroom/docs/CIA-RDP85T00287R001301570002-5.pdf> (IRIAF airstrikes); CIA, “Iran’s Silkworm Antiship Missile Capability”; Pollack, *The Persian Puzzle*, p. 224 (IRGCN small boat attacks, Silkworm); Diary of Rafsanjani, *Onj-e Defa* [peak of defense], pp. 314, 392, 438-440 (IRIN Sea Killer missile, IRGCN Silkworm, Harpoon); Razoux, *The Iran-Iraq War*, p. 376, 541 (Sea Killer, Silkworm); Bernard E. Trainor, “Iranian Warships Now Using Missiles for Night Attacks,” *New York Times*, January 20, 1987, <https://www.nytimes.com/1987/01/20/world/iranian-warships-now-using-missiles-for-night-attacks.html> (aircraft, helicopters, Sea Killer).

¹⁵¹ Razoux, *The Iran-Iraq War*, pp. 447-448.

¹⁵² Pollack, *The Persian Puzzle*, p. 229; Razoux, *The Iran-Iraq War*, p. 446. According to David Crist, as of 1986, “Iran had only one functioning Harpoon antiship missile.” (Crist, “Gulf of Conflict,” p. 11.)

¹⁵³ Razoux, *The Iran-Iraq War*, p. 448; Richard Pyle, “Iran Fired Silkworm Missiles At U.S. Ships With PM-Gulf-Rdp, Bjt,” *Associated Press*, April 19, 1988, <https://apnews.com/article/a1587de448ccddb14b66c7cf8b81876a>.

¹⁵⁴ “farmandeh-ye niru-ye daryai-e sepah: estekbar-e jahani dar 40 sal-e gozashteh hamvareh ba mellat-e Iran doshmani kardeh ast” [IRGC navy commander: global arrogance has always been hostile to the Iranian nation in the last 40 years], *Mebr News*, 2 Tir 1396 [June 23, 2017], <https://www.mehrnews.com/news/4012437/>; “Fadavi matrah kard: ghabeliat-ha-ye mushak-e ‘khalij-e fars’ moadelat-e doshman ra taghir medahad” [Fadavi said: the capabilities of the “Persian Gulf” missile change the calculations of the enemy], *Mebr News*, 4 Ordibehesht 1391 [April 23, 2012], <https://www.mehrnews.com/news/1584729/>.

¹⁵⁵ Crist, “Gulf of Conflict,” pp. 11-12.

¹⁵⁶ Diary of Rafsanjani, 3 Khordad 1363 [May 24, 1984], *Be Suye Sarnevesht* [towards destiny].

¹⁵⁷ Diary of Rafsanjani, 27 Mordad 1363 [August 18, 1984], *Be Suye Sarnevesht* [towards destiny].

¹⁵⁸ Diary of Rafsanjani, 6 Tir 1366 [June 27, 1987], *Defa va Siyasat* [defense and policy].

¹⁵⁹ Diary of Rafsanjani, 29 Ordibehesht 1367 [May 19, 1988], *Payan-e Defa, Aghaz-e Baz-Sazi* [end of war, start of reconstruction]. Rafsanjani separately noted that “the evils of Saddam and his allies were answered with invisible shots.” (Diary of Rafsanjani, *Omid va Delvapasi* [hope and anxiety], p. 17.)

from.”¹⁶⁰ Also, apparently as part of its efforts at deniability, Iran also tried to blame Iraq for missile attacks, since both countries deployed the Silkworm ASCM.¹⁶¹ Rafsanjani even claimed that the United States was behind Silkworm attacks to “make the situation worse and more tense in the Persian Gulf in order to become more involved.”¹⁶²

In addition to their actual use, Silkworm missiles also played an important role in the implicit and explicit threats Iran made against international shipping. Indeed, Iran threatened to close the Strait of Hormuz in response to Iraqi attacks simply by basing its missiles along it¹⁶³—a deployment which, according to David Crist, gave it “the means to control the Strait of Hormuz and to attack any ship entering or leaving.”¹⁶⁴ Similarly, in 1987, the U.S. intelligence community reported that Iran had contingency plans to close the Strait to oil exports, plans that probably relied in large part on the Silkworm.¹⁶⁵ As the commander of the IRIN stated in 1988, Iran’s policy was to close the Strait for all countries if it could not use it, and it would employ its ASCMs and other weapons to do so.¹⁶⁶

The Silkworm also played a role in the explicit threats Iran leveled against U.S. naval forces in the region. In June 1987, an IRGC official stated that any fleet entering the Persian Gulf was vulnerable to Iran’s shore-based missiles and that if the U.S. military attempted to land forces on Iranian territory, the IRGCN would respond using missiles.¹⁶⁷ That same month, IRGC commander Mohsen Rezaei stated that the IRGC’s ASCMs deployed along Iran’s coast could be used against military ships, including in the Strait of Hormuz.¹⁶⁸ The IRGCN deputy commander further stated that the entire Strait of Hormuz was within the IRGC’s missile range.¹⁶⁹

In addition to use of ASCMs against ships and port facilities, Iran apparently considered using these missiles, probably the Silkworm, in a land-attack role. In February 1987, Rafsanjani and IRGCN commander Hossein Alai planned to study the possibility of using ASCMs to strike cities and land-based targets.¹⁷⁰ This offered an early preview of Iran’s initial interests in land-attack cruise missiles that would not come to fruition until decades later.

¹⁶⁰ Crist, *The Twilight War*, p. 310.

¹⁶¹ Richard A. Mobley, “Fighting Iran: Intelligence Support During Operation *Earnest Will*, 1987-1988,” *Studies in Intelligence*, Vol. 60, No. 3 (September 2016), p. 3.

¹⁶² Charles P. Wallace, “Missile, Possibly Iranian Silkworm, Hits in Kuwait,” *Los Angeles Times*, September 5, 1987, <https://www.latimes.com/archives/la-xpm-1987-09-05-mn-1635-story.html>.

¹⁶³ Razoux, *The Iran-Iraq War*, p. 344; Pollack, *The Persian Puzzle*, p. 224; Bernard E. Trainor, “New Iran Missiles Reported at Gulf Entrance: U.S. Reports Iran Has New Missiles,” *New York Times*, March 15, 1987, <https://www.nytimes.com/1987/03/15/world/new-iran-missiles-reported-at-gulf-entrance.html>.

¹⁶⁴ Crist, *The Twilight War*, p. 218.

¹⁶⁵ U.S. Central Intelligence Agency, “Iran and the Superpowers in the Gulf,” Special National Intelligence Estimate, June 1987, https://www.cia.gov/readingroom/docs/DOC_0005557216.pdf; Mobley, “Fighting Iran,” p. 7.

¹⁶⁶ “Navy Chiefs Discuss Latest Operations,” Tehran Television Service, April 21, 1988, FBIS-NES-88-078, April 22, 1988.

¹⁶⁷ “IRGC Deputy Chief Threatens To Use Missiles,” Tehran Domestic Service, June 11, 1987, FBIS-NES-87-113, June 12, 1987.

¹⁶⁸ “KEYHAN Interviews IRGC Commander Rezaei,” Tehran KEYHAN, June 29, 1987, FBIS-NES-87-129, July 7, 1987.

¹⁶⁹ “Strait of Hormuz Reportedly in Missile Range,” Tehran Domestic Service, June 19, 1987, FBIS-NES-87-119, June 22, 1987.

¹⁷⁰ Diary of Rafsanjani, 15 Bahman 1365 [February 4, 1987], *Onj-e Defa* [peak of defense].

Response to CW Attacks

In response to Iraq's use of CW by 1983, Iran condemned Iraq's actions as an "evil" (*sbararat*) and "crime" (*jenayat*). It also condemned the United States and European governments for their companies' supply of CW technology to Iraq and criticized the international community for its lack of response to and action against Iraq's use of CW. Importantly, Iran also threatened that it would retaliate in kind and developed its own limited CW production capabilities, although there is debate over whether Iran actually weaponized CW into deliverable weapons or resorted to using it during the war. Further, Iraq's use of CW has also been cited as a key factor driving Iran's decision to resume its nuclear program—and suspected nuclear weapons intentions—as well as its suspected biological weapons (BW) program.

Acquisition, Threat of Use, and Possible Use of CW

Several sources claim Iran began an offensive CW program in 1983, including the development of sulfur mustard and choking agent,¹⁷¹ in parallel with efforts to develop CW defense capabilities to protect its military forces.¹⁷² According to Michael Brill, "U.S. diplomatic records and Iraqi intelligence records both date the beginning of Iran's chemical weapons program to 1983, the same year Iraq began using chemical weapons against Iran on a large scale."¹⁷³ According to Rafsanjani, Iranian leaders as early as March 1984 discussed the need to prepare the means for retaliation in kind as well as the appropriate propaganda, in response to Iraq's use of CW.¹⁷⁴ That same month, Rafsanjani met with IRGC minister Rafiqdust about creating a strategy to retaliate against Iraqi CW.¹⁷⁵ Publicly, Rafsanjani stated that although Iran did not intend to use CW, it had the capability to develop these weapons—including filling artillery shells—and could not be "patient forever."¹⁷⁶ Later in 1984, Rafsanjani indicated that:

Our policy is that of Islamic retribution and retaliation in kind, which has been accepted as a principle throughout the world. So far we have not used chemical weapons, but things will not be such that if the war continues we will always remain with our hands tied. One day we will carry out the policy of retaliating in kind, which Islam has given us permission to do.¹⁷⁷

¹⁷¹ U.S. Central Intelligence Agency, Director of Central Intelligence, "Impact and Implications of Chemical Weapons Use in the Iran-Iraq War," April 1988, <https://documents2.theblackvault.com/documents/cia/EOM-2019-00273-highlighted.pdf>; "Offensive Chemical Warfare Programs in the Middle East," U.S. Defense Intelligence Agency, DST-1620S-464-90, March 15, 1990, https://www.iranwatch.org/sites/default/files/offensive_chemical_warfare_programs_in_the_middle_east_0.pdf; Bergman, *The Secret War With Iran*, p. 279.

¹⁷² "Rafiqdust Comments at Defence Study Seminar," Tehran Domestic Service, July 18, 1985, FBIS-SAS-85-139, July 19, 1985; Diary of Rafsanjani, 21 Khordad 1366 [June 11, 1987], *Defa va Siyasat* [defense and policy]; Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," pp. 94-95.

¹⁷³ Michael Brill, "Part II: 'We attacked them with chemical weapons and they attacked us with chemical weapons': Iraqi Records and the History of Iran's Chemical Weapons Program," *Sources and Methods*, Wilson Center, March 31, 2022, <https://www.wilsoncenter.org/blog-post/part-ii-we-attacked-them-chemical-weapons-and-they-attacked-us-chemical-weapons-iraqi>.

¹⁷⁴ Diary of Rafsanjani, 1 Farvardin 1363 [March 21, 1984], *Be Suye Sarnevesht* [towards destiny].

¹⁷⁵ Diary of Rafsanjani, 6 Farvardin 1363 [March 26, 1984], *Be Suye Sarnevesht* [towards destiny].

¹⁷⁶ "Hashemi-Rafsanjani Discusses Chemical Weapons," Tehran Domestic Service, March 23, 1984, FBIS-SAS-84-059, March 26, 1984.

¹⁷⁷ "Hashemi-Rafsanjani on Retribution, Retaliation," Tehran Domestic Service, August 17, 1984, FBIS-SAS-84-162, August 20, 1984.

From 1984 to 1986, Iranian officials continued to threaten that Iraq's continued use of CW and the lack of international response to it were increasing the risk that Tehran would be forced to respond in kind.¹⁷⁸ By August 1986, Rafsanjani was claiming that Iran had developed the capability to "retaliate in kind to the same level as Iraq"¹⁷⁹—a statement consistent with a CIA report that same year that assessed Iran had "filled a small number of bombs with chemical agents"¹⁸⁰ and also with Iranian official declarations that it had produced 2,500 tons of mustard agent toward the end of the war.¹⁸¹ In January 1988, IRGC minister Rafiqdust stated that Iran had a "high capability" to produce CW and warned that his country "would be forced to resort to chemical warfare" if Iraq used CW against Iran's military or civilians.¹⁸² That same month, Rafiqdust added that Iran had been successful in producing CW and could respond in kind to Iraqi CW attacks unless the "world comes to its senses and stops Saddam's madness."¹⁸³

While the picture of Iran's production of CW agents during the war is relatively clear—including Iranian admissions of production—there remains debate over whether Iran actually weaponized CW agents into delivery systems.¹⁸⁴ Indeed, as Brill finds, "Iran's chemical weapons program and possible battlefield use of chemical weapons on a limited scale during the latter phases of the Iran-Iraq War remain controversial and debated more than three decades later."¹⁸⁵ Regarding weaponization, several sources alleged that Iran weaponized CW into deliverable munitions, including mortar grenades, artillery shells, and aircraft-delivered bombs and that it transferred CW munitions to Libya during the war, further suggesting weaponization.¹⁸⁶ There were also limited

¹⁷⁸ See, for example: "Letter Dated March 26, 1985 From the Permanent Representative of the Islamic Republic of Iran to the United Nations Addressed to the Secretary-General," United Nations Security Council document S/17059, March 26, 1985, <https://digitallibrary.un.org/record/78042?ln=en/>; "Official on Iraqi Chemical Attacks," Tehran IRNA, March 13, 1985, FBIS-SAS-85-050, March 14, 1985; "Khamene'i Speech at Friday Prayers on Retaliation," Tehran Domestic Service, March 15, 1985, FBIS-SAS-85-051, March 15, 1985; "Iranian Envoy Say Iraq Using Chemical Weapons, Warns Push to Baghdad," *Associated Press*, February 14, 1986.

¹⁷⁹ "Hashemi-Rafsanjani Interviewed on War," Tehran Domestic Service, August 28, 1986, FBIS-SAS-86-168, August 29, 1986.

¹⁸⁰ U.S. Central Intelligence Agency, Directorate of Intelligence, "Iran-Iraq: Ballistic Missile Warfare and Its Regional Implications," March 1986, <https://www.cia.gov/readingroom/docs/CIA-RDP88T00096R000100120003-6.pdf>.

¹⁸¹ R. Jeffrey Smith, Joby Warrick, and Colum Lynch, "Iran May Have Sent Libya Shells for Chemical Weapons," *Washington Post*, November 20, 2011, <https://wapo.st/2nKw6TY>; Michael Eisenstadt, "What Iran's Chemical Past Tells Us About Its Nuclear Future," Washington Institute for Near East Policy, April 3, 2014, <https://www.washingtoninstitute.org/policy-analysis/what-irans-chemical-past-tells-us-about-its-nuclear-future>.

¹⁸² "Rafiqdust on Chemical Weapons, Arms Capability," Tehran IRNA, January 14, 1988, FBIS-NES-88-010, January 15, 1988.

¹⁸³ "IRGC Minister Rafiqdust on Arms Production," Tehran Domestic Service, January 27, 1988, FBIS-NES-88-017, January 27, 1988.

¹⁸⁴ For valuable treatment of the debate, see: JP Sanders, "Allegations of Iranian Use of Chemical Weapons in the 1980-88 Gulf War—Iran's offensive preparations," *The Trench*, April 19, 2019, <https://www.the-trench.org/allegations-of-iranian-use-of-chemical-weapons-in-the-1980-88-gulf-war-irans-offensive-preparations>; Jean Pascal Zanders, "Iranian Use of Chemical Weapons: A Critical Analysis of Past Allegations," Center for Nonproliferation Studies Briefing Series, March 7, 2001, <https://www.the-trench.org/wp-content/uploads/2019/04/20010307-Iran-CBW-use-Zafary-presentation-summary.pdf>.

¹⁸⁵ Michael Brill, "Part I: 'We attacked them with chemical weapons and they attacked us with chemical weapons': Iraqi Records and the History of Iran's Chemical Weapons Program," *Sources and Methods*, Wilson Center, March 29, 2022, <https://www.wilsoncenter.org/blog-post/part-i-we-attacked-them-chemical-weapons-and-they-attacked-us-chemical-weapons-iraqi>.

¹⁸⁶ U.S. Department of State, "Compliance With the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction," June 2020, <https://www.state.gov/wp->

claims that Iran attempted to acquire CW warheads for its Scud ballistic missiles.¹⁸⁷ Iran officially denies it weaponized CW for delivery, however, and has asserted that “with regard to munitions it should be stated that the chemical weapons agents were never weaponized.”¹⁸⁸

Iran’s possible use of CW is similarly the subject of debate. For instance, Shahram Chubin states that, “Iran’s use of chemical arms is disputed. If it used them it did so on a small scale and infrequently.”¹⁸⁹ Several sources claim that Iran resorted to using CW against Iraq’s military as early as 1985—possibly for testing or training and possibly initially using CW munitions captured from Iraq.¹⁹⁰ Various reports assert that Tehran’s use of Iranian-produced CW began in 1986 or 1987,¹⁹¹ and Gregory Giles claims that, by 1987, Ayatollah Khomeini had secretly authorized Iran’s use of CW.¹⁹² Iraqi military officials and documents also claimed that Iran started using CS tear gas against Iraqi troops in 1983 and using CW—including phosgene and mustard agents—in 1987.¹⁹³ In 1989 testimony, the U.S. Director for Central Intelligence claimed that Iran used CW in retaliation against Iraq’s military during the war.¹⁹⁴

As with claims of weaponization, however, Iran officially denies that it used CW. In 1989, Foreign Minister Ali Akbar Velayati stated that Iran “never resorted to chemical weapons use, even in retaliation.”¹⁹⁵ Similarly, longtime Iranian diplomat Ali Akbar Salehi has indicated that, while Iraq used chemical weapons Iran during that war, Iran never used CW despite having the ability to

[content/uploads/2020/06/2020-10C-Report-Unclassified-Version-for-H.pdf](#); U.S. Central Intelligence Agency, Director of Central Intelligence, “Impact and Implications of Chemical Weapons Use in the Iran-Iraq War,” April 1988, <https://documents2.theblackvault.com/documents/cia/EOM-2019-00273-highlighted.pdf>. In a diary entry in August 1987, Rafsanjani appears to corroborate claims that Iran transferred CW munitions to Libya in September 1987 in return for Soviet naval mines—Rafsanjani stated that Libya had asked Iran for some special weapons (*selab-e khas*), and that Iran agreed to provide them in return for unidentified items. (Diary of Rafsanjani, 1 Shahrivar 1366 [August 23, 1987], *Defa va Siyasat* [defense and policy]; Elaine Sciolino, “US and Soviet Protest to Libya over Iran Mines,” *New York Times*, September 11, 1987, <https://www.nytimes.com/1987/09/11/world/us-and-soviet-protest-to-libya-over-iran-mines.html>.)

¹⁸⁷ “Libya Reportedly Armed Iran and Syria with Soviet Nerve Gas,” *Associated Press*, November 23, 1986; “Chemical and Biological Warfare Programme Special Report,” *Jane’s Intelligence Review*, April 1, 1994, p. 192.

¹⁸⁸ Quoted in Brill, “Part II: ‘We attacked them with chemical weapons and they attacked us with chemical weapons.’”

¹⁸⁹ Chubin, *Iran’s National Security Policy*, p. 24.

¹⁹⁰ Don Oberdorfer, “Chemical Arms Curbs are Sought; Officials Alarmed by Increasing Use of Banned Weapons,” *Washington Post*, September 9, 1985, p. A1.

¹⁹¹ U.S. Central Intelligence Agency, “Iran-Iraq: Chemical Warfare Continues,” November 1986, https://www.cia.gov/readingroom/docs/DOC_0005406120.pdf; U.S. Central Intelligence Agency, Director of Central Intelligence, “Impact and Implications of Chemical Weapons Use in the Iran-Iraq War,” April 1988, <https://documents2.theblackvault.com/documents/cia/EOM-2019-00273-highlighted.pdf>.

¹⁹² Giles, “The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons,” p. 83.

¹⁹³ General Military Intelligence Directorate Memos on Iran’s Chemical Weapons Capability and Alleged Use, October 1987, Conflict Records Research Center, National Defense University, SH-GMID-D-000-898, <https://digitalarchive.wilsoncenter.org/document/general-military-intelligence-directorate-memos-irans-chemical-weapons-capability-and>; Letter of General Military Intelligence Directorate about Iranian Use of Chemical Weapons on Iraqi Troops, April 14, 1987, Conflict Records Research Center, National Defense University, SH-GMID-D-001-125, <https://digitalarchive.wilsoncenter.org/document/letter-general-military-intelligence-directorate-about-iranian-use-chemical-weapons-iraqi>.

¹⁹⁴ “DCI Testimony on Chemical and Biological Weapons Before the Senate Committee on Governmental Affairs and its Subcommittee, the Permanent Subcommittee on Investigations,” February 9, 1989, <https://www.cia.gov/readingroom/docs/CIA-RDP90M01243R001400170002-7.pdf>.

¹⁹⁵ Unclassified US State Department Cable; quoted in Gordon M. Burck and Charles C. Flowerree, *International Handbook on Chemical Weapons Proliferation* (Westport, Connecticut: Greenwood Press, 1991), p. 239.

retaliate in kind.¹⁹⁶ Also, Rafsanjani later claimed that “even when Iraq used chemical weapons against us and committed so much atrocity, we still did not use this evil weapon.”¹⁹⁷ Thus, it remains unclear if Iran actually resorted to using CW during the war.

Initial Efforts to Develop a Nuclear Deterrent

In addition to its wartime policy of “retaliation” and efforts to acquire the critical means to implement it, Iran also reportedly initiated steps toward the longer-term goal of establishing a nuclear deterrent. To this end, during the war, Iran restarted the former Shah’s nuclear program—including the pursuit of sensitive fuel cycle capabilities—which would be augmented soon after the war with a military nuclear program.

Several sources indicate that these efforts began sometime between 1982 and 1984, including attempts to develop uranium enrichment and plutonium reprocessing.¹⁹⁸ While the precise timeline is murky, in April 1984, President Khamenei reportedly told a high-level meeting that Ayatollah Khomeini had decided to restart the nuclear program and the president noted that a nuclear arsenal would serve as a “deterrent” to secure the “very essence of the Islamic Revolution” against Iran’s enemies especially the United States and Israel.¹⁹⁹ According to Kenneth Pollack, Iran’s efforts in this regard were also driven by concerns that Iraq was pursuing nuclear weapons.²⁰⁰ According to Vipin Narang, Iran began an “active, clandestine, nuclear weapons program” and pursued what Narang calls a “hiding” strategy—that is, an effort to develop nuclear weapons without being discovered.²⁰¹ As part of these efforts, in 1985, Iran began a uranium enrichment program using gas centrifuges—a decision that, according to David Albright and Corey Hinderstein, is “widely perceived as having been part of an effort to make highly enriched uranium for nuclear weapons.”²⁰² According to former SCNS secretary (and later Iranian president) Hassan Rouhani, Iran also

¹⁹⁶ “gozash-e Elbaradei taht-e solteh-ye sangin-e siyasi-e parandeh-ye Iran ra baz-e neghahdasht ast” [Elbaradei’s report has kept Iran’s case open under heavy political domination], *Mehr News*, 13 Shahrivar 1383 [September 3, 2004], <https://www.mehrnews.com/news/108877/>.

¹⁹⁷ “Iran: Rafsanjani calls on US to abandon its ‘evil intentions,’” Voice of the Islamic Republic of Iran, July 19, 2002, in BBC Monitoring, July 20, 2002, <https://monitoring.bbc.co.uk/product/m12lnxet>.

¹⁹⁸ U.S. Central Intelligence Agency, Directorate of Intelligence, “Overview of Iran’s Renewed Efforts for Nuclear Development,” August 5, 1985, <https://www.cia.gov/readingroom/docs/CIA-RDP88R01225R000200900002-7.pdf>; U.S. Central Intelligence Agency, Director of Central Intelligence, “Current Status of the Iranian Nuclear Program,” April 26, 1984, <https://www.cia.gov/readingroom/docs/CIA-RDP86M00886R000800100036-7.pdf>; Patriakarakos, *Nuclear Iran*, p. 122; Razoux, *The Iran-Iraq War*, pp. 235-236; Michele Gerli, *Beyond Nuclear Ambiguity: The Iranian Nuclear Crisis and the Joint Comprehensive Plan of Action* (Firenze: Firenze University Press, 2019), p. 14; David Albright and Corey Hinderstein, “The centrifuge connection,” *Bulletin of the Atomic Scientists*, Vol. 60, No. 2 (2004), p. 62. For instance, in October 1984, Atomic Energy Organization of Iran (AEOI) head Reza Amrollahi briefed Rafsanjani on the progress of the manufacture of centrifuges for uranium enrichment. (Diary of Rafsanjani, 22 Mehr 1364 [October 14, 1984], *Omid va Delvapas* [hope and anxiety].)

¹⁹⁹ Patriakarakos, *Nuclear Iran*, pp. 120-121; Institute for Science and International Security, “Internal IAEA information links the Supreme Leader to 1984 decision to seek a nuclear arsenal,” ISIS Report, April 20, 2012, https://isis-online.org/uploads/isis-reports/documents/Khamenei_1984_statement_20April2012.pdf.

²⁰⁰ Pollack, *The Persian Puzzle*, p. 259.

²⁰¹ Vipin Narang, *Seeking the Bomb: Strategies of Nuclear Proliferation* (Princeton: Princeton University Press, 2022), pp. 40, 44, 322, 349. According to Narang, hiding is a “high-risk, high-reward strategy that attempts to present the world with a nuclear fait accompli before the program is detected.” (p. 5) He adds, “A hider seeks to build nuclear weapons in a fashion that privileges secrecy over speed. Hiders fear prevention or coercion if their activities and capabilities are discovered by other states.” (p. 23)

²⁰² Albright and Hinderstein, “The centrifuge connection,” p. 62.

“started to pursue fuel cycle technology,” including efforts to purchase technology from states as well as “black market” sources.²⁰³ To this end, in the mid-late 1980s, Iran began engaging with the AQ Khan network, including the procurement of uranium centrifuge technology.²⁰⁴ By January 1988, AEOI head Reza Amrollahi reported to Rafsanjani that he was successful in finding uranium enrichment capabilities—possibly a reference to procurement of centrifuge technology from that illicit network.²⁰⁵ According to a number of sources, by the late 1980s, Iran was pursuing nuclear weapons, not just a nuclear energy program.²⁰⁶ By the end of the war, Iran was starting to put the foundation in place for its postwar efforts to develop a nuclear deterrent.

Scant Evidence of a BW Program

Limited unclassified U.S. government and other sources have claimed that, in addition to its CW and nuclear efforts, Iran also started an offensive BW program during the Iran-Iraq War. While Iran does appear to have developed BW defense capabilities to protect its military forces,²⁰⁷ these sources allege that Iran also pursued offensive BW efforts, including research, production, and limited weaponization of BW agents.²⁰⁸ For example, in 1995, the CIA claimed that Iran had had a BW program “since the early 1980s,”²⁰⁹ and in 1996, the DIA stated that Iran had “maintained an offensive BW program since the mid-1980s, with the intent of developing BW weapons.”²¹⁰ Due to the lack of evidence and details available in open sources regarding Iranian offensive BW intentions and activities, however, this topic is not a focus of the present chapter.

Also of Note: Development of Unmanned Aerial Vehicles

Although not a strategic weapon during the war, it is also worth noting that Iran’s severe wartime needs drove it to start its own development of unmanned aerial vehicles (UAVs). In the ground war,

²⁰³ Document 45. Iranian Supreme National Security Council, Speech, Hassan Rouhani, “Beyond the Challenges Facing Iran and IAEA Concerning the Nuclear Dossier,” circa September 2005, in Malcolm Byrne and Kian Byrne, *Worlds Apart: A Documentary History of US-Iranian Relations, 1978-2018* (Cambridge: Cambridge University Press, 2022), pp. 202-203.

²⁰⁴ Patriakarakos, *Nuclear Iran*, p. 124; Gerli, *Beyond Nuclear Ambiguity*, p. 15.

²⁰⁵ Diary of Rafsanjani, 23 Dey 1366 [January 13, 1988], *Defa va Siyasat* [defense and policy].

²⁰⁶ U.S. Defense Intelligence Agency, “Iran Military Power,” 2019,

https://www.dia.mil/Portals/110/Images/News/Military_Powers_Publications/Iran_Military_Power_LR.pdf, p. 9;

Ariane Tabatabai, “Nuclear Decision-Making in Iran: Implications for US Nonproliferation Efforts,” Center on Global Energy Policy, Columbia University, August 2020, pp. 15-16.

²⁰⁷ “Maneuvers Held ‘To Maintain Combat Readiness,’” Tehran Domestic Service, November 26, 1986, FBIS-SAS-86-229, November 28, 1986.

²⁰⁸ U.S. Department of Defense, Office of the Secretary of Defense, “Proliferation: Threat and Response,” January 2001, <https://irp.fas.org/threat/prolif00.pdf>, pp. 33, 36; U.S. Department of State, “2010 Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments,” July 2010, <https://2009-2017.state.gov/t/avc/rls/rpt/170924.htm>, p. 16; press briefing by the National Council of Resistance on Iran, “Iranian Regime’s Programs for Biological and Microbial Weapons,” May 15, 2003, <https://www.iranwatch.org/library/ncri-iranian-regimes-programs-biological-weapons-5-15-03>; Anthony H. Cordesman with Adam C. Seitz, “Iranian Weapons of Mass Destruction: Biological Weapons Programs,” working draft for review and comments, October 28, 2008, https://csis-website-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/media/csis/pubs/081028_iranbw_chapterrev.pdf.

²⁰⁹ U.S. Central Intelligence Agency, Nonproliferation Center, “The Weapons Proliferation Threat,” March 1, 1995, p. 12.

²¹⁰ U.S. Defense Intelligence Agency, “Current and Projected National Security Threats to the United States and its Interests Abroad,” written responses to questions before the Select Committee on Intelligence of the United States Senate, Hearing 104-510, February 22, 1996, https://irp.fas.org/congress/1996_hr/s960222d.htm.

Iranian commanders desperately needed reconnaissance photographs of Iraqi ground forces and had to halt the use of Iranian RF-4 reconnaissance aircraft flights over Iraqi’s military forces to obtain them due to the high risks posed to the limited number of aircraft.²¹¹ Because Iran’s foreign purchase of UAVs was not possible as a result of sanctions, the IRGC began developing them for reconnaissance purposes, starting with the Talash family.²¹² By the end of the war, the IRGC was also experimenting with Mohajer-family UAVs that could deliver munitions—such as RPG-series anti-tank rockets—and for use as suicide drones.²¹³ Additionally, the IRGC had also begun developing the Ababil-family of UAVs by this time.²¹⁴ These early efforts constituted the “origins” and provided the initial technological and organizational foundations for Iran’s eventual development of what would later become strategic weapons—albeit decades later—in the form of long-range armed and suicide UAVs.

As an aside, in addition to UAVs, Iran also began development of remote-controlled, unmanned explosive boats to strike ships from afar, another indication of Iran’s strong interest as early as the 1980s in using unmanned systems as strike weapons. According to memoirs of both Rafsanjani and IRGC minister Rafighdust, the IRGC in the mid-1980s was developing remote-controlled boats equipped with large warheads to strike warships and had made significant progress by the end of the war.²¹⁵

Table 1. Iran’s Responses to the Pattern Break

Iranian Response	Acquisition	Threat/Use	Key Organizations
Response to Iraqi air/missile attacks, War of the Cities	Scud B ballistic missiles	Threat and use of missiles	<u>Acquisition</u> --IRGC Ministry <u>Threat/Use</u> --IRGC Missile Unit
Response to Iraqi air/missile attacks, War of the Cities	Long-range artillery rockets	Threat and use of artillery rockets	<u>Acquisition</u> --IRGC Ministry --IRGC Ground Force --Defense Ministry --Ministry of Construction Jihad

²¹¹ “pahpad az aghaz ta konun 1—avalin pahpad-ha-ye Iranian cheguneh va cheh-zamani sakhteh shodand?” [UAV from the start to now 1—how and when were the first Iranian UAVs manufactured?], *Tasnim News*, 19 Ordibehesht 1398 [May 9, 2019], <https://www.tasnimnews.com/fa/news/1398/02/19/2006882/>.

²¹² Abdolreza Salemi Nezhad, *Pahpad dar Defa-e Moghadas: Ravand-e Shekl-giri va Naghsb-e Afarini-e Yegan-e Pahpad-e Sepah dar Defa-e Moghadas* [UAV in holy defense: method of shaping and role of creation of IRGC UAV unit in holy defense] (Tehran: Niloofaran, 1395 [March 2016-March 2017]), pp. 13-15.

²¹³ Salemi Nezhad, *Pahpad dar Defa-e Moghadas*, pp. 88, 163-164; “seyr-e ertegha-ye tavan-e pahpadi-e Iran: az ‘talash’ ta ‘shahed’” [route of upgrade of Iran’s UAV capability: from ‘talash’ to ‘shahed’], *Defa Press*, 7 Bahman 1400 [January 27, 2022], <https://defapress.ir/fa/news/502701/>.

²¹⁴ Michael Rubin, “A Short History of the Iranian Drone Program,” American Enterprise Institute, August 2020, pp. 3, 5.

²¹⁵ Diary of Rafsanjani, 28 Ordibehesht 1365 [18 May 1986] and 2 Mehr 1365 [September 24, 1986], *Onj-e Defa* [peak of defense]; Alamian, *Khaterat-e Mohsen Rafighdust* [memoirs of Mohsen Rafighdust], pp. 352, 364.

			<u>Threat/Use</u> --IRGC Artillery Unit --IRIGF, IRIAF
Response to Tanker War	Silkworm anti-ship cruise missiles (ASCMs)	Threat and use of ASCMs, limited air strikes	<u>Acquisition</u> --IRGC Ministry (Silkworm) <u>Threat/Use</u> --IRGC Navy (Silkworm) --IRIN (short-range ASCMs) --IRIAF (air strikes)
Response to Iraqi CW use	--CW capability --CW defense capability	Threat and possible use of CW	<u>Acquisition</u> --IRGC Ministry <u>Threat/Use</u> --Possibly IRGC
Response to wartime reconnaissance needs	Unmanned aerial vehicles (UAVs)	Experimentation with armed and suicide variants	--IRGC Air Force --IRGC Ministry
Initial development of nuclear deterrent	Nuclear fuel cycle capabilities, including uranium enrichment	N/A	--AEOI
Suspected BW program	--Suspected BW capability --BW defense capability	N/A	--IRGC Ministry

1991 “Mini-Pattern Break” Reinforces Iranian Wartime Lessons

Soon after the end of the war, Iran experienced what one might describe as a “mini-pattern break”—the 1991 Gulf War and the dissolution of the Soviet Union—which served to reinforce key lessons and themes for Iranian leaders from the Iran-Iraq War. Although Iran did not perceive any imminent threats to its national security after 1991—and indeed may have enjoyed a short time of decreased threat perceptions—it did see longer-term trends as threatening to its security from the United States, Iraq, and Israel. Specifically, according to Shahram Chubin, the combination of the Iran-Iraq War and the 1991 Gulf War, including the intervention in the Persian Gulf by foreign military forces in both events, served to increase Iran’s “sense of vulnerability” and reinforce its “sense of paranoia and embattlement.”²¹⁶ As such, the events of 1991 strengthened the perception by Iranian leaders of the need to enhance retaliatory deterrence and asymmetric military capabilities, and to maximize Iran’s self-sufficiency in weapons acquisition and defense industries.

²¹⁶ Shahram Chubin, *Iran’s National Security Policy: Capabilities, Intentions, and Impact* (Washington, D.C.: Carnegie Endowment for International Peace, 1994), pp. 9, 20.

As a result of the U.S.-led coalition's overwhelming defeat of Iraq's military in the 1991 Gulf War and the United States' new status as the sole global superpower, Iran perceived a potential threat from its continued military presence in the region. Indeed, after the Gulf War, not only had the U.S.-backed Gulf Arab countries acquiring significant military capabilities, but the United States itself "had established a military presence in the Persian Gulf, becoming Iran's newest neighbor."²¹⁷ The continued U.S. military presence and defense agreements with Gulf Arab states helped to maintain these Iranian perceptions of threat.²¹⁸ Iran apparently feared that, after Iraq, Iran might be "next in line"²¹⁹ as the target of a U.S.-led "rerun of Desert Storm against Iran."²²⁰

The Gulf War had also left Iraq with significant, albeit diminished, military capabilities while revealing the surprising scope and progress of Iraq's WMD and missile programs.²²¹ These insights showed Iranian leaders that "Iran was far behind Iraq in the WMD and ballistic missile fields, and there was a lot of catching up for Iran to do."²²² Iraq's use of ballistic missiles in the 1991 war against U.S. military forces and Israel demonstrated to Iran their potential military and psychological value and their important role in asymmetric warfare due to their survivability by using mobile launchers and their ability to penetrate U.S. and Israeli missile defenses.²²³ Iran also saw how Iraq was deterred from using CW by an adversary (Israel) that could respond in kind,²²⁴ possibly providing a postwar motivation for Iran to maintain a CW retaliatory capability.

In terms of the broader geopolitical landscape, the collapse of the USSR—which had been a longstanding threat to Tehran— "removed a major threat to Iran's security."²²⁵ It also transformed Russia into a source of new weapons purchases—building upon a 1989 arms deal—that would feed into Iran's postwar military buildup.²²⁶ However, the end of the Cold War also "ushered in a new American-dominated unipolar world"²²⁷ and led to a shift in U.S. policy from viewing Moscow as the main threat to the need to counter transnational and regional threats—such as WMD proliferation, terrorism, and adversarial regional powers—with Iran increasingly viewed as a "rogue state."²²⁸ Indeed, by the mid-1990s, U.S. CENTCOM saw Iran as the "greatest long-term threat to U.S. interests and allies in the region."²²⁹

²¹⁷ Mohsen M. Milani, "Iran's post-Cold War policy in the Persian Gulf," *International Journal*, Vol. 49, No. 2 (Spring 1994), p. 342.

²¹⁸ Christin Marschall, *Iran's Persian Gulf Policy: From Khomeini to Khatami* (London: RoutledgeCurzon, 2003), pp. 118, 121.

²¹⁹ Taremi, "Beyond the axis of evil," p. 101.

²²⁰ Shahram Chubin, "Iran's Strategic Aims and Constraints," in Patrick Clawson, eds., *Iran's Strategic Intentions and Capabilities*, McNair Paper 29, April 1994, <https://apps.dtic.mil/sti/pdfs/ADA278559.pdf>, p. 67.

²²¹ For example, see Anthony H. Cordesman, *Lessons of the Gulf War: 1990-1991*, Center for Strategic and International Studies, book draft, revised July 2013, pp. 785-791, 799-804, 809-821.

²²² Taremi, "Beyond the axis of evil," p. 100.

²²³ Taremi, "Beyond the axis of evil," pp. 101-102; Chubin, "Iran's Strategic Aims and Constraints," p. 71.

²²⁴ Chubin, "Iran's Strategic Aims and Constraints," p. 71.

²²⁵ Daniel Byman, Shahram Chubin, Anoushiravan Ehteshami, and Jerrold Green, *Iran's Security Policy in the Post-Revolutionary Era* (Santa Monica: RAND Corporation, 2001), p. 12.

²²⁶ Michael Eisenstadt, "Russian Arms and Technology Transfers to Iran; Policy Challenges for the United States," Policy Analysis, Washington Institute for Near East Policy, March 1, 2001, <https://www.washingtoninstitute.org/policy-analysis/russian-arms-and-technology-transfers-iran-policy-challenges-united-states>.

²²⁷ Ariane M. Tabatabai, Nathan Chandler, Bryan Frederick, and Jennifer Kavanagh, *Iran's Military Interventions: Patterns, Drivers, and Signposts* (Santa Monica: RAND Corporation, 2021), p. 42.

²²⁸ Michael Klare, "The Rise and Fall of the 'Rogue Doctrine': The Pentagon's Quest for a Post-Cold War Military Strategy," *Middle East Report*, No. 208, Middle East Research and Information Project, Fall 1998, <https://merip.org/1998/09/the-rise-and-fall-of-the-rogue-doctrine/>.

²²⁹ U.S. Central Command, "1995 Posture Statement," p. 14.

According to Michael Eisenstadt, despite the benefits and brief “period of reduced threat” created by the 1991 Gulf War and fall of the Soviet Union, Iranian leaders believed that “in the long term [Iran] must be able to counter threats it could face from Iraq, the United States, and Israel.”²³⁰ Thus, the security landscape of the early 1990s presented a mix of threats and opportunities for Iran that served to reinforce its wartime lessons in shaping its acquisition, threat of use, and use of strategic weapons into the 1990s.

Iran’s New Pattern: 1988-1990s

The end of the war in 1988 into the 1990s witnessed the emergence of a new Iranian pattern for the acquisition, threat, and use of strategic weapons. This pattern was driven in large part by the hard lessons Iran learned from different elements of the Iran-Iraq War and reinforced by the events of 1991. Specifically, in Iran’s postwar era of national reconstruction (*baz-sazi / sazandegi*), it revamped both its military strategy and its acquisition of the strategic weapons as the critical means to support it. According to the Armed Forces General Staff (AFGS)—Iran’s highest military body—the war served as a “permanent guide” (*rahnama-ye hamishegi*) for Iran’s approach to deterrence and defense.²³¹

Despite the fact that most of Iran’s responses during the war were driven mainly by Iraqi actions, a number of elements of Iran’s new pattern for acquisition, threat, and use that emerged after the war were directed at the United States. Indeed, by this time, Iran had completed the transition from its pre-1979 status as a close U.S. ally to its new status as a U.S. adversary. Iranian officials stated concerns about the significant increase of the permanent U.S. military presence in the region.²³² Although they understood that this presence was mainly aimed at Iraq, they saw it as a “long-term threat to their national interests, territorial integrity and the security of their revolution because of the West’s rising fear of Iran and Islam.”²³³

In particular, Iranian leaders apparently were “wary of the deployment of American and other Western forces in the Gulf, suspecting that it was all just a ruse to cover a buildup for an American invasion of Iran.”²³⁴ Iran’s threat perceptions increased when, in 1990, U.S. President Bush stated that “maintaining a forward presence” in the Persian Gulf and other regions would remain a critical part of the U.S. defense strategy,²³⁵ and in 1993, the Clinton administration announced its “dual containment” policy aimed at countering both Iran and Iraq. U.S. officials highlighted concerns with Iran’s “threatening intentions,” including its efforts to acquire “offensive weapons” to dominate the

²³⁰ Michael Eisenstadt, “Iranian Military Power: Capabilities and Intentions,” Policy Papers, No. 42, Washington Institute for Near East Policy, 1996, pp. 4, 7.

²³¹ AFGS statement commemorating the 36th anniversary of the Iran-Iraq War, reported in “tadavom-e tolid-e samaneh-ha va tajhizat-e ‘defa-mehvar” [continuation of the production of ‘defense-oriented’ systems and equipment], *Dana Information Network*, 30 Shahrivar 1395 [September 20, 2016], <http://www.dana.ir/news/899790.html/share>.

²³² “Friday Sermon Assails U.S. Mideast Presence,” Tehran Voice of the Islamic Republic of Iran First Program Network, May 17, 1991, FBIS-NES-91-097, May 20, 1991; “Velayati on Middle East, Gulf, U.S. Policy,” Tehran IRIB Television Second Program Network, October 3, 1991, FBIS-NES-91-193, October 4, 1991; “Army Chief of Staff on Combating U.S. ‘Threat,’” Tehran ETTELA’AT, September 24, 1995, FBIS-NES-95-191, October 3, 1995.

²³³ Ahmed Hashim, “Iran’s Military Situation,” in Patrick Clawson, ed., *Iran’s Strategic Intentions and Capabilities*, McNair Paper No. 29 (Washington, D.C.: National Defense University Press, 1994), p. 170.

²³⁴ Pollack, *The Persian Puzzle*, p. 247.

²³⁵ President George H.W. Bush, “Remarks at the Aspen Institute Symposium in Aspen Colorado,” August 2, 1990, <https://www.presidency.ucsb.edu/documents/remarks-the-aspen-institute-symposium-aspen-colorado>.

Persian Gulf as well as WMD and ballistic missiles.²³⁶ Adding to Iran's threat perceptions, in 1995, the U.S. Navy created the Fifth Fleet in Bahrain to signal U.S. commitment to the region and enhance the U.S. military's ability to address the threats of Iraq and Iran and manage the U.S. Navy's ongoing operations in the region.²³⁷ Based on these factors, by the mid-1990s, Iranian military officials were conveying fears of U.S. preparations for "all-out war" against Iran.²³⁸ According to Kenneth Pollack, Iran now saw the United States as its main threat and "believed that Washington was attempting actively to weaken Iran, to prevent Iran from playing its 'natural' role as the hegemon of the Persian Gulf region, and even to create the pretext for military or other action against Iran to overthrow the government."²³⁹

This is not to say, however, that the threats Iran perceived from Iraq had disappeared. On the contrary, in Iran's eyes, Iraq remained a military power suspected of pursuing WMD—a suspicion borne out in the aftermath of the 1991 Gulf War. Even though Iraq's military was significantly weakened by the 1991 war, it "was still seen as the only regional country able to threaten Iran's territorial integrity."²⁴⁰ Despite the destruction of a significant part of Iraq's military power during the war, Iran was "determined never to allow the imbalance which existed between 1988 and 1990 to arise again."²⁴¹

In addition to the perceived threats posed by the United States and Iraq, however, other elements of Iran's post-war pattern for acquisition, threat, and use were directed toward Israel. These aspects did not arise directly from Iran's experience in the war, however, where—despite Iran's harsh ideological rhetoric toward Tel Aviv—Tehran had made efforts to avoid direct military confrontation and even procured critical arms and components from Israel.²⁴² On the contrary, they were a reflection of the emergence of the strategic rivalry between Iran and Israel in the 1990s. Indeed, in 1992, Israel's foreign minister labeled Iran as the "greatest threat and greatest problem in the Middle East"²⁴³ and by the mid-1990s, Israel was warning of Iranian nuclear weapons and BW

²³⁶ Martin Indyk, "The Clinton Administration's Approach to the Middle East," Washington Institute for Near East Policy, May 18, 1993, <https://www.washingtoninstitute.org/policy-analysis/clinton-administrations-approach-middle-east>.

²³⁷ Robert J. Schneller Jr., *Anchor of Resolve: A History of U.S. Naval Forces Central Command/Fifth Fleet* (Washington, D.C.: Naval Historical Center, 2007), pp. 40-41.

²³⁸ Eisenstadt, "Iranian Military Power," p. 5. For instance, in May 1995, IRGC commander Mohsen Rezaei stated that a military conflict with the United States was "inevitable" and that all evidence indicated that "the United States is preparing for an all-out war against Iran." ("Confrontation With U.S. 'Inevitable,'" Paris AFP, May 1, 1995, FBIS-NES-95-083, May 1, 1995.)

²³⁹ Pollack, *The Persian Puzzle*, p. 255.

²⁴⁰ Parsi, *Treacherous Alliance*, p. 143. For example, according to U.S. intelligence estimates, in 1994, Iraq's military had 400,000 ground force personnel and possessed 2,700 tanks, 4,300 armored vehicles, 2,100 pieces of artillery, 220 multiple rocket launchers, and 340 combat aircraft. (Director of Central Intelligence, "Saddam's Preparations for War: Intentions and Capabilities," National Intelligence Estimate, NIE 2002-17HC, October 2002, https://www.cia.gov/readingroom/docs/DOC_0001520654.pdf, p. 6.)

²⁴¹ Ahmed Hashim, "Iran's Military Situation," in Patrick Clawson, ed., *Iran's Strategic Intentions and Capabilities*, McNair Paper No. 29 (Washington, D.C.: National Defense University Press, 1994), p. 167.

²⁴² Parsi, *Treacherous Alliance*, pp. 102-109.

²⁴³ Scott Peterson, "Imminent Iran nuclear threat? A timeline of warnings since 1970," *Christian Science Monitor*, November 8, 2011, <https://www.csmonitor.com/World/Middle-East/2011/1108/Imminent-Iran-nuclear-threat-A-timeline-of-warnings-since-1979/Israel-paints-Iran-as-Enemy-No.-1-1992>.

efforts.²⁴⁴ With its 1981 air strike of Iraq’s nuclear program, Israel had shown its willingness and capability to use military force to prevent its rivals from acquiring nuclear weapons, and by the mid-1990s was threatening to strike Iran’s nuclear program.²⁴⁵ On this basis, as Iran entered the 1990s, Tehran saw the need to deter attacks not just by the United States and Iraq but also by Israel and to develop the capabilities to retaliate if necessary—all while countering the conventional superiority of the U.S. military.

Military Strategy

Correspondingly, and as described in detail below, Iran’s military strategy—that is, the threat and use of military force—now focused on deterring attack, especially through the threat of retaliation and relied on an asymmetric military strategy to take advantage of Iranian strengths and exploit enemy vulnerabilities.²⁴⁶ As stated in one report, “Iran’s lack of state allies, a plethora of well-resourced regional and international adversaries, and antiquated and sanctions-constrained armed forces compelled Tehran to develop a military doctrine that avoided direct or extended conflict with superior conventional powers.”²⁴⁷

Deterrence Strategy

In the area of deterrence, according to Iranian military officials, Iran transitioned after the war from the phase of defense (*defai*) to the phase of deterrence (*bazdarandegi*),²⁴⁸ where strengthening Iran’s deterrence power (*ghodrat-e bazdarandegi*) was one of Iran’s most significant postwar programs.²⁴⁹ According to Ariane Tabatabai, Iran now saw “deterrence as the single most important tool available to it.”²⁵⁰ IRGC officials have referred to Iran’s postwar phase of deterrence as “defensive deterrence” (*bazdarandegi-e defai*), which focused on increasing Iran’s readiness and capability to confront enemy threats.²⁵¹ IRGC commander Mohsen Rezaei stated that a key lesson of the war was

²⁴⁴ Chris Hedges, “Iran May Be Able to Build an Atomic Bomb in 5 Years, U.S. and Israeli Officials Fear,” *New York Times*, January 5, 1995, p. A10.; “Iran: Israelis Warn of Tehran’s Biological Arsenal,” London *The Sunday Times*, August 11, 1996, FBIS-NES-96-156, August 12, 1996.

²⁴⁵ Hedges, “Iran May Be Able to Build an Atomic Bomb in 5 Years, U.S. and Israeli Officials Fear.”

²⁴⁶ Iran also worked to develop its defense strategy in the more traditional areas of ground, naval, and air warfare, but these are not the focus of this study since they are not highly relevant to strategic weapons.

²⁴⁷ “Chapter One: Tehran’s strategic intent,” in International Institute for Strategic Studies, “Iran’s Networks of Influence in the Middle East,” November 2019, <https://www.iiss.org/publications/strategic-dossiers/iran-dossier/iran-19-03-ch-1-tehrans-strategic-intent>. According to the report, this doctrine was based on Soviet and U.S. systems, Iran’s revolutionary goals and experiences from the Iran-Iraq War, and lessons learned from the U.S. performance against Iraq in the 1991 Gulf War.

²⁴⁸ “sardar Fadavi: az marhaleh-ye bazdarandegi obur kardeh-im” [general Fadavi: we have passed the phase of deterrence], *Tasnim News*, 14 Mordad 1398 [August 5, 2019], <https://www.tasnimnews.com/fa/news/1398/05/14/2069495/>; “janeshin-e farmandeh-ye sepah: Iran tavan-e defa-e bazdarandegi va ghodrat eghdam ra tavaman darad” [deputy IRGC commander: Iran has the capability of defense, deterrence, and the power to act], *Islamic Republic News Agency*, 5 Mordad 1401 [July 27, 2022], <https://irna.ir/xjK6jf>.

²⁴⁹ Diary of Rafsanjani, 6 Farvardin 1375 [March 25, 1996], *Sardar-e Sazandegi* [construction general].

²⁵⁰ Tabatabai, *No Conquest, No Defeat*, p. 225.

²⁵¹ Speech by Hamid Reza Moghaddamfar, IRGC media adviser to the IRGC commander, “Doktrin-e defai-ye Iran az ‘defa-e sarf’ beh ‘afzayesh-e tahdid baraye dooshman’ taghir yafteh” [Iran’s defense doctrine changed from ‘cost-inducing defense’ to ‘increasing the threat to the enemy’], October 1, 2016, <https://www.tasnimnews.com/fa/news/1395/07/10/1198210>. According to IRGC officials, by 2016, Iran’s “defensive deterrence” had changed to “defensive and offensive deterrence” (*bazdarandegi-e defai va tahajomi*), with an emphasis on increasing Iran’s capability to threaten its enemies.

Iran's need to create deterrence by showing the enemy Iran's possible level of response (*sath-e vakonesh*).²⁵² In 1995, Rezai stated that Iran was taking the important step of transitioning from being able to triumph in war to being able to deter, shifting its main focus from creating the capability to counter the enemy to achieving a deterrent capability to prevent war.²⁵³ Similarly, postwar statements by Iranian political and military leaders into the 1990s regularly emphasized the central role of deterrence in Iran's military strategy.²⁵⁴

To show its resolve and capabilities to implement its retaliatory deterrence strategy, in the early-to-mid-1990s, Iran conducted retaliatory operations against non-state actors based in Iraq. These attacks were aimed at both retaliating for attacks on Iran and to deter future attacks. Between 1992 and 1994, Iran conducted air and ballistic missile strikes against targets in Iraq of the Iranian opposition group Mojahedin-e-Khalgh (MeK) and Kurdish opposition groups.²⁵⁵

Asymmetric Strategy

Iranian leaders viewed the importance of Iran creating an asymmetric strategy and accompanying capabilities to respond to its postwar perceived threats.²⁵⁶ If deterrence failed, Iran would implement an asymmetric strategy (*rahbord-e na-motegharen*) that relied heavily on its missile and naval capabilities to confront the United States in an approach driven by its war experience and also by watching the 1991 Gulf War.²⁵⁷ This asymmetric strategy was under the general framework of "all-dimensional defense" (*defa-e hameh-janebeh*), Iran's overall defense doctrine for confronting the full spectrum of threats to the country.²⁵⁸ Iranian officials learned from the Iran-Iraq War that Iran "could generate

²⁵² Dorudian, *Naghbi bar dars-ha va dastaverd-ha-ye jang* [going through war lessons and achievements], p. 42.

²⁵³ "IRGC Head Discusses National Defense, Nuclear Arms," Tehran RESALAT, September 24, 1995, FBIS-NES-95-193, October 5, 1995.

²⁵⁴ "IRGC Commander on Deterrence as Military Priority," Tehran Voice of the Islamic Republic of Iran First Program Network in Persian, September 25, 1995, FBIS-NES-95-185, September 25, 1995.

²⁵⁵ Shahram Chubin, *Iran's National Security Policy: Capabilities, Intentions, and Impact* (Washington, D.C.: Carnegie Endowment for International Peace, 1994), pp. 15-16; United Nations Security Council, "Letter Dated 25 May 1993 From the Permanent Representative of the Islamic Republic of Iran to the United Nations Addressed to the Secretary-General," S/25843, May 26, 1993, <https://digitallibrary.un.org/record/167123?ln=en>; United Nations Security Council, "Letter Dated 9 November 1994 From the Charge D'Affaires A.I. of the Permanent Mission of the Islamic Republic of Iran to the United Nations Addressed to the Secretary-General," S/1994/1273, November 10, 1994,

https://digitallibrary.un.org/record/165545?ln=zh_CN; "Official: Bombing in Iraq 'Deterrent Measure,'" Tehran IRNA, November 10, 1994, FBIS-NES-94-219, November 14, 1994; Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD, with Addendums (Duelfer Report), Volume 1, September 2004, p. 29; Amin Tarzi and Darby Parliament, "Missile Messages: Iran Strikes MKO Bases in Iraq," *Nonproliferation Review*, Summer 2001, pp. 125-133.

²⁵⁶ See, for example: Spencer Lawrence French, "Embracing Asymmetry: Assessing Iranian National Security Strategy, 1983-1987," *Joint Force Quarterly*, 101 (2021), pp. 69-77; Michael Eisenstadt, "Operating in the Gray Zone: Countering Iran's Asymmetric War of War," Washington Institute for Near East Policy, January 2020, p. 7.

²⁵⁷ This approach was reflected in 1987 by IRGC commander Mohsen Rezai, stating that the IRGC identified the weak spots of the Americans and would attack them at the weakest point. ("Guards Corps Commander Marks War Week," Tehran Domestic Service, September 22, 1987, FBIS-NES-87-186, September 25, 1987.)

²⁵⁸ "'defa-e hameh-janebeh' dar barabar-e tahdidat-e hameh-janebeh," ["all-dimensional defense" against all-dimensional threats], official website of Iran's Passive Defense Organization (*sazman-e padafand-e gheyre-ameh*), 16 Mordad 1397 [August 7, 2018], <https://paydarymelli.ir/fa/news/37235/>. This term was used by Ayatollah Khomeini in September 1988 in a post-war speech to IRGC officials, where he emphasized the critical importance of reconstructing Iran's military forces in the framework of a strategy of "all-dimensional defense" (*defa-e hameh-janebeh*). ("zarurat-e tarsim-e estratezhi-e defa-e hameh-janebeh" [necessity of drawing an all-dimensional defense strategy], IRNA, 1 Ordibehesht 1392 [April 21, 2013], <https://www.irna.ir/news/80622719/>.)

strategic advantage through the skillful synchronization of asymmetric means,”²⁵⁹ and that its “asymmetrical operations had proven successful.”²⁶⁰

Iranian military leaders reportedly adopted this asymmetric strategy in 1990-1991. It featured plans for retaliatory actions that would include both overt military actions and those that would rely on plausible deniability.²⁶¹ According to Kenneth Pollack, “Iran seems to have been the first country after the [1991] Gulf War to craft an asymmetric strategy against the United States. Consequently, one of the main goals of its own new, aggressive foreign policy was that it wanted to try to drive the United States out of the Persian Gulf region without taking the kind of action that would prompt America to replay Desert Storm against it.”²⁶² In executing this asymmetric strategy, Iran would rely mostly on the IRGC, which has been called Iran’s “primary asymmetric warfighter.”²⁶³

Military Exercises

After the war, both the IRGC and Artesh conducted regular military exercises—including training and tests of missiles and rockets—to improve the readiness of the military and enhance Iran’s deterrence and asymmetric capabilities.²⁶⁴ In addition to their role in improving Iran’s military capabilities and readiness, according to Iranian military officials, military exercises also served as important “deterrent measures” in supporting Iran’s military strategy and its central element of deterrence.²⁶⁵

Weapons Acquisition

Driven by its new deterrence and asymmetric strategies, Iran’s new pattern of acquisition for strategic weapons thus focused on creating the necessary means (capabilities) to support retaliatory deterrence and asymmetric warfare. According to David Crist, Iranian officials recognized that “Iran needed to upgrade its technology and missile inventory to better execute its asymmetrical tactics against the U.S. military,” based on the lessons of the Iran-Iraq War and Gulf War.²⁶⁶ To acquire these capabilities, Iran pursued two parallel tracks of domestic development and foreign procurement for weapon systems. Of these two tracks, Iran emphasized domestic development and sought to increase its level of self-sufficiency, even though the cycle of acquisition from development to production to deployment could be long.

²⁵⁹ French, “Embracing Asymmetry,” p. 76.

²⁶⁰ Crist, *The Twilight War*, pp. 396-397; Crist, “Gulf of Conflict,” p. 21.

²⁶¹ Crist, “Gulf of Conflict,” pp. 23-24.

²⁶² Pollack, *The Persian Puzzle*, p. 255.

²⁶³ Farzin Nadimi, “Iran’s Evolving Approach to Asymmetric Naval Warfare: Strategy and Capabilities in the Persian Gulf,” Washington Institute for Near East Policy, April 2020, p. 1.

²⁶⁴ “Official Announces Program for Armed Forces,” Tehran Domestic Service, June 23, 1989, FBIS-NES-89-120, June 23, 1989; “Silkworm Missiles Tested During Naval Maneuvers,” Tehran Domestic Service, December 13, 1989, FBIS-NES-89-238, December 13, 1989; “New Rocket Fuel Tested in Missile Maneuvers,” Tehran Voice of the Islamic Republic of Iran First Program Network, April 29, 1994, FBIS-NES-94-084, May 2, 1994; “IRGC Maneuvers ‘Successfully’ End in Persian Gulf,” Tehran IRNA, December 26, 1995, FBIS-NES-95-250, December 29, 1995.

²⁶⁵ “IRGC Commander on Deterrence as Military Priority,” Tehran Voice of the Islamic Republic of Iran First Program Network, September 25, 1995, FBIS-NES-95-185, September 25, 1995; “Iran: Admiral on Country’s ‘Major Part’ in Gulf Security,” Tehran IRNA, February 7, 1996, FBIS-NES-96-028, February 9, 1996.

²⁶⁶ Crist, “Gulf of Conflict,” p. 21.

In parallel, Iran would pursue the purchase of advanced foreign systems to increase its military capabilities. In addition, as part of its foreign procurement track, Iran would also seek to enhance its self-sufficiency through technology transfer or license production, and when that was not possible, engage in reverse engineering of the foreign systems. Thus, through both domestic development and foreign procurement, Iran would become the “owner” (*sabeb*) of the designs and technologies for key weapon systems. Doing so would enable Iran to produce domestically and maintain those weapons, to develop “families” of systems including improved variants of each weapon system, and later, to transfer the production technology for those weapons to its state and non-state allies and partners.

Iran’s wartime efforts had established the initial technical and organizational foundations for its postwar efforts to purchase and develop various strategic systems. These postwar acquisition efforts were implemented by a reorganized defense industry—managed by Iran’s new Ministry of Defense and Armed Forces Logistics (MODAFL). This ministry had been created in 1989 by merging the former defense and IRGC ministries. Consistent with the primary role of the IRGC in executing Iran’s new deterrence and asymmetric strategies in the 1990s, the IRGC was favored over the Artesh. It correspondingly enjoyed the majority of Iran’s acquisition efforts—both domestic development and foreign purchases—and funding.²⁶⁷

Importantly for the success of these efforts, Iranian organizations had gained experience during the war in the clandestine procurement of weapons and technologies. This experience extended to countering foreign embargoes, sanctions, export controls, and pressure. In particular, according to Shahram Chubin, Tehran had become versed in “establishing networks of purchasing agents, creating cutouts and front companies, doctoring end-use papers, in bribery, transshipments and the art of false documentation.”²⁶⁸ This new skillset would play a key role in supporting both the domestic and foreign tracks of Iranian strategic weapons acquisition into the future, especially in the procurement of critical components, materials, and equipment.

Ballistic and Cruise Missiles

Iran’s experience with the War of the Cities and the Tanker War solidified its view of the importance of missile capabilities for deterrence and warfighting. Reflecting this view, IRGC official Gholam Ali Rashid stated that a key lesson of the war was that Iran needed offensive power (*ghodrat-e tahajomi*) in the areas of ballistic and cruise missiles.²⁶⁹ Thus, after the war, Iran obtained the capability to produce domestically the 300-km-range Scud B and 500-km-range Scud C ballistic missiles—what it would call the Shahab-1 and Shahab-2—through technology transfer from North Korea.²⁷⁰ In the early 1990s, Iran also received the 150-km-range B610 ballistic missile from China (what it would

²⁶⁸ Chubin, *Iran’s National Security Policy*, p. 20.

²⁶⁹ Dorudian, *Naghbi bar dars-ba va dastaverd-ba-ye jang* [going through war lessons and achievements], p. 128.

²⁷⁰ The technology transfer was implemented in three phases: Iran first assembled missiles from semi-knockdown (SKD) kits provided by North Korea, then assembled them from complete knockdown (CKD) kits, and finally Iran achieved the capability to independently produce the missiles. (Diary of Rafsanjani, 30 Bahman 1369 [February 19, 1991], *Etedal va Piruszi* [moderation and victory].) In 1995, the CIA claimed that Iran possessed Scud B and Scud C ballistic missiles purchased from North Korea. (U.S. Central Intelligence Agency, Nonproliferation Center, “The Weapons Proliferation Threat,” March 1, 1995, p. 11.) According to IRGC missile official Amir Ali Hajizadeh, Iran was first able to mass produce the Shahab-1 (Scud B) in 1372 (March 1993–March 1994). (Iranian “Deterrent” (*bazdarandeh*) documentary, part 1, <https://www.youtube.com/watch?v=fsUf2Vak4y4>.)

call the Tondar-69), along with equipment and training,²⁷¹ but reportedly was unsuccessful in attempts to purchase the 300-km-range M-11 and 600-km-range M-9 ballistic missiles from China.²⁷²

With the goal of being able to strike Israel from Iranian territory—one that apparently dated back to 1981²⁷³—Iran also pursued the purchase of the North Korean 1,300-km-range Nodong (Hwasong-7), which Iranian officials called the Scud E.²⁷⁴ After foreign pressure reportedly scuttled its effort to purchase 150 such missiles,²⁷⁵ Iran began working to reverse engineer it in order to develop its own version.²⁷⁶ By the end of the decade, Iran would test this missile under its Iranian name, the Shahab-3.²⁷⁷ In parallel to its main focus on liquid-propellant ballistic missiles—including the Shahab-1, Shahab-2, and Shahab-3—Iran also began initial efforts to develop solid-propellant ballistic missiles with increased mobility and accuracy. These efforts included the development of 250-to-350-km-range guided versions of the Mojteme-family unguided rockets²⁷⁸ and a project to modify the unguided Zelzal rocket to develop the Fateh-110 ballistic missile, including the use of the guidance system from the Tondar-69 missile.²⁷⁹

²⁷¹ “sardar Musavi: sarasar-e sarzamin-e eshghali dar tir-ras-e mushak-ha-ye Irani moghavemat ast” [general Musavi: the entire occupied territory is in the crosshairs of Iranian missiles], *Nasim News*, 1 Aban 1393 [October 23, 2014], <https://www.nasim.news/fa/tiny/news-948118>; IRGC missile bright path book, p. 466; Bermudez, “Iran’s Missile Development,” p. 64.

²⁷² Bates Gill, “Chinese Arms Exports to Iran,” *China Report*, Vol. 34, No. 3-4 (August 1998), pp. 363-365; Director of Central Intelligence, “Prospects for Special Weapons Proliferation and Control,” National Intelligence Estimate, NIE 5-91C, Volume II-Annexes, July 1991, available via the Wilson Center Digital Archive, <https://digitalarchive.wilsoncenter.org/document/national-intelligence-estimate-nie-5-91c-prospects-special-weapons-proliferation-and>.

²⁷³ Iran’s interest in a missile capable of striking Israel from Iranian territory reportedly dates back to 1981. According to Iran’s former defense minister Akbar Torkan, after Israel attacked Iraq’s Osiraq nuclear reactor in 1981, Iranian officials discussed the need to acquire a capability to retaliate against such an attack, and they defined the need for a missile with a 1,250-km-range. (Torkan, interviewed in Deterrent Documentary (*mostanad bazdarandel*), Part 1, <https://t.co/wBOR6jh21T>.) Also, according to IRGC aerospace official Amir Ali Hajizadeh, IRGC missile official Hassan Tehrani Moghadam at an unspecified time wanted a missile with a 1,150 km range to target Israel. (Iranian TV documentary about Hassan Tehrani Moghadam, <https://www.youtube.com/watch?v=w-LkkVw5O14>; https://www.youtube.com/watch?v=-uhpcMNj_I8.)

²⁷⁴ In 1992, Iran’s Supreme Council for National Security (SCNS)—the country’s highest-level security policymaking body—approved the purchase of a long-range missile from North Korea, probably the Nodong (Scud E). (Diary of Rafsanjani, 19 Bahman 1370 [February 8, 1992], *Sazandegi va Shokufai* [construction and prosperity].)

²⁷⁵ “Shahab-3,” CSIS Missile Defense Project, updated July 31, 2021, <https://missilethreat.csis.org/missile/shahab-3/>.

²⁷⁶ By November 1993, Iran had a “Scud E” missile project, in addition to the Scud B and Scud C projects, suggesting Iran had obtained—or planned to obtain—No Dong missiles from North Korea. (Diary of Rafsanjani, 27 Aban 1372 [November 18, 1993], *Salabat va Sazandegi* [toughness and construction].) As of November 1995, Iran was manufacturing parts for the Scud E missile, and in 1998 was conducting testing of the Scud E rocket engine. (Diary of Rafsanjani, 10 Aban 1374 [November 1, 1995], *Mard-e Bohran-ha* [man of crises]; Diary of Rafsanjani, 16 Dey 1376 [January 6, 1998], *Sardar-e Sazandegi* [construction general].) See also: “U.S. Said To Alert on DPRK-Iran Missile Deal,” Jerusalem Qol Yisra’el, August 3, 1994, FBIS-NES-94-149, August 3, 1994; “Woolsey Visit, DPRK-Iran Missile Threat Viewed,” Tel Aviv Ha’aretz, December 22, 1994, FBIS-NES-94-247, December 23, 1994.

²⁷⁷ Uzi Rubin, “The Global Reach of Iran’s Ballistic Missiles,” Institute for National Security Studies, 2006, <https://www.jstor.org/stable/pdf/resrep08977.6.pdf>, pp. 17-18.

²⁷⁸ Diary of Rafsanjani, *Ronegh va Sazandegi* [prosperity and construction], 15 Dey 1371 [January 5, 1993] (350-km-range guided missile); Diary of Rafsanjani, 7 Shahrivar 1373 [August 29, 1994], *Sabr va Piruzi* [patience and victory] (250-km-range guided missile).

²⁷⁹ Saleminejad, *Rab-e roshan-e setaregan* [bright path of the stars], pp. 22-23; “mushak-e balestik-e Fateh 110” [Fateh-110 ballistic missile], *Iran Press*, 18 Bahman 1401 [February 7, 2023], <https://farsi.iranpress.com/iran-i221578-%D9%85%D9%88%D8%B4%DA%A9-%D8%A8%D8%A7%D9%84%D8%B3%D8%AA%DB%8C%DA%A9-%D9%81%D8%A7%D8%AA%D8%AD-110>.

Iran also learned an important quantitative lesson from the war relating to ballistic missiles and how to use them to create retaliatory deterrence and control escalation. Specifically, Tehran found that it was not enough to have the capability to launch missiles—one had to be able to launch them in large numbers. During the war, Iraq was able to fire salvos of missiles against Iran, while Iran could only fire one missile per day—a situation that, when combined with Iraq’s air superiority, “put Iraq in a position of control over the escalation of the missile and air wars.”²⁸⁰ Thus, Iran likely saw the importance of acquiring and stockpiling large numbers of missiles to prepare for various future contingencies—a point it may have also applied to its other types of missiles and rockets, as well.²⁸¹

As a key element to support its asymmetric strategy, Iran also expanded its development and purchase of ASCMs.²⁸² During the 1990s, it worked to develop its own longer-range version of the HY-2 Silkworm it had purchased from China²⁸³—replacing its rocket motor with a turbojet engine.²⁸⁴ It also purchased the more advanced Chinese C-801 and C-802 ASCMs²⁸⁵ and conducted a joint project with China to domestically produce the C-802.²⁸⁶ Further, Iran worked to develop its own 120-km-range version of the C-802 called the Noor.²⁸⁷

In addition to Iran’s 1987 wartime interests (cited above) in using ASCMs in a land-attack role,²⁸⁸ the 1991 Gulf War may have served to strengthen Iran’s interests in land-attack cruise missiles (LACMs), as “Iran was reportedly impressed by the performance of U.S. Tomahawk cruise missiles during the Gulf War.”²⁸⁹ We would not see concrete Iranian LACM efforts until the next decade, however, when Iran reportedly acquired six Kh-55 LACMs illegally from Ukraine in 2001,²⁹⁰ which it used to develop its own family of LACMs in the following decades.²⁹¹

Long-Range Artillery Rockets

As another element of its retaliatory deterrence and asymmetric strategies, Iran also continued its development of long-range artillery rockets based on the foundation created by its wartime efforts.

²⁸⁰ Chubin, *Iran’s National Security Policy*, p. 21.

²⁸¹ Chubin, *Iran’s National Security Policy*, p. 23.

²⁸² Fariborz Haghshenass, “Iran’s Asymmetric Naval Warfare,” *Policy Focus 87*, Washington Institute for Near East Policy, September 2008, pp. 6, 15-16.

²⁸³ “‘mushak-e ra’ad,’ shamshir-e ra’ad-asa-ye niru-ha-ye mosalah-e Iran dar khali-j-e fars” [‘thunder missile,’ the lightning sword of the Iranian armed forces in the Persian Gulf], *Young Journalists’ Club (YJC)*, 27 Shahrivar 1398 [September 18, 2019], <https://www.yjc.news/fa/news/7073835/>.

²⁸⁴ “‘dast-e boland-e Iran ba ‘kruz’ be ‘diego garcia’ rasid” [Iran’s long hand with ‘cruise’ reached ‘Diego Garcia’], *Mashregh News*, 20 Shahrivar 1391 [September 10, 2012], <https://www.mashreghnews.ir/news/149354/>.

²⁸⁵ U.S. Department of Defense, “Unclassified Report on Military Power of Iran,” April 2010, p. 12.

²⁸⁶ “‘mushak-e C802 perozheh-ye moshtarak-e Iran va Chin bud / nagofteh-ha-i az sakht-e navshekan va mushak dar niru-ye daryai-e artesh” [C802 missile was a joint project between Iran and China / unspoken construction of destroyers and missiles in the IRIN], *Mashregh News*, 21 Khordad 1398 [June 11, 2019], <https://www.mashreghnews.ir/news/965897/>.

²⁸⁷ “‘mushak-e zed-e keshti-e ‘noor,’ aghazgar-e sakht-e mushak-ha-ye zed-e keshti dar Iran” [‘Noor’ anti-ship missile, the initiator of anti-ship missiles in Iran], *Mashregh News*, 6 Azar 1399 [November 26, 2020], [mshregh.ir/1148606](https://www.mshregh.ir/1148606). Iran reportedly produced the Noor “under license” with Chinese assistance. (Crist, “Gulf of Conflict,” p. 21.)

²⁸⁸ Diary of Rafsanjani, 15 Bahman 1365 [February 4, 1987], *Onj-e Defa* [peak of defense].

²⁸⁹ Eisenstadt, “Iranian Military Power,” p. 31.

²⁹⁰ Paul Kerr, “Ukraine Admits Missile Transfers,” *Arms Control Today*, Vol. 35, No. 4 (May 2005), p. 41.

²⁹¹ “gozash-e tahlili: mushak-e kruz-e hoveyzeh: ‘dast-e bezan-e jadid’ baraye sepah-e pasdaran” [analysis report: hoveyzeh cruise missile: ‘new striking hand’ for the IRGC], *Tasnim News*, 21 Bahman 1397 [February 10, 2019], <https://www.tasnimnews.com/fa/news/1397/11/21/1938156/>.

These projects included the development and testing of rockets with ever-increasing ranges such as the Nazeat,²⁹² Zelzal,²⁹³ and Mojteme²⁹⁴ families of rockets. Some of these would achieve ranges of more than 200 km,²⁹⁵ which were considered “strategic” ranges in the context of Iran’s geographic location vis-à-vis Iraqi targets as well as U.S. military forces in Kuwait. Also, as stated above, two of these rockets—the Zelzal and Mojteme²⁹⁶—would provide the basis for Iran’s development of ballistic missiles. Iran also worked to develop shorter-range rockets that it has categorized as “medium-range,” including the Arash and Fajr families of rockets.²⁹⁷

Unmanned Aerial Vehicles

In the 1990s, Iran continued to develop UAVs, including the Mohajer and Ababil families of systems,²⁹⁸ building on the wartime origins of its UAV efforts. Although the results were not yet a strategic weapon, Iran’s continuing work slowly expanded the technical and organizational foundations of Iran’s UAV development efforts that would later result in the long-range armed and suicide UAVs that Iran would deploy in the decades to come.²⁹⁹

Emphasis on Self-Sufficiency

With all of its missiles and rockets (and UAVs)—along with its other weapons efforts—Iran’s new pattern of acquisition incorporated the longer-term strategic goal of maximizing self-sufficiency (*kehod-kafa’i*) and self-reliance (*kehod-ete kai*) and decreasing reliance on foreign technology in their production and supporting defense industries. Indeed, Iranian military officials regularly cited³⁰⁰ self-sufficiency as a strategic goal during and after the war, and Iran’s constitution lays down the goal of achieving self-sufficiency in the “military” domain.³⁰¹ As concrete measures toward this goal, during the war both the IRGC and Artesh created “self-sufficiency jahad” units in their services to provide

²⁹² “Iranian Rockets Head SECARM Display,” *Jane’s Defence Weekly*, February 11, 1989.

²⁹³ Iranian national award for Zelzal-2 rocket development project, 7th Kharazmi Festival, 19 Bahman 1372 [February 8, 1994], <http://kia-kahroba.ir/laureates/sites/default/files/covers/7-%20%D9%85%D9%88%D8%B4%DA%A9%20%D8%B2%D9%84%D8%B2%D8%A7%D9%84%202.jpg>.

²⁹⁴ Iranian national award for Mojteme-5 145-km-range rocket, 3rd Kharazmi Festival, 1368 [March 1989-March 1990], <http://kia-kahroba.ir/laureates/sites/default/files/covers/3-%20%D9%85%D8%AC%D8%AA%D9%85%D8%B9%205.pdf>.

²⁹⁵ “Defense Industries Manufacture New Missile,” Tehran IRNA, April 17, 1989, FBIS-NES-89-073, April 18, 1989.

²⁹⁶ The last known version of the Mojteme—developed by the Ministry of Construction Jihad—was the 145-km-range Mojteme-6. (Ministry of Agricultural Jihad publication, Number 42, Shahrivar 1400 [August-September 2021], https://navideshahed.com/files/fa/news/1400/6/21/713646_602.pdf, p. 32.) The Mojteme apparently never reached the stage of production and deployment, suggesting it was either cancelled or integrated into MODAFL’s efforts at solid-propellant ballistic missile development, which resulted in the Fateh-110 and follow-on missiles.

²⁹⁷ “mushak-ha-i keh ghalb-e doshman ra neshaneh gereftah-and” [missiles aimed at the heart of the enemy], *Islamic Republic News Agency (IRNA)*, 9 Mordad 1392 [July 31, 2013], <https://www.irna.ir/news/80756511/>.

²⁹⁸ “aseman, azmin va darya zir-e chatr-e amaliyati-e pahpad-ha-ye artesh-e jomhuri-e eslami-e Iran,” [sky, land and sea under the operational umbrella of Islamic Republic Artesh UAVs], *Young Journalists’ Club (YJC)*, 9 Farvardin 1400 [March 29, 2021], <https://www.yjc.news/fa/news/7698692/>; “seyr-e ertegha-ye tavan-e pahpadi-e Iran: az ‘talash’ ta ‘shahed” [route of upgrade of Iran’s UAV capability: from ‘talash’ to ‘shahed’], *Defa Press*, 7 Bahman 1400 [January 27, 2022], <https://defapress.ir/fa/news/502701/>.

²⁹⁹ Farzin Nadimi, “Iran’s Game of Drones,” Washington Institute for Near East Policy, PolicyWatch 3585, March 2, 2022, <https://www.washingtoninstitute.org/policy-analysis/irans-game-drones>.

³⁰⁰ “Khomeyni Calls For Unity, Self-Sufficiency,” Tehran Domestic Service, January 19, 1981, FBIS-SAS-81-013, January 21, 1981.

³⁰¹ “Iran (Islamic Republic of)’s Constitution of 1979 with Amendments through 1989,” Comparative Constitutions Project, https://www.constituteproject.org/constitution/Iran_1989.pdf?lang=en.

support in maintenance, repair, and the manufacture of parts,³⁰² and the industrial organizations under both the IRGC Ministry and Defense Ministry were tasked with increasing Iran's self-sufficiency in weapons development and production.³⁰³ Statements by Iranian officials repeat a common refrain: Before the revolution, Iran was dependent on foreign countries for its weapons, and during the war these countries not only refused to supply weapons but also imposed arms embargoes and sanctions on Iran. Thus, Iran learned the lesson that it must maximize its self-sufficiency in meeting its weapons requirements and not rely solely on foreign countries.³⁰⁴

Nuclear Weapons

With the end of the war, Iran ramped up its nuclear program both in advancing its nuclear fuel cycle capabilities and starting a military dimension of the program, reportedly with the longer-term goal of creating a nuclear deterrent.³⁰⁵ Iran's efforts, according to various experts, were driven by factors such as the need to deter attack by the United States and Israel, to counter the lingering threat from Iraq—including its suspected nuclear weapons program³⁰⁶—and to increase Iran's prestige and influence.³⁰⁷ Iran's postwar efforts in this regard included seeking foreign assistance from China and Russia in sensitive nuclear fuel cycle technologies, such as uranium enrichment and plutonium production and reprocessing, and acquiring centrifuge components and drawings from the A.Q. Khan network.³⁰⁸ According to David Patrikarakos, "Iran made steady progress in its covert pursuit of the full nuclear fuel cycle throughout the early to mid-1990s,"³⁰⁹ and in 1989, Iran started a parallel, undeclared military effort likely intended to develop nuclear weapons.³¹⁰ Thus, by the mid-1990s, Iran reportedly had both the intentions and emerging capabilities to develop nuclear weapons—for example, in 1995, the CIA claimed that Iran was "aggressively pursuing a nuclear

³⁰² "jahad-e khod-kafa'i-e artesh dar doran-e defa-e moghadas dar yek negah" [creation of artesh self-sufficiency jahad in time of holy war in one view], Iranian Students' News Agency (ISNA), 28 Bahman 1399 [February 16, 2021], isna.ir/xdHH7F.

³⁰³ "IRGC Minister on Submarines, Military Plans," Tehran Domestic Service, August 27, 1987, FBIS-NES-87-168, August 31, 1987; "Defense Industries Director on Self-Sufficiency," Tehran Domestic Service, September 25, 1984, FBIS-SAS-84-188, September 26, 1984.

³⁰⁴ "Defense Industries Director on Self-Sufficiency," Tehran Domestic Service, September 25, 1984, FBIS-SAS-84-188, September 26, 1984; "Military Chiefs Interviewed on Capabilities, Weapons," Tehran Voice of the Islamic Republic of Iran First Program Network, September 21, 1995, FBIS-NES-95-186, September 26, 1995. Indeed, the IRGC Ministry named its unit the Department of Self-Sufficiency Industries (*mo'avenat-e sanaye khod-kafa'i*). ("zendegi-nameh-ye 'Mostafa Mohammad Najjar,' fard-e pishnehadi baraye tasadi-e vezarat-e 'defa'" [biography of Mostafa Mohammad Najjar, candidate for the defense ministry], *Islamic Republic News Agency (IRNA)*, 23 Mordad 1384 [August 14, 2005], <https://irna.ir/x36Q7R>.)

³⁰⁵ According to a 2007 National Intelligence Estimate by the U.S. intelligence community, Iran made a "considerable effort" since at least the late 1980s to develop nuclear weapons. (U.S. Office of the Director of National Intelligence, National Intelligence Council, "Iran: Nuclear Intentions and Capabilities," National Intelligence Estimate, November 2007, https://www.dni.gov/files/documents/Newsroom/Reports%20and%20Pubs/20071203_release.pdf.)

³⁰⁶ According to David Crist, "the uncovering of Iraq's clandestine nuclear weapons program after Desert Storm" was a key factor motivating Iran's program. (Crist, *The Twilight War*, p. 393.)

³⁰⁷ Pollack, *The Persian Puzzle*, p. 259; Eisenstadt, "Iran's Nuclear Hedging Strategy," p. 13.

³⁰⁸ Patrikarakos, *Nuclear Iran*, pp. 135-136, 140, 157-158.

³⁰⁹ Patrikarakos, *Nuclear Iran*, p. 157.

³¹⁰ David Albright, Paul Brannan, and Andrea Stricker, "The Physics Research Center and Iran's Parallel Military Nuclear Program," Institute for Science and International Security, February 23, 2012, https://isis-online.org/uploads/isis-reports/documents/PHRC_report_23February2012.pdf.

weapons capability”³¹¹—and in the late 1990s, Iran would transform this effort into a dedicated nuclear weapons program, the AMAD Plan.³¹²

Chemical and Biological Weapons

In contrast to the relatively clear picture of Iran’s postwar nuclear intentions and activities, the picture of Iran’s postwar CBW intentions, programs, and capabilities is difficult to decipher. In 1988, Rafsanjani—who was the deputy commander-in-chief of Iran’s armed forces and would become Iran’s president the following year—publicly stated that CBW were “very decisive” weapons and that Iran should “fully equip” itself in both their offensive and defensive use.³¹³ A couple weeks later, Rafsanjani added that CBW are “poor man’s atomic bombs” and can easily be produced, and that Iran, for its defense, should consider adding CBW to its arsenal.³¹⁴ Rafsanjani emphasized that although the use of CBW is inhumane, the Iran-Iraq War taught Iran that “international laws are only drops of ink on paper.”

On the basis of these Iranian statements and reports of Iranian activities, U.S. and other Western sources during the late 1980s and 1990s stated concerns about Iranian CBW activities, especially CW, which was viewed by some experts as a key element of Iran’s “strategic deterrent.”³¹⁵ Indeed, according to Gregory Giles, after the war, Iran sought a self-sufficient CW capability in large part to “offset the conventional superiority of the U.S. forces in the Persian Gulf.”³¹⁶ Iran was suspected of pursuing multiple tracks regarding CW simultaneously, including a public, declared policy that promoted CW disarmament, efforts to develop and deploy CW defense capabilities, and a secret policy to develop offensive capabilities for deterrence and retaliation in kind.³¹⁷ In 1989, the U.S. Director for Central Intelligence claimed that Iran was producing CW agents—including the blister agent mustard, blood agents, and nerve agents—the munitions to deliver them, including bombs and artillery, and was “continuing to expand its chemical warfare program.”³¹⁸

³¹¹ U.S. Central Intelligence Agency, Nonproliferation Center, “The Weapons Proliferation Threat,” March 1, 1995, p. 12. According to Michael Eisenstadt, in the early to mid-1990s, the U.S., German, Israeli, and Russian intelligence services were “unanimous in their belief” that Iran was attempting to acquire nuclear weapons. (Eisenstadt, “Iranian Military Power,” p. 9.)

³¹² David Albright with Sarah Burkhard and the Good ISIS team, *Iran’s Perilous Pursuit of Nuclear Weapons*, Institute for Science and International Security, May 2021; International Atomic Energy Agency, “Implementation of the NPT Safeguards Agreement and the relevant provisions of the Security Council resolutions in the Islamic Republic of Iran,” GOV/2011/65, November 8, 2011. Also, in 1998, the CIA claimed that “Tehran continues to seek fissile material and technology for weapons development and has set up an elaborate system of military and civilian organizations to support this effort.” (U.S. Central Intelligence Agency, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January Through 30 June 1998,” p. 4.)

³¹³ “Hashemi-Rafsanjani Speaks on Future of IRGC,” Tehran Domestic Service, October 6, 1988, FBIS-NES-88-195, October 7, 1988.

³¹⁴ “Majlis Speaker on Acquiring Chemical Weapons,” IRNA, October 19, 1988, FBIS-NES-88-202, October 19, 1988.

³¹⁵ Eisenstadt, “Iranian Military Power,” p. 27.

³¹⁶ Giles, “The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons,” p. 80.

³¹⁷ Giles, “The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons,” pp. 84-85; Ahmed Hashim, “Iran’s Military Situation,” in Patrick Clawson, ed., *Iran’s Strategic Intentions and Capabilities*, McNair Paper No. 29 (Washington, D.C.: National Defense University Press, 1994), pp. 211-212.

³¹⁸ “DCI Testimony on Chemical and Biological Weapons Before the Senate Committee on Governmental Affairs and its Subcommittee, the Permanent Subcommittee on Investigations,” February 9, 1989, <https://www.cia.gov/readingroom/docs/CIA-RDP90M01243R001400170002-7.pdf>.

Concerns continued after Iran signed the Chemical Weapons Convention (CWC) in 1993 (it acceded to the convention in 1997), repeating similar claims from before. For example, in 1995, the CIA claimed that, “Iran has continued to upgrade and expand its chemical weapons production infrastructure and chemical munitions arsenal.”³¹⁹ Iran’s reported foreign procurement activities formed part of the basis for Western concerns. For instance, according to Western reports, during the 1990s Iranian military organizations sought precursor chemicals and chemical production equipment from foreign suppliers³²⁰—which the CIA claimed was part of an effort to “create a more advanced and self-sufficient CW infrastructure.”³²¹

A 1995 diary entry of Rafsanjani—who was now Iran’s president—seemed to partially corroborate these claims: in it, he described his May 1995 visit to a Defense Ministry NBC defense center in Karaj, where he viewed both “offensive” and “defensive” equipment as well as pilot production facilities and remarked that it was fortunate that the industry had been set up for dual purposes (*domanzureh*) to be effective in peacetime.³²² When Iran formally acceded to the CWC in 1997, it disclosed its previous CW efforts, admitting that it had produced 24 metric tons of CW agents during the war, but claimed it had destroyed them by 1992.³²³ In 1997, President Rafsanjani stated that Iran would not pursue CBW.³²⁴

Similar to CW concerns, suspicions about Iran’s BW intentions and capabilities continued after the war into the 1990s, albeit with much less specificity than those regarding CW. During this period, Iran reportedly continued its efforts to develop BW defense capabilities to protect its military forces,³²⁵ but Western sources claimed Iran pursued offensive BW capabilities as well. A 1991 U.S. National Intelligence Estimate (NIE) stated, for instance, that “Tehran has intensified its BW program since the end of the Iran-Iraq war and is in the late stages of R&D of biological agents, taking full advantage of imported dual-use technology.”³²⁶ In 1995, the CIA claimed that Iran’s BW program was “in the late stages of research and development.”³²⁷

Despite repeated concerns by Western sources about Iranian CBW intentions, activities, and capabilities, it is difficult to discern the actual situation into the 1990s. As one report states, information about Iran’s CBW programs “is sketchy and often colored by the political strains

³¹⁹ U.S. Central Intelligence Agency, Nonproliferation Center, “The Weapons Proliferation Threat,” March 1, 1995, p. 12.

³²⁰ Shirley A. Kan, “China’s Proliferation of Weapons of Mass Destruction and Missiles: Current Policy Issues,” Congressional Research Service, July 1, 2022, p. 9; Ronen Bergman, *The Secret War with Iran: The 30-Year Clandestine Struggle Against the World’s Most Dangerous Terrorist Power* (New York: Free Press, 2008), pp. 281-283.

³²¹ U.S. Central Intelligence Agency, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January Through 30 June 1998,” p. 3.

³²² Diary of Rafsanjani, 14 Ordibehesht 1374 [May 4, 1995], *Mard-e Bohran-ha* [man of crises].

³²³ Brill, “Part II.”

³²⁴ “Iran: Rafsanjani interviewed on relations with the USA, nuclear weapons,” Vision of the Islamic Republic of Iran Network 1 (Tehran), reported by BBC Monitoring, March 24, 1997.

³²⁵ Giles, “The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons,” pp. 94-95.

³²⁶ Director of Central Intelligence, “Prospects for Special Weapons Proliferation and Control,” National Intelligence Estimate, NIE 5-91C, Volume II-Annexes, July 1991, available via the Wilson Center Digital Archive, <https://digitalarchive.wilsoncenter.org/document/national-intelligence-estimate-nie-5-91c-prospects-special-weapons-proliferation-and>.

³²⁷ U.S. Central Intelligence Agency, Nonproliferation Center, “The Weapons Proliferation Threat,” March 1, 1995, p. 12.

between [Iran] and the Western world.”³²⁸ Assessing the reality of Iran’s CBW intentions and capabilities in the 1990s is made more difficult both by the lack of details in unclassified sources and by the difficulty in taking intelligence claims during the 1990s at face value based on what is known about their flaws in the run up to the 2003 Iraq War. This is exacerbated by what appears to be a post-2003 significant change in downgrading stated suspicions about Iranian CBW programs, which will be addressed in the following chapter.

In sum, since the beginning of the Iran-Iraq War, Iran moved from having few to no strategic weapon intentions or capabilities to establishing the initial origins and the strategic, technological, and organizational foundations during the war. In its new postwar pattern, and summarized in Table 2 below, Iran actively built upon these foundations—in terms of both military strategy and weapons acquisition to develop new capabilities to acquire, threaten, and use strategic weapons in the years and decades that followed.

Table 2. Iran’s New Pattern for Strategic Weapon Acquisition, Threat, and Use

Element of New Pattern	Key Organizations
Military Strategy	
Retaliatory deterrence, including retaliatory operations	IRGC Air Force
Asymmetric warfighting	IRGC Navy
Military exercises to enhance readiness, deterrence, and asymmetric capabilities	IRGC, Artesh
Acquisition	
Ballistic missiles	MODAFL
ASCMs, interests in LACMs	MODAFL
Long-range and medium-range artillery rockets	MODAFL
UAVs	MODAFL
Nuclear weapons program	MODAFL, AEOI
Suspected CBW programs	MODAFL

Why is the Case of the Iran-Iraq War Relevant Today?

Although the Iran-Iraq War occurred forty years ago, it constitutes the “most important experience influencing Iran’s security strategy,”³²⁹ and Tehran’s experiences and the lessons it learned from the war still strongly influence its acquisition, threat, and use of strategic weapons today for several reasons.³³⁰

³²⁸ John Hart, Roger Roffey, and Jean Pascal Zanders, eds., “Iran’s Disarmament and Arms Control Policies for Biological and Chemical Weapons, and Biological Capabilities,” Swedish Defence Research Agency, December 2003, p. 7.

³²⁹ Annie Tracy Samuel, *The Unfinished History of the Iran-Iraq War: Faith, Firepower, and Iran's Revolutionary Guards* (New York: Cambridge University Press, 2021), Kindle edition, location 7067.

³³⁰ For a valuable analysis on the enduring importance of the Iran-Iraq War on Iranian security policies and actions in general, see: Ariane M. Tabatabai and Annie Tracy Samuel, “What the Iran-Iraq War Tells Us about the Future of the Iran Nuclear Deal,” *International Security*, Vol. 42, No. 1 (Summer 2017), pp. 152-185.

First, many key drivers and constraints from the 1980s and 1990s appear to remain in place today. Indeed, Iran's perceived threats vis-à-vis the United States and its allies and partners, its own lack of powerful allies, and its distrust in foreign powers, international law, and institutions, to name just a few examples, appear as strong now as they were decades ago. Similarly, the emphasis Iran places on strategic deterrence, asymmetric military strategy and capabilities, and self-sufficiency and self-reliance, among other elements, have also endured. These forces constitute important drivers that continue to shape its approach toward strategic weapons through to the present.

Second, Iran's acquisition of strategic weapons and development of their supporting defense industries during the war and into the 1990s created both the origins and the technical and organizational foundations for many of the Iranian strategic weapon capabilities we see today. Examples include Iran's development of improved versions and, indeed, entire families of strategic weapons from systems that originated in the 1980s and 1990s, including the Shahab-3 and Fateh-110 ballistic missiles, Nazeat and Zelzal long-range rockets, Silkworm and Noor anti-ship cruise missiles, and Mohajer and Ababil UAVs.³³¹ Other examples include the origins of Iran's civilian and military nuclear programs and capabilities, as well as those of its suspected CBW-related efforts.

Third, for decades, Iranian research centers and experts have conducted extensive research on the importance and lessons of the Iran-Iraq War. According to Tabatabai and Samuel, this research is a clear indication of the war's continuing importance to Iranian decisionmakers and strategic culture.³³² Speaking in 1995, for instance, IRGC commander Mohsen Rezai stated that Iran used the war as "the richest possible source of theoretical and practical information for the country in terms of defense."³³³ In a more recent example, in December 2022, Iran's AFGS and MODAFL co-sponsored a conference on the "Position of Science and Technology in Holy Defense," whose proceedings included dozens of papers by Iranian officials and experts on the importance of the Iran-Iraq War on Iran's development of science and technology for military applications.³³⁴

Lastly, as shown in Table 3 below, many of the key Iranian decisionmakers of the 1980s remained key players in later decades, including up to today.³³⁵ These officials directly experienced the war and learned and applied key lessons from it to Iran's acquisition, threat, and use of strategic weapons. Indeed, the DIA states that, "most of Iran's senior military leaders fought in the [Iran-Iraq] war, and their experiences have played a critical role in shaping Iranian military strategy and capabilities."³³⁶

³³¹ Indeed, the 1980s and 1990s established what would become a key element of Iran's method of developing weapons, including missiles, according to long-time defense industries official Sayyed Mehdi Farahi. In this method, Iran creates a roadmap (*naghsbeh-rah*) based on a single platform—such as the Fateh ballistic missile—and develops multiple variants based on that original platform with ever-increasing capabilities. Once the capabilities for the original platform are maximized, Iran then shifts to a new platform to start a new series of variants. (Sayyed Mehdi Farahi, interviewed on Iranian TV, "goftegu-e vizheh-ye khabari: ertegha-ye san'at-e defa'i, rahbord-ha va ofogh-e pishro?" [special news discussion: improving the defense ministry, strategies and horizons of progress?], 31 Mordad 1400 [August 22, 2021], <https://www.youtube.com/watch?v=dIMEmUQWKY>.)

³³² Tabatabai and Samuel, "What the Iran-Iraq War Tells Us about the Future of the Iran Nuclear Deal," p. 154.

³³³ "IRGC Commander on Deterrence as Military Priority," Tehran Voice of the Islamic Republic of Iran First Program Network, September 25, 1995, FBIS-NES-95-185, September 25, 1995.

³³⁴ "hamayesh-e melli-e jayegah-e elm va fanavari dar defa-e moghadas" [national conference on the position of science and technology in holy defense], conference sponsored by the AFGS and MODAFL, December 2022, <http://www.paydari.ir/>.

³³⁵ See, for example: Farideh Farhi, "The Antinomies of Iran's War Generation," in Lawrence G. Potter and Gary G. Sick, eds., *Iran, Iraq, and the Legacies of War* (New York: Palgrave Macmillan, 2004), pp. 101–120.

³³⁶ U.S. Defense Intelligence Agency, "Iran Military Power," p. 23.

Similarly, according to Spencer Lawrence French, Supreme Leader Khamenei and “nearly all of Iran’s current top military and national security leaders either helped implement or at the very least witnessed [Iran’s] strategy during the war.”³³⁷ In 2022, the current chief of Iran’s Khatemolambia Central Headquarters (KCHQ), Gholam Ali Rashid observed that he and his contemporaries are the “war generation” (*nasl-e jang*) and that “with war we have learned war.”³³⁸ For these reasons, according to Tabatabai and Samuel:

the Iran-Iraq War remains a central component of Iran's national identity. Although it was a disaster for the country, the leaders of the Islamic Republic emerged from the war smarter and stronger. Many of its war veterans now hold key positions in the government and military. For the revolution and the regime it brought to power, the Iran-Iraq War was a test, one that provided Iran with important lessons that have driven its policies since.³³⁹

Table 3: Selected Key Iranian Decisionmakers Involved in Acquisition, Threat, and Use

Iranian Official	1980s Positions	Later Positions (1990s-2010s)	2020s Positions
Ayatollah Ali Khamenei	Iranian president, head of the Supreme Defense Council (SDC)	Supreme Leader, commander-in-chief of the armed forces	Supreme Leader, commander-in-chief of the armed forces
Ayatollah Ali Akbar Hashemi Rafsanjani	De facto war commander and commander-in-chief of the armed forces, SDC member and spokesperson, Majles head	Iranian President	(Deceased)
Hassan Ruhani	Rafsanjani’s deputy, member of SDC, commander of Khatemolambia Central Headquarters (KCHQ), air defense commander, head of Majles defense committee	Secretary of the Supreme Council for National Security (SCNS), Iranian President	
Ali Shamkhani	IRGC deputy commander, IRGC Ground Force commander, IRGC minister	Commander of both IRGC and Artesh navies, defense minister	SCNS secretary, political advisor to Supreme Leader Khamenei

³³⁷ French, “Embracing Asymmetry,” p. 70.

³³⁸ “hoshdar-e sarlashkar-e Rashid be motahedan-e Israel: ghodrat-e niru-ha-ye mosalah-e ma virangar ast” [general Rashid’s warning to Israel’s allies: The power of our armed forces is devastating], *Islamic Republic News Agency (IRNA)*, 9 Dey 1401 [December 30, 2022], <https://irna.ir/xjLncj>.

³³⁹ Tabatabai and Samuel, “What the Iran-Iraq War Tells Us about the Future of the Iran Nuclear Deal,” p. 161.

Ali Akbar Ahmadian	High-level IRGC official	IRGC Navy (IRGCN) deputy commander and commander, IRGC Joint Staff chief, head of the IRGC's Imam Hossein University (IHU), head of IRGC Strategic Studies Center	Head of IRGC Strategic Studies Center, SCNS secretary
Gholam Ali Rashid	IRGC deputy for operations	Official of the Armed Forces General Staff (AFGS), e.g., deputy for intelligence and operations, AFGS deputy chief; SCNS deputy for defense affairs	Chief of the KCHQ
Mohammad Bagheri	IRGC intelligence official	AFGS official, e.g., deputy for intelligence and operations, AFGS chief; deputy for coordination of the KCHQ	AFGS chief
Mohammad Shirazi	SDC deputy of self-sufficiency section	Head of the Supreme Leader's military office	Head of the Supreme Leader's military office
Yahya Rahim Safavi	IRGC deputy commander for operations	IRGC deputy commander, IRGC commander	Senior military advisor to Supreme Leader Khamenei
Mohammad Ali Jafari	High-level IRGC official	IRGC-GF deputy and commander, head of the IRGC's Strategic Center, IRGC commander	
Hossein Salami	High-level IRGC official	IRGC deputy for operations, commander of IRGC Air Force, IRGC deputy commander, SCNS deputy for defense, IRGC commander	IRGC commander
Amir Ali Hajizadeh	Deputy commander of the IRGC Missile Unit	IRGC air defense commander	IRGC Aerospace Force (IRGC-ASF) commander

Sayyed Majid Musavi	IRGC Missile Unit official		IRGC-ASF deputy commander
Ali Balali	IRGC Missile Unit official	IRGC Air Force deputy for training, Khatemolambia Air Defense Base deputy for coordination	Senior advisor to IRGC-ASF commander Hajizadeh
Abbas Nilforushan	IRGC Air Force procurement official	IRGC operations official	IRGC deputy for operations
Hossein Alai	IRGCN commander	Chief of IRGC Joint Staff, Aviation Industries Organization director	
Ali Fadavi	Chief of intelligence for KCHQ	IRGCN commander	IRGC deputy commander
Mohammad Reza Naghdi	IRGC intelligence and operations officer	IRGC Qods force officer, AFGS deputy for logistics and industrial research	IRGC deputy for coordination
Hossein Dehghan	Various IRGC leadership positions, including IRGC Air Force deputy commander and IRGC commander in Syria and Lebanon	IRGC Air Force commander, deputy of IRGC Joint Staff, deputy defense minister, defense minister	Advisor to Supreme Leader Khamenei for defense industries and armed forces support
Mostafa Mohammad Najjar	IRGC Central Command HQS official, head of IRGC Middle East department, IRGC Ministry industries official	DIO official, defense minister, senior advisor to the AFGS chief	
Ali Hosseinitash	IRGC planning and operations official, IRGC Ground Force chief of staff, IRGC Navy deputy commander, IRGC Ministry industries official	MODAFL deputy for research, head of MODAFL's TRIDI, head of the IRGC's Imam Hossein University (IHU)	SCNS deputy for strategy
Sayyed Mehdi Farahi	Missile industries official in IRGC Ministry	Defense Industries Organization (DIO) director, Aerospace Industries Organization (AIO) director, deputy	Deputy defense minister

		defense minister for logistics, research, and industrial affairs; possibly head of SPND	
Ahmad Vahid Dastjerdi	IRGC Ministry deputy minister, procurement official, IRGC minister	Deputy defense minister for logistics, Aerospace Industries Organization (AIO) director, deputy defense minister	
Manuchehr Manteghi	IRGC Ministry missile official	Official of the DIO and AIO, managing director of Aviation Industries Organization, head of the Iranian National Space Administration	Secretary of Iran's Space Development and Advanced Transportation Technology Headquarters
Mohammad Mehdi Nezhad Nouri	Probable IRGC Ministry official	Head of MODAFL's Defense Science and Technology Research Center, head of TRIDI, head of QAI, head of MODAFL's Malek Ashtar University of Technology (MUT), deputy science minister for research, senior scientific advisor to the defense minister	AFGS deputy for science, research, and technology
Mehrdad Akhlaghi Ketabchi	Defense Ministry research center missile official	Various MODAFL positions (TRIDI Missile Research Center, Shahid Bakeri Industries Group director, director of DIO and AIO)	
Mohammad Eslami	DIO deputy for engineering and development plans	Various MODAFL positions (HESA director, AIO deputy director, TRIDI head, deputy minister positions, MUT official)	AEOI head

Sayyed Hojatollah Ghoreishi	Official in IRGC UAV program	Official of MODAFL's Qods Aviation Industries (QAI), deputy defense minister for logistics and industrial research	Deputy defense minister with unknown portfolio
Ghasem Damavandian	Official in IRGC UAV program		QAI director
Amir Hatami	Artesh official	Artesh deputy for intelligence, other Artesh positions; AFGS deputy for human resources, senior advisor to AFGS chief, deputy defense minister, defense minister	Senior advisor to Supreme Khamenei for Artesh affairs
Hossein Hassani Sa'di	IRIGF commander	AFGS deputy for coordination, member of council of advisors for the commander-in-chief	Deputy commander of the KCHQ
Mohammad Bagher Zolghadr	Commander of the IRGC's Ramezan Command, commander of Asymmetric Warfare HQS	Chief of IRGC Joint Staff, deputy IRGC commander, AFGS deputy for culture	Secretary of the Expediency Council
Mahmud Chahar Baghi	IRGC artillery commander	IRGC-GF artillery and missile commander, AFGS head of artillery	KCHQ deputy for training
Ahmad Vahidi	IRGC intelligence official	IRGC Qods Force commander, defense minister	Interior minister

Sources: Author's research

Conclusion

This chapter examined the pattern break of the Iran-Iraq War and Iran's responses to its key elements as they relate to the acquisition, threat, and use of strategic weapons. It highlighted the fact that Iran lacked an initial "pattern" for strategic weapons before the war and finds that its responses to the conflict created both the origins and the strategic, technological, and organizational foundations for Iranian strategic weapons acquisition, threat, and use in the years to come.

In terms of *acquisition*, these foundations included:

- Foreign procurement and domestic development of strategic weapons;

- The conduct of multiple weapons acquisition programs across multiple organizations;
- The development of domestic defense industries and organizations to support future weapons development and increase Iran’s self-sufficiency;
- A reliance on multiple methods of acquisition, including foreign purchase, technology transfer, reverse engineering, and domestic design and development; and
- The conduct of illicit procurement of components, materials, equipment to skirt export controls, sanctions, and embargoes.

In terms of *threat and use*—Iran’s military strategy—these foundations included:

- The creation of the IRGC in parallel to the Artesh, which would play an important role not just in the threat and use of strategic weapons but also their acquisition;
- The adoption of a deterrence strategy based on retaliation as well as initial efforts to develop an asymmetric warfighting strategy, both of which would drive Iranian strategic weapons acquisition;
- The use of both overt and covert—or at least semi-deniable—employment of strategic weapons; and
- The establishment of long-range conventional strike weapons as a central component of both deterrence and defense, especially ballistic missiles, long-range artillery rockets, and cruise missiles.

As the next two chapters show, these elements of the wartime origins and foundations for Iran’s strategic weapons in the 1980s, which resulted from decisions and events that unfolded during the Iran-Iraq war, established a “path dependent” trajectory that shaped Iran’s acquisition, threat, and use in the decades to follow.

CHAPTER SEVEN

Threats and Opportunities Faced by Iran, 2001-2003

Jim Lamson

Introduction

This chapter—the second in this report to focus on Iran—examines the period from 2001-2003, when Iranian officials experienced a set of surprises that created both perceived threats and opportunities for the country. This mix of threats and opportunities helped to shape Iran’s acquisition, threat, and use of strategic weapons for the rest of the 2000s and into the following decades. This theme of “threats and opportunities” is a common one highlighted by Iranian officials, who regularly highlight the importance of converting threat (*tahdid*) into opportunity (*forsat*), guided by Supreme Leader Khamenei’s statement that “we can turn every threat into an opportunity” (*mitavanim az har tahdidi yek forsati besazim*).¹ Building on this principle, former IRGC commander Mohsen Rezaei has stated that Iran’s “formula” (*formul*) has been to convert threats into opportunities, highlighting the 1980s as a time when threats drove Iran to eliminate its military weaknesses, an effort which he claims has since deterred U.S. and Israeli military attack.² Similarly, according to IRGC Aerospace Force commander Amir Ali Hajizadeh, sanctions and pressure against Iran created the “opportunity” for Iran to develop domestically its own weapons, and also Iran’s military strategy and capabilities have converted the threat of U.S. forces in the region into an opportunity—that is, a vulnerable target—for Iran’s military.³

The pattern break of 2001 to 2003, described by one expert as “the most turbulent period in the post-war history of the IRI,”⁴ introduced three important elements that shaped Iran’s acquisition, threat, and use of strategic weapons, both immediately and over the coming years. These were U.S. policies and actions taken in response to the September 11 attacks, the public exposure of Iran’s secret nuclear activities, and the dramatic increase of the U.S. military presence in the region around Iran.

As in the previous chapter, which focused on the Iran-Iraq War, this analysis of the 2001-2003 timeframe seeks to examine Iran’s pattern for the acquisition, threat, and use of strategic weapons during this time and the key drivers and constraints that shaped it. This includes Iran’s approach to

¹ “bayanat dar haram-e motahar-e Razavi” [statements in the holy shrine of Razavi], official website of Supreme Leader Khamenei, 1 Farvardin 1392 [March 21, 2013], <https://farsi.khamenei.ir/speech-content?id=22233>.

² “Rezaei: tahkim-e rabateh-ye mardom ba nezam-e eslami yek zarurat ast” [Rezaei: consolidation of the people’s relationship with the Islamic system is a necessity], *Zaman Daily*, 3 Khordad 1395 [May 23, 2016], p. 3, <http://archive.zamandaily.ir/attachments/article/626/3244.pdf>.

³ Interview with IRGC Aerospace Force commander Amir Ali Hajizadeh, Iran Soraya TV, undated, <https://www.youtube.com/watch?v=tCQLTI2r6kY>; “sardar Hajizadeh: nav-e Amrikai baraye ma yek sibel ast” [general Hajizadeh: the American navy is a target for us], *Iran Press*, 22 Ordibehesht 1398 [May 12, 2019], <https://farsi.iranpress.com/iran-i166787>.

⁴ Ali Fathollah-Nejad, *Iran in an Emerging New World Order: From Abmadinejad to Rouhani* (Singapore: Palgrave Macmillan, 2021), p. 261.

the threat and use of strategic weapons—its military strategy—and its reported acquisition of strategic weapons to provide the capabilities (means) for that strategy. As it will outline, Iran’s perceptions and responses to the 2001-2003 pattern break continued important themes from the preceding chapter and also created a new pattern for Iran’s acquisition, threat, and use of strategic weapons for the following years and decades.

Initial Pattern: Late 1990s-2001

As part of Iran’s pattern in the late 1990s leading up to the 2001-2003 pattern break, its overall national security strategy was based on three key elements: Détente, regional balancing, and deterrence. With the election in 1997 of a new president, Mohammad Khatami, Iran pursued a foreign policy with détente (*tanesh-zadai*)—literally “tension-removal”—as its “cornerstone,” to normalize relations with countries within and outside the region, as a continuation of President Rafsanjani’s previous policy of rapprochement.⁵ In 2000, Iranian defense minister Ali Shamkhani stated that Iran’s defense policy and military doctrine were based on the policy of détente and that Iran would not initiate attacks against any country.⁶

Secondly, as described by Shamkhani, Iran pursued a policy of creating a balance of power or “strategic balance” in the region by increasing its military capabilities, based on the principle that differences in the level of military capabilities can lead to crises and conflict.⁷

As a third main element of its national security strategy, Iran continued its efforts to improve its deterrence power. Iran’s third five-year plan (2000-2004) included deterrence as a key national policy goal,⁸ and Shamkhani stated in 2000 that Iran’s principal defense policy was to enhance and preserve its deterrence capability.⁹

Military Strategy

The main threat perceptions that drove Iranian military strategy continued to comprise the United States—especially its ongoing military presence in the region—Israel, and Iraq. However, during this time, although Tehran “held no illusions about its security in the rough neighborhood of southwest Asia,”¹⁰ it appeared to enjoy a lower level of perceived threat from these sources for the time being. Indeed, as described by a RAND study published in 2001 before the September 11 attacks, “there is

⁵ Shah Alam, “The Changing Paradigm of Iranian Foreign Policy Under Khatami,” *Strategic Analysis*, Vol. 24, No. 9 (2000), pp. 1629-1631.

⁶ “Iran: Defence minister interviewed on Iran’s defence policy,” *Vision of the Islamic Republic of Iran Network 2*, December 28, 2000, in BBC Monitoring, December 30, 2000.

⁷ “Iran: Defence minister comments on production of Shahab-3 missile,” *Vision of the Islamic Republic of Iran Network 2*, July 30, 1998, in BBC Monitoring, August 1, 1998; “Iran: Defence minister interviewed on Iran’s defence policy,” *Vision of the Islamic Republic of Iran Network 2*, December 28, 2000, in BBC Monitoring, December 30, 2000.

⁸ Iran’s third five-year plan, official website of Iran’s Expediency Discernment Council, undated, <https://maslahat.ir/index.jsp?pageid=518>.

⁹ “Iran: Defence minister comments on production of Shahab-3 missile,” *Vision of the Islamic Republic of Iran Network 2*, July 30, 1998, in BBC Monitoring, August 1, 1998; “Iran: Defence minister interviewed on Iran’s defence policy,” *Vision of the Islamic Republic of Iran Network 2*, December 28, 2000, in BBC Monitoring, December 30, 2000.

¹⁰ Steven R. Ward, “The Continuing Evolution of Iran’s Military Doctrine,” *Middle East Journal*, Vol. 59, No. 4 (Autumn 2005), p. 561.

no clear and present danger to Iran today.”¹¹ In this environment of alleviated threats, Iran’s military strategy in the late 1990s was still evolving¹² as it continued its postwar efforts to develop and refine its retaliatory deterrence and asymmetric warfare strategies.

Deterrence Strategy

The main focus of Iran’s military strategy was retaliatory deterrence—that is, deterring its adversaries through the threat of retaliation (*moghabeleh be mesl*)—a strategy which had its roots in Iran’s policy of retaliation during the Iran-Iraq War. In 1998, Shamkhani stated that, under Iran’s deterrence policy, if Iran was attacked, it was prepared to absorb the first strike and then conduct a second strike to avenge the first one and prevent another strike against it.¹³ Thus, Iran’s retaliation strategy—like in the 1980s—was aimed at both revenge (*enteqham*) for the enemy action as well as deterrence (*bazdaranedgi*) of future enemy actions. According to Iranian analyst Sayyed Mohammad Abu Torab, in developing Iran’s deterrent, officials understood they had to fulfill three conditions for deterrence: First, Iran needed to acquire destructive force; second, Iranian political and military officials had to have the resolve (*eradeh*) to actually use that force; and third, Iran’s adversaries needed to understand that Iran would do so.¹⁴

To demonstrate its resolve and capabilities for executing its retaliatory deterrence strategy, Iran conducted retaliatory operations against non-state actors based in Iraq, both to punish them for their attacks on Iran and to deter future attacks. Between 1997 to 2001, Iran conducted air and ballistic missile strikes against targets in Iraq of the Iranian opposition group, Mojahedin-e-Khalgh (MeK), both as revenge for MeK actions against Iran and to deter future MeK attacks.¹⁵ According to Iranian professor Mohammad Sadegh Kushki, Iran’s attacks against the MeK afforded deterrence value in two ways: First, they were Iran’s first practical moves toward deterrence as they demonstrated its missile capabilities and its resolve to respond to attacks. Second, the attacks sent the message to the U.S. military in the region that Iran could and would target U.S. bases if attacked.¹⁶ Ballistic missiles, and to a lesser extent long-range artillery rockets,¹⁷ operated by the

¹¹ Daniel Byman, Shahram Chubin, Anoushiravan Ehteshami, and Jerrold Green, *Iran’s Security Policy in the Post-Revolutionary Era* (Santa Monica: RAND Corporation, 2001), p. 11.

¹² According to Abdolrasool Divsallar, “Iran lacked an effective operational doctrine throughout the 1990s.” (Abdolrasool Divsallar, “Why Biden shouldn’t seek to deprive Iran of conventional deterrence,” Middle East Institute, February 25, 2021, <https://www.mei.edu/publications/why-biden-shouldnt-seek-deprive-iran-conventional-deterrence>.)

¹³ “Iran: Defence minister comments on production of Shahab-3 missile,” *Vision of the Islamic Republic of Iran Network* 2, July 30, 1998, in BBC Monitoring, August 1, 1998.

¹⁴ Iranian “Deterrent” (*bazdaranedeh*) documentary, part 1, <https://www.youtube.com/watch?v=fsUf2Vak4y4>.

¹⁵ United Nations Security Council, “Letter Dated 29 September 1997 From the Permanent Representative of Iraq to the United Nations Addressed to the Secretary-General,” S/1997/753, September 29, 1997, <https://digitallibrary.un.org/record/244062>; “Iranian opposition ‘military base’ in Iraq attacked,” *Islamic Republic News Agency (IRNA)*, September 29, 1997, in BBC Monitoring, September 29, 1997; Comprehensive Report of the Special Advisor to the DCI on Iraq’s WMD, with Addendums (Duelfer Report), Volume 1, September 2004, p. 29; United Nations Security Council, “Letter Dated 12 July 1999 From the Permanent Representative of the Islamic Republic of Iran to the United Nations Addressed to the Secretary-General,” S/1999/781, July 12, 1999, <https://digitallibrary.un.org/record/1490295?ln=ru>.

¹⁶ Iranian “Deterrent” (*bazdaranedeh*) documentary, part 1, <https://www.youtube.com/watch?v=fsUf2Vak4y4>.

¹⁷ For instance, the IRGC Air Force operated Zelzal-2 and Zelzal-3 long-range rockets with ranges of more than 200 km. (“marahel-e sakht va tarahi-e mushak-ha-ye zelzal 1, 2, va 3 dar vezarat-e defa-e Iran anjam shod” [stages of manufacture and design of zelzal 1, 2, and 3 rockets conducted in Iran’s defense ministry], *Islamic Republic News Agency (IRNA)*, 31 Shahrivar 1378 [September 22, 1999], <https://www.irna.ir/news/5686977/>.)

IRGC Air Force served as the main foundation for Iran's retaliatory deterrence strategy, but (as seen with Iran's attacks against the MeK), the Artesh Air Force (IRIAF) played a role as well.

Asymmetric Strategy

In addition to its retaliatory deterrence strategy, Iran also continued its efforts from the early 1990s to develop its emerging asymmetric military strategy to respond to attacks if deterrence failed. According to the National Council of Resistance of Iran (NCRI), since 2000, Iranian military planners continued their work to develop the military's "asymmetric warfare" doctrine under the direct supervision of Supreme Leader Khamenei.¹⁸ Like in previous years, this asymmetric strategy continued to be under the general framework of "all-dimensional defense" (*defa-e hameh-janebeh*), Iran's overall defense doctrine to confront the full spectrum of threats to the country.¹⁹

Military Exercises

Both the IRGC and Artesh also continued their long-time practice of conducting military exercises to increase their combat capabilities and readiness in support of Iran's deterrence and asymmetric warfare strategies. As part of these exercises, Iranian military forces tested and employed ballistic missiles, cruise missiles, artillery rockets, and CBW defense equipment.²⁰

Weapons Acquisition

Iran continued its overall pattern of acquisition of strategic weapons from the early-to-mid-1990s, aimed at generating the necessary means (capabilities) for its retaliatory deterrence and asymmetric strategies. In 2000, defense minister Shamkhani stated that Iran's weapons acquisition efforts focused on the types of weapons—especially missiles—that provided Iran with the greatest degree of deterrence.²¹ In addition, Iran sought to purchase and develop weapons such as cruise missiles and long-range artillery rockets that would enhance its asymmetric warfare capabilities.

Ballistic and Cruise Missiles

Iran's efforts to acquire ballistic and cruise missiles expanded in the late 1990s and early 2000s. In the area of ballistic missiles—the central element of its retaliatory deterrence strategy—Iran sought

¹⁸ "Nuclear bombs and Iranian regime's military doctrine," official website of the National Council of Resistance of Iran (NCRI), July 12, 2005, <https://www.ncr-iran.org/en/news/nuclear/nuclear-bombs-and-iranian-regimes-military-doctrine/>.

¹⁹ "defa-e hameh-janebeh' dar barabar-e tahdidat-e hameh-janebeh," ["all-dimensional defense" against all-dimensional threats], official website of Iran's Passive Defense Organization (*sazman-e padafand-e gheyre-ameh*), 16 Mordad 1397 [August 7, 2018], <https://paydarymelli.ir/fa/news/37235/>.

²⁰ "artesh-e Iran 3 razmayesh dar khaliy-e fars, darya-ye Oman va Khorramshahr bargozar mikonad" [Iran's Artesh conducts 3 exercises in Persian Gulf, Sea of Oman and Khorramshahr], *Islamic Republic News Agency (IRNA)*, 1 Khordad 1379 [May 21, 2000], <https://www.irna.ir/news/5629688/>; "yegan-ha-ye sherkat-konandeh dar tamrin-e zolfaghar be tajhizat-e defa-e shimiai mojahaz shodand" [participating units in zolfaghar exercise equipped with chemical defense equipment], *Islamic Republic News Agency (IRNA)*, 2 Mehr 1376 [September 24, 1997], <https://www.irna.ir/news/5768466/>; "tazeh-tarin tolidat-e vezarat-e defa dar razmayesh-e daryai-e vahdat 79 azmayesh mishavand" [latest products of the defense ministry tested in the vahdat 79 naval exercise], *Islamic Republic News Agency (IRNA)*, 7 Aban 1379 [October 28, 2000], <https://www.irna.ir/news/6881878/>.

²¹ "Iran: Defence minister interviewed on Iran's defence policy," *Vision of the Islamic Republic of Iran Network* 2, December 28, 2000, in BBC Monitoring, December 30, 2000.

to increase their range, accuracy, and destructive power.²² These efforts included two general tracks focused on liquid-propellant missiles and solid-propellant missiles. Reflecting the special importance and priority of its ballistic missile (and other missile and rocket) programs, in the late 1990s, MODAFL established the Aerospace Industries Organization (AIO) to consolidate its research, development, and production of missiles and rockets.²³

In the first track, Iran continued to produce and deploy its Shahab-1 and Shahab-2 SRBMs based on North Korea's previous technology transfers to Iran. Iran also made significant progress in developing its own version of North Korea's Nodong (Hwasong-7) MRBM—what it called the Shahab-3—apparently based on reverse engineering efforts along with Russian technical assistance.²⁴ Iran conducted the first flight tests of the Shahab-3 in 1998 and 2000.²⁵ Iranian officials in the late 1990s were apparently also interested in the possibility of developing longer-range MRBMs beyond the Shahab-3. For instance, according to President Rafsanjani's diary, as of August 1997, MODAFL had plans for a 2,500-km-range MRBM,²⁶ and Western sources claimed Iran was working to develop a missile based on the 2,000-km-range former Soviet SS-4 (R-12) ballistic missile.²⁷

²² "Iran: Defence minister interviewed on Iran's defence policy," *Vision of the Islamic Republic of Iran Network* 2, December 28, 2000, in BBC Monitoring, December 30, 2000.

²³ Official website of MODAFL, February 18, 2018, captured by the Internet Archive Wayback Machine, <https://web.archive.org/web/20180218075312/http://defanews.ir/sug/%D8%B3%D8%A7%D8%B2%D9%85%D8%A7%D9%86-%D8%B5%D9%86%D8%A7%DB%8C%D8%B9-%D9%87%D9%88%D8%A7%D9%81%D8%B6%D8%A7>; "ghanun-e tashkil-e sazman-e sanaye havafaza-ye niru-haye mosalah-e jomhuri-e eslami-e Iran" [establishment law of the aerospace industries organization of the armed forces of the Islamic Republic of Iran], Iranian Parliament Research Center of the Islamic Republic of Iran, 1 Azar 1384 [November 22, 2005], <https://rc.majlis.ir/fa/law/show/97780>.

²⁴ Office of the Secretary of Defense, *Proliferation: Threat and Response*, January 2001, p. 35. According to the diaries of then-President Rafsanjani, in the late 1990s, Russian technicians assisted Iran's development of the engine of the Scud E (No Dong/Shahab-3). ("khaterat-e ruzaneh-ye Ayatollah Hashemi Rafsanjani" [daily memories of Ayatollah Hashemi Rafsanjani], year 1376 [March 1997-March 1998], book of *Sardar-e Sazandegi* [construction general], official website of Ayatollah Hashemi Rafsanjani, <https://rafsanjani.ir/records/%D8%AE%D8%A7%D8%B7%D8%B1%D8%A7%D8%AA-%D8%B1%D9%88%D8%B2%D8%A7%D9%86%D9%87-%D8%A2%DB%8C%D8%AA-%D8%A7%D9%84%D9%84%D9%87-%D9%87%D8%A7%D8%B4%D9%85%DB%8C-%D8%B1%D9%81%D8%B3%D9%86%D8%AC%D8%A7%D9%86%DB%8C-%D8%B3%D8%A7%D9%84-%DB%B1%DB%B3%DB%B7%DB%B6-%DA%A9%D8%AA%D8%A7%D8%A8-%D8%B3%D8%B1%D8%AF%D8%A7%D8%B1-%D8%B3%D8%A7%D8%B2%D9%86%D8%AF%DA%AF%DB%8C-70?q=%DA%A9%DB%8C%D8%A7%D9%86%DB%8C>.)

²⁵ Office of the Secretary of Defense, *Proliferation: Threat and Response*, January 2001, pp. 35, 37.

²⁶ "khaterat-e ruzaneh-ye Ayatollah Hashemi Rafsanjani" [daily memories of Ayatollah Hashemi Rafsanjani], year 1376 [March 1997-March 1998], book of *Enteghal-e Ghodrat* [transfer of power], official website of Ayatollah Hashemi Rafsanjani, <https://rafsanjani.ir/records/%D8%AE%D8%A7%D8%B7%D8%B1%D8%A7%D8%AA-%D8%B1%D9%88%D8%B2%D8%A7%D9%86%D9%87-%D8%A2%DB%8C%D8%AA-%D8%A7%D9%84%D9%84%D9%87-%D9%87%D8%A7%D8%B4%D9%85%DB%8C-%D8%B1%D9%81%D8%B3%D9%86%D8%AC%D8%A7%D9%86%DB%8C-%D8%B3%D8%A7%D9%84-%DB%B1%DB%B3%DB%B7%DB%B6-%DA%A9%D8%AA%D8%A7%D8%A8-%D8%A7%D9%86%D8%AA%D9%82%D8%A7%D9%84-%D9%82%D8%AF%D8%B1%D8%AA-81?q=%22%D8%A7%D8%B3%DA%A9%D8%A7%D8%AF%20%D8%B3%DB%8C%22>.

²⁷ U.S. Senate, "Iran's Ballistic Missile and Weapons of Mass Destruction Programs," Hearing before the International Security, Proliferation, and Federal Services Subcommittee of the Committee on Governmental Affairs, September 21, 2000.

In addition, also related to the liquid-propellant track, starting in the late 1990s, the U.S. Intelligence Community began raising concerns about Iranian intentions to develop longer-range missiles, including intermediate-range ballistic missiles (IRBMs) or intercontinental ballistic missiles (ICBMs), based in part on Iran's stated plans to develop space launch vehicles (SLVs). For instance, in 2000, U.S. intelligence officials raised concerns that Iran could test an IRBM based on Russian technology or an ICBM based on North Korea's Taepo Dong-series SLVs in the coming decade.²⁸ This was in sharp contrast to a 1995 National Intelligence Estimate that stated, "We have no evidence Iran wants to develop an ICBM."²⁹ Fueling these concerns, according to President Rafsanjani's diary, as of August 1997, MODAFL had plans to develop light SLVs,³⁰ and in 1998, MODAFL displayed an SLV model called "IRIS" with a presumed Shahab-3-type first stage.³¹ In the early 2000s, MODAFL began to develop the Safir SLV as a first step to acquire the capability to deliver satellites to orbit.³² In parallel with these activities and concerns, the diaries of President Rafsanjani from the late 1990s show Iranian interest in—and apparent Russian willingness to support—longer-range missile projects. According to a January 1998 diary entry, for example, President Rafsanjani met with MODAFL missile officials who told him that the Russians were ready to deliver ICBM technology to Iran including engines related to an unidentified 4,000-km-range missile.³³ This could relate to what Western officials claimed were Iranian efforts to acquire RD-216 engine technology from Russia, the engine which powered the former Soviet SS-5 (R-14) IRBM.³⁴

²⁸ For instance, see: "Prepared Testimony of Vice Admiral Thomas R. Wilson, U.S. Navy, Director, Defense Intelligence Agency, on Global Threats and Challenges Before the Senate Select Committee on Intelligence," February 6, 2002; testimony of Robert Walpole, National Intelligence Officer for Strategic and Nuclear Programs, National Intelligence Council, "The National Intelligence Estimate on the Ballistic Missile Threat to the United States," Hearing Before the International Security, Proliferation, and Federal Services Subcommittee of the Committee on Governmental Affairs, United States Senate, February 9, 2000; U.S. Director of Central Intelligence, "The Worldwide Threat in 2000: Global Realities of Our National Security," testimony before the Senate Foreign Relations Committee, March 21, 2000.

²⁹ U.S. Director of Central Intelligence, "Emerging Missile Threats to North America During the Next 15 Years," National Intelligence Estimate, November 1995.

³⁰ "khaterat-e ruzaneh-ye Ayatollah Hashemi Rafsanjani" [daily memories of Ayatollah Hashemi Rafsanjani], year 1376 [March 1997-March 1998], book of *Enteghal-e Ghodrat* [transfer of power], official website of Ayatollah Hashemi Rafsanjani, <https://rafsanjani.ir/records/%D8%AE%D8%A7%D8%B7%D8%B1%D8%A7%D8%AA-%D8%B1%D9%88%D8%B2%D8%A7%D9%86%D9%87-%D8%A2%DB%8C%D8%AA-%D8%A7%D9%84%D9%84%D9%87-%D9%87%D8%A7%D8%B4%D9%85%DB%8C-%D8%B1%D9%81%D8%B3%D9%86%D8%AC%D8%A7%D9%86%DB%8C-%D8%B3%D8%A7%D9%84-%DB%B1%DB%B3%DB%B7%DB%B6-%DA%A9%D8%AA%D8%A7%D8%A8-%D8%A7%D9%86%D8%AA%D9%82%D8%A7%D9%84-%D9%82%D8%AF%D8%B1%D8%AA-81?q=%22%D8%A7%D8%B3%DA%A9%D8%A7%D8%AF%20%D8%B3%DB%8C%22>.

³¹ "Project IRIS," undated, http://www.b14643.de/Spacerockets_1/Rest_World/IRIS/Description/Frame.htm.

³² Interview with MODAFL Space Group official Sayyed Ahmad Hosseini, Iranian TV (Soraya), February 8, 2021, <https://www.youtube.com/watch?v=XTmi8l-alBU>.

³³ "khaterat-e ruzaneh-ye Ayatollah Hashemi Rafsanjani" [daily memories of Ayatollah Hashemi Rafsanjani], year 1376 [March 1997-March 1998], book of *Sardar-e Sazandegi* [construction general], official website of Ayatollah Hashemi Rafsanjani, <https://rafsanjani.ir/records/%D8%AE%D8%A7%D8%B7%D8%B1%D8%A7%D8%AA-%D8%B1%D9%88%D8%B2%D8%A7%D9%86%D9%87-%D8%A2%DB%8C%D8%AA-%D8%A7%D9%84%D9%84%D9%87-%D9%87%D8%A7%D8%B4%D9%85%DB%8C-%D8%B1%D9%81%D8%B3%D9%86%D8%AC%D8%A7%D9%86%DB%8C-%D8%B3%D8%A7%D9%84-%DB%B1%DB%B3%DB%B7%DB%B6-%DA%A9%D8%AA%D8%A7%D8%A8-%D8%B3%D8%B1%D8%AF%D8%A7%D8%B1-%D8%B3%D8%A7%D8%B2%D9%86%D8%AF%DA%AF%DB%8C-70?q=%DA%A9%DB%8C%D8%A7%D9%86%DB%8C>.

³⁴ U.S. Senate, "Iran's Ballistic Missile and Weapons of Mass Destruction Programs," hearing before the International Security, Proliferation, and Federal Services Subcommittee of the Committee on Governmental Affairs, September 21,

As part of the second track—solid-propellant ballistic missiles—Iran continued development of its first solid-propellant guided missile (later named the Fateh-110), which led to flight testing and the system’s unveiling in the early 2000s.³⁵ In 2001, MODAFI began an effort to develop a solid-propellant MRBM (later named the Sejjil)—parallel to its liquid-propellant MRBM efforts—under the Ashura project, further reflecting Iran’s longstanding intent to acquire the capability to strike Israel from Iranian territory.³⁶

In the area of cruise missiles, Iran continued its efforts to develop and purchase anti-ship cruise missiles (ASCMs)—a key capability to support its asymmetric strategy—and also took its first steps toward acquiring a land-attack cruise missile (LACM) capability. With ASCMs, Iran continued work to develop its own versions of the Chinese HY-2 Silkworm—what Iran called the Saegheh and Raad—and its own versions of the Chinese C-802, named the Noor and improved Noor.³⁷ Iran also continued to purchase missiles from China, including the short-range FL-6 and the C-701 ASCMs, the latter of which would later form the basis for Iran’s development of its Kosar family of ASCMs.³⁸

About fourteen years after its initial interests in LACMs,³⁹ Iran took concrete steps in 2001 to begin efforts to develop a long-range LACM. In that year, Iran illegally acquired six Kh-55 (AS-15) LACMs from Ukraine,⁴⁰ which it would use to reverse engineer and develop its own family of LACMs in the following decades.⁴¹

Long-Range Artillery Rockets

2000; Farhad Rezaei, “Iran’s Ballistic Missile Program: A New Case for Engaging Iran?” *Insight Turkey*, Vol. 18, No. 4 (2016), p. 187.

³⁵ “mushak-e balestik-e Fateh 110” [Fateh-110 ballistic missile], *Iran Press*, 18 Bahman 1401 [February 7, 2023], <https://farsi.iranpress.com/iran-i221578-%D9%85%D9%88%D8%B4%DA%A9-%D8%A8%D8%A7%D9%84%D8%B3%D8%AA%DB%8C%DA%A9-%D9%81%D8%A7%D8%AA%D8%AD-110>.

³⁶ According to an Iranian documentary, Iran began the Ashura project in early 1380 (March 2001-March 2002), an effort that would later result in the Sejjil MRBM. (Iranian “Deterrent” (*bazdarandeh*) documentary, part 2, <https://www.youtube.com/watch?v=VtMEzxDxvDU>.)

³⁷ “az ‘noor’-e miyan-bord ta dast-e boland-e ‘raad’ dar khalij-e fars” [from medium-range “noor” to long-range “raad” in the Persian Gulf], *Defa Press*, 10 Farvardin 1397 [March 30, 2018], <https://defapress.ir/fa/news/284854/>; “ghabeliyat-ha-ye amaliyati-e 8 kruz-e Irani dar tamin-e amniyati-e khalij-e fars va darya-ye Oman” [operational capabilities of 8 Iranian cruise missiles in providing security in the Persian Gulf and Sea of Oman], *Defa Press*, 14 Azar 1394 [December 5, 2015], <https://defapress.ir/fa/news/60396/>.

³⁸ Stockholm International Peace Research Institute (SIPRI), SIPRI Arms Transfers Database, <https://www.sipri.org/databases/armstransfers>; “‘mushak-e kosar,’ barg-e barandeh-ye niru-ha-ye mosalah-e Iran dar khalij-e fars” [“kosar missile,” trump card of Iran’s armed forces in the Persian Gulf], *Young Journalists Club (YJC)*, 28 Shahrivar 1398 [September 19, 2019], <https://www.yjc.ir/fa/news/7075162/>.

³⁹ As we noted in the Iran-Iraq pattern break, in 1987, war commander Rafsanjani and IRGCN commander Hossein Alai planned to study the possibility of using ASCMs to strike cities and land-based targets. (Diary of Rafsanjani, 15 Bahman 1365 [February 4, 1987], *Onj-e Defa* [peak of defense].)

⁴⁰ Paul Kerr, “Ukraine Admits Missile Transfers,” *Arms Control Today*, Vol. 35, No. 4 (May 2005), p. 41.

⁴¹ “gozash-e tahlili: mushak-e kruz-e hoveyzeh: ‘dast-e bezan-e jadid’ baraye sepah-e pasdaran” [analysis report: hoveyzeh cruise missile: ‘new striking hand’ for the IRGC], *Tasnim News*, 21 Bahman 1397 [February 10, 2019], <https://www.tasnimnews.com/fa/news/1397/11/21/1938156/>.

To support its retaliatory deterrence and asymmetric strategies, Iran continued its development, testing, and production of the Nazeat and Zelzal families of long-range artillery rockets, increasing its capabilities to produce them domestically.⁴² (Iran apparently discontinued its work on the Mojteme family of rockets.) For instance, as of September 1999, MODAFL had entered mass production of the Zelzal-1—for use by the IRGC Ground Force—and the longer-range Zelzal-2 and Zelzal-3 rockets for deployment by the IRGC Air Force.⁴³ Iran also continued its development of the medium-range Arash and Fajr families of rockets.⁴⁴

Unmanned Aerial Vehicles

Iran continued its efforts to develop and produce UAVs building on its wartime and postwar foundations, including the Mohajer and Ababil families of systems.⁴⁵ Although still not yet a strategic weapon, Iran's ongoing work continued to expand the technical and organizational foundations that would later result in the strategic UAVs that Iran would deploy in the decades to come.⁴⁶

Emphasis on Self-Sufficiency

In the late 1990s, Iranian officials emphasized the importance of maximizing self-sufficiency in the development and production of missiles and rockets (as well as UAVs).⁴⁷ For instance, Iran's second five-year plan (1995-1999) prioritized domestic production over foreign purchases, stating that the country could only purchase weapons if Iran's defense industries were unable to produce them.⁴⁸ According to a 2001 U.S. Defense Department report, Iran “remains intent on attaining an

⁴² “karkhaneh-ha-ye toolid-e motor-ha-ye sukht-e jamed-e morakab ba hozur-e vazir-e defa va poshtibani eftetaf shod / Shamkhani: tavan-e mushaki-e Iran dar khedmat-e defa az manafe-e melli va amniyat-e mantegheh-i ast” [factories for production of composite solid rocket motors inaugurated in the presence of minister of defense and support / Shamkhani: Iran's missile capability is in service of defense of national interests and regional security], *Iranian Students' News Agency (ISNA)*, 20 Bahman 1381 [February 9, 2003], <https://www.isna.ir/news/8111-05640/>; “mushak-e 'kosar' baraye defa az ab-ha-ye jomhuri-e eslami-e Iran” [“kosar” missile for defense of the waters of the Islamic Republic of Iran], *Mebr News*, 11 Khordad 1383 [May 31, 2004], <https://www.mehrnews.com/news/83307/>.

⁴³ “marahel-e sakht va tarahi-e mushak-ha-ye zelzal 1, 2, va 3 dar vezarat-e defa-e Iran anjam shod” [stages of manufacture and design of zelzal 1, 2, and 3 rockets conducted in Iran's defense ministry], *Islamic Republic News Agency (IRNA)*, 31 Shahrivar 1378 [September 22, 1999], <https://www.irna.ir/news/5686977/>.

⁴⁴ “mushak-ha-i keh ghalb-e doshman ra neshaneh gereftand” [missiles aimed at the heart of the enemy], *Islamic Republic News Agency (IRNA)*, 9 Mordad 1392 [July 31, 2013], <https://www.irna.ir/news/80756511/>; “tazeh-tarin toolidat-e vezarat-e defa dar razmayesh-e daryai-e vahdat 79 azmayesh mishavand” [latest products of the defense ministry tested in the vahdat 79 naval exercise], *Islamic Republic News Agency (IRNA)*, 7 Aban 1379 [October 28, 2000], <https://www.irna.ir/news/6881878/>.

⁴⁵ “vezarat-e defa-e Iran dah-ha farvand-e havapeyma-ha-ye bedun-e sarneshin ra be parvaz daravard” [Iran's defense ministry launched tens of unmanned aircraft], *Islamic Republic News Agency (IRNA)*, 28 Tir 1378 [July 19, 1999], <https://www.irna.ir/news/5679433/>; “seyr-e ertegha-ye tavan-e pahpadi-e Iran: az 'talash' ta 'shahed'” [route of upgrade of Iran's UAV capability: from “talash” to “shahed”], *Defa Press*, 7 Bahman 1400 [January 27, 2022], <https://defapress.ir/fa/news/502701/>.

⁴⁶ Farzin Nadimi, “Iran's Game of Drones,” Washington Institute for Near East Policy, PolicyWatch 3585, March 2, 2022, <https://www.washingtoninstitute.org/policy-analysis/irans-game-drones>.

⁴⁷ “Iran: Defence minister interviewed on Iran's defence policy,” *Vision of the Islamic Republic of Iran Network* 2, December 28, 2000, in BBC Monitoring, December 30, 2000.

⁴⁸ See article 12 under the section on “strengthening the country's defense foundation” (*taghviat-e banieh-ye defai-e keshvar*), “ghanun-e barnameh-ye panj-saleh-ye dovom-e toseh-ye eghtesadi, ejtemai, va farhangi-e jomhuri-e eslami-e Iran” [law of the second five-year plan for economic, social, and cultural development of the Islamic Republic of Iran], 20 Aban 1373 [November 11, 1994], <https://qavanin.ir/Law/TreeText/83307>.

independent production capability for all its weapons programs and has continued to make substantial progress in that regard.”⁴⁹ Despite Iran’s focus and incremental progress on increasing its self-sufficiency, its weapons programs still reportedly relied on extensive foreign technology and assistance, especially from China, Russia, and North Korea.⁵⁰ Complicating this assistance were U.S. efforts to use diplomatic pressure and economic sanctions on these three countries to limit or halt their assistance to Iran, which appeared to affect, to a certain degree, Iran’s ability to procure technologies related to ballistic and cruise missiles.⁵¹

Nuclear Weapons

Through both foreign assistance and domestic efforts, Iran continued to expand its nuclear program, especially its nuclear fuel cycle and the military element of the program. In the late 1990s, Iran reportedly decided to use these emerging capabilities as the basis to start a dedicated nuclear weapons effort. This effort—called the AMAD Plan—was managed by MODAFL and aimed to develop and test a nuclear device and to mate five nuclear warheads with Shahab-3 MRBMs. Thus, this project, if successful, would provide Iran with the ultimate means of retaliatory deterrence. The AMAD Plan included multiple parallel areas of activity to achieve this goal, including the production of fissile material (highly-enriched uranium) using secret uranium enrichment facilities; designing, manufacturing, and testing an implosion-type nuclear device; and developing a warhead and reentry vehicle for use with Shahab-3 MRBMs to deliver the nuclear payload.⁵² Iran reportedly had made significant progress in this effort before the 2001-2003 pattern break.⁵³

Chemical and Biological Weapons

U.S. and Western suspicions about Iranian CBW intentions, activities, and capabilities persisted in the late 1990s. Regarding CW, in 1998, the CIA stated that Iran had “manufactured and stockpiled chemical weapons, including blister, blood, and choking agents and the bombs and artillery shells for delivering them.”⁵⁴ A 1997 Defense Department report claimed that Iran continued to “upgrade and

⁴⁹ Office of the Secretary of Defense, *Proliferation: Threat and Response*, January 2001, p. 34.

⁵⁰ U.S. Central Intelligence Agency, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January Through 30 June 1998”; U.S. Central Intelligence Agency, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 July Through 31 December 2000”; Office of the Secretary of Defense, *Proliferation: Threat and Response*, January 2001, p. 35.

⁵¹ Kenneth Katzman, “Iran: Arms and Technology Acquisitions,” Congressional Research Service, January 26, 2001, pp. 7-10, 16, 18-20.

⁵² David Albright with Sarah Burkhard and the Good ISIS team, *Iran’s Perilous Pursuit of Nuclear Weapons*, Institute for Science and International Security, May 2021; International Atomic Energy Agency, “Implementation of the NPT Safeguards Agreement and the relevant provisions of the Security Council resolutions in the Islamic Republic of Iran,” GOV/2011/65, November 8, 2011. Also, in 1998, the CIA claimed that “Tehran continues to seek fissile material and technology for weapons development and has set up an elaborate system of military and civilian organizations to support this effort.” (U.S. Central Intelligence Agency, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January Through 30 June 1998,” p. 4.)

⁵³ According to one assessment, by 2003, Iran had “several foreign weapons designs, had refined those designs to develop its own, and had settled on a single frozen design as the basis for its initial weapons production.” (Aaron Arnold, Matthew Bunn, and Caitlin Chase, et al., *The Iran Nuclear Archive: Impressions and Implications* (Cambridge: Belfer Center for Science and International Affairs, Harvard Kennedy School, April 2019), p. 7.)

⁵⁴ U.S. Central Intelligence Agency, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January Through 30 June 1998,” p. 3.

expand its chemical warfare production infrastructure and munitions arsenal” as part of its “long-term goal of independent production” of CW.⁵⁵ On BW, the Defense Department stated that Iran’s BW program was in the R&D stage and that “the pace of the program probably has increased because of the 1995 revelations about the scale of Iraqi efforts prior to the [1991] Gulf War.”⁵⁶ The CIA also added that Iran possibly had a “limited capability for BW deployment.”⁵⁷ In parallel with its suspected offensive CBW efforts, Iran continued to develop and produce CBW defense equipment and conduct CBW defense exercises.⁵⁸ Like in the previous chapter, it is difficult to assess the actual status of Iran’s suspected CBW efforts before the 2001-2003 pattern break, and as we will see later, after the 2003 Iraq War U.S./Western claims about Iranian CBW intentions, activities, and capabilities changed drastically.

Table 4: Iran’s Initial Pattern for Strategic Weapon Acquisition, Threat, and Use

Element of Pattern	Key Organizations
Military Strategy	
Retaliatory deterrence, including retaliatory operations	IRGC Air Force, IRIAF
Asymmetric warfighting	IRGC Navy
Military exercises to enhance readiness, deterrence, and asymmetric capabilities	IRGC, Artesh
Acquisition	
Ballistic missiles, including both liquid- and solid-propellant MRBMs	MODAFL
ASCMs, initial efforts on LACMs	MODAFL
Long-range and medium-range artillery rockets	MODAFL
UAVs	MODAFL
Dedicated nuclear weapons program (AMAD Plan)	MODAFL, AEOI
Suspected CBW programs	MODAFL

Pattern Break: Threats and Opportunities for Iran, 2001-2003

As described previously, there are three main elements to the pattern break on which this chapter is focused. These are (1) U.S. policies and actions after the September 11 attacks; (2) public exposure of Iran’s secret nuclear activities; and (3) the dramatic increase of U.S. military forces in the region. Importantly, with this pattern break, Iran saw itself as being in the “crosshairs” of the United States for its suspected WMD programs and support for terrorism. More broadly, Iranian leaders perceived a mix of both threats and opportunities to which to respond, similar to how they viewed the 1990-1991 Persian Gulf crisis and war as “both an opportunity and a challenge” due to the opportunity

⁵⁵ Office of the Secretary of Defense, *Proliferation: Threat and Response*, November 1997.

⁵⁶ Office of the Secretary of Defense, *Proliferation: Threat and Response*, November 1997.

⁵⁷ U.S. Central Intelligence Agency, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January Through 30 June 1998,” p. 3.

⁵⁸ “yegan-ha-ye sherkat-konandeh dar tamrin-e zolfaghar be tajhizat-e defa-e shimiai mojahaz shodand” [participating units in zolfaghar exercise equipped with chemical defense equipment], *Islamic Republic News Agency (IRNA)*, 2 Mehr 1376 [September 24, 1997], <https://www.irna.ir/news/5768466/>.

created by Iraq's decreased military capabilities and the challenge of a permanent U.S. military presence in the region.⁵⁹

U.S. Foreign Policies and Actions in Response to 9/11

As the first main element of the pattern break, the U.S. military and diplomatic response to the 9/11 attacks created both threats and opportunities for Iranian leaders in three main areas: The U.S. invasion of Afghanistan, U.S. hostile rhetoric towards Iran, and the 2003 Iraq War.

First, the U.S. invasion of Afghanistan in 2001—as part of the new “Global War on Terror”—brought the potential threat of U.S. military forces close to Iran's eastern border. After the 9/11 attacks, with U.S. foreign and security policy focused on confronting terrorist groups and the countries that supported them, leaders in Tehran could see the potential for Iran to become a U.S. military target. U.S. statements and reports at the time helped create this threat perception in Tehran. These included President George W. Bush's September 2001 statement that “any nation that continues to harbor or support terrorism will be regarded by the United States as a hostile regime”⁶⁰ and Iran's inclusion in the State Department's annual “Patterns of Global Terrorism” report as “the most active state sponsor of terrorism.”⁶¹ Reflecting this threat perception, in December 2001, IRGC deputy commander Mohammad Bagher Zolghadr stated that a U.S. goal of the invasion of Afghanistan was to narrow the “ring of encirclement” (*halqeh-ye mohasereh*) around Iran and to establish a base in Afghanistan for directing conspiracies against Tehran.⁶²

At the same time, however, U.S. actions also created benefits and potential opportunities for Iran. These included the removal of the Taliban and a “zone of possible agreement” for cooperation between Tehran and Washington.⁶³ For example, Iran offered to allow the U.S.-led coalition access to its airfields and ports to support the Afghanistan invasion, to help downed coalition pilots in Iran, and to share intelligence on the Taliban. U.S. and Iranian officials also held working-level discussions on forming a new government in Afghanistan.⁶⁴

Second, there was an uptick in U.S. hostile rhetoric towards Iran in 2002-2003—most prominently President Bush's 2002 “Axis of Evil” speech, in which he included Iran, along with Iraq and North Korea, as a member of the “Axis of Evil”—states that pursued WMD and supported terrorist groups, and thus posed “a grave and growing danger.”⁶⁵ According to Ali Fathollah-Nejad, the

⁵⁹ David Crist, *The Twilight War: The Secret History of America's Thirty-Year Conflict With Iran* (New York: Penguin Books, 2012), pp. 385-386.

⁶⁰ President George W. Bush, “Address to a Joint Session of Congress and the American People,” September 20, 2001, <https://georgewbush-whitehouse.archives.gov/news/releases/2001/09/20010920-8.html>.

⁶¹ U.S. Department of State, “Patterns of Global Terrorism: 2000,” April 30, 2001.

⁶² “janeshin-e farmandeh-ye sepah: yeki az ahdaf-e Amrika ijad-e payegah-e jasusi alayieh Iran” [IRGC deputy commander: one of the American goals is creating spy base against Iran], *Islamic Republic News Agency (IRNA)*, 6 Dey 1380 [December 27, 2001], <https://www.irna.ir/news/5619833/>.

⁶³ Ariane M. Tabatabai, *No Conquest, No Defeat: Iran's National Security Strategy* (Oxford: Oxford University Press, 2020), pp. 271-272.

⁶⁴ Crist, *The Twilight War*, p. 432; Kenneth M. Pollack, *The Persian Puzzle: The Conflict Between Iran and America* (New York: Random House, 2004), p. 346; John H. Richardson, “The Secret History of the Impending War with Iran That the White House Doesn't Want You to Know,” *Esquire*, October 18, 2007, <https://www.esquire.com/news-politics/a3574/iranbriefing1107/>.

⁶⁵ President George W. Bush, “State of the Union Address,” January 29, 2002, <https://georgewbush-whitehouse.archives.gov/news/releases/2002/01/20020129-11.html>.

speech “abruptly ended a decade of relative calm in Iran’s external relations”⁶⁶ and Hamid Dabashi notes that it was viewed in Tehran as an “open declaration of war against Iran.”⁶⁷ Iranian leaders were reportedly shocked and angered by Bush’s speech, including Iran’s inclusion with its long-time rival Iraq as a member of the “Axis of Evil.”⁶⁸ In response, former Iranian President Rafsanjani warned of U.S. “evil intentions”⁶⁹ and Supreme Leader Khamenei stated that Iran was “proud to be the target of the hate and anger of the world’s greatest evil.”⁷⁰

According to longtime Iranian diplomat Seyed Hossein Mousavian, Bush’s inclusion of Iran in the “axis of evil” “transformed the conflict between the US and Iran into a clash between good and evil, which logically could only end with the annihilation of one side by the other.” It also “gave Iranian radicalism the upper hand in both domestic politics and in Iran’s foreign policy.”⁷¹ According to Ariane Tabatabai, the Bush administration’s hostility towards Iran “served as a reminder to the regime’s leadership that the United States could not be trusted as its administration inevitably sought regime change implicitly or explicitly.”⁷² Bush’s speech created concerns in Tehran that Iran might become a U.S. military target, reflected in Khamenei’s assertion that the speech “could put Iran in the firing line of the U.S. war on terror.”⁷³ These concerns only increased with the Bush administration’s September 2002 National Security Strategy, which highlighted the threat of “rogue states” such as Iran and stated that the United States would, “if necessary, act preemptively” to counter emerging threats from its adversaries.⁷⁴ In these ways, the Bush administration’s “hostile rhetoric created the perception in Iran that a U.S. attack was imminent.”⁷⁵

Third, and perhaps most importantly, the 2002 leadup to, and 2003 prosecution of, the Iraq War generated in Tehran a perception of high threat and vulnerability and created fears that Iran was “next in line.” Indeed, in the period prior to the war in 2002, Iranian leaders “feared that a successful U.S. conquest of Iraq would make Iran an indefensible target in the Bush administration’s plan to transform the Middle East.”⁷⁶ According to one account, “the prospect of a U.S. invasion unsettled the supreme leader,”⁷⁷ and in August 2002, President Khatami conveyed his concerns about U.S. invasion preparations, noting that “We will do our best to ensure that there is no misplaced invasion, aggression, or attack on any country, including our own country.”⁷⁸ Iran’s

⁶⁶ Fathollah-Nejad, *Iran in an Emerging New World Order*, p. 261.

⁶⁷ Hamid Dabashi, *Iran: A People Interrupted* (New York: New Press, 2007), p. 202.

⁶⁸ Trita Parsi, *Treacherous Alliance: The Secret Dealings of Israel, Iran, and the United States* (New Haven: Yale University Press, 2007), pp. 235-236; Crist, *The Twilight War*, p. 441.

⁶⁹ “Iran: Rafsanjani calls on US to abandon its ‘evil intentions,’” *Voice of the Islamic Republic of Iran*, July 19, 2002, BBC Monitoring, July 20, 2002.

⁷⁰ Pollack, *The Persian Puzzle*, p. 352.

⁷¹ Seyed Hossein Mousavian with Shahir ShahidSaless, *Iran and the United States: An Insider’s View on the Failed Past and the Road to Peace* (New York: Bloomsbury, 2014), Kindle edition, locations 3137, 3923, 5445.

⁷² Tabatabai, *No Conquest, No Defeat*, p. 274.

⁷³ Ray Takeyh, *Guardians of the Revolution: Iran and the World in the Age of the Ayatollahs* (Oxford: Oxford University Press, 2009), p. 216.

⁷⁴ The White House, “The National Security Strategy of the United States of America,” September 2002, <https://2009-2017.state.gov/documents/organization/63562.pdf>, pp. 13-15.

⁷⁵ Afshon Ostovar, *Vanguard of the Imam: Religion, Politics, and Iran’s Revolutionary Guards* (Oxford: Oxford University Press, 2016), p. 160.

⁷⁶ Parsi, *Treacherous Alliance*, p. 240.

⁷⁷ Crist, *The Twilight War*, pp. 465-466.

⁷⁸ “matn-e kamel-e mosahebeh-ye hojatoleslam-val-moslemin-e Sayyed Mohammad Khatami, rais-e jomhur, ba khabar-negaran” [complete text of interview of hojatoleslam-val-moslemin Sayyed Mohammad Khatami, president, with

Supreme Council for National Security (SCNS) also held numerous meetings in late 2002 to discuss Iran's options for what appeared to be an increasingly likely U.S. invasion of Iraq.⁷⁹

Iranian officials also issued deterrent statements for Washington's consumption. According to Afshon Ostovar, "IRGC commanders made clear that [Iran] would target American interests and troops in the region in response to any aggression against Iran."⁸⁰ For instance, IRGC deputy commander Zolghadr warned that Iran's military was prepared to defend the country and convert any foreign threats and actions to Iran's advantage. He further emphasized that the United States was aware that if it went to war with Iran, Iran's military had the capability to inflict a "heavy blow" (*zarbeh-ye sangin*) on the Americans.⁸¹

The threat perceptions of Iran's leaders only increased with their shock at the speed and dominance of the U.S.-led coalition's rapid defeat of Iraq in early 2003.⁸² According to David Crist, "the fact that the American military achieved in three weeks what Iran failed to do in eight years of war scared the supreme leader."⁸³ Moreover, with Iraq's defeat, Iran now found itself surrounded by U.S. military forces. Indeed, with U.S. forces in Iraq and Afghanistan on its west and east, in Azerbaijan and central Asian states to the north, and across the Persian Gulf in the south, "Tehran grew to feel increasingly encircled."⁸⁴ This massive U.S. military presence, combined with the fact that U.S. justifications for its war against Iraq—WMD programs and links to terrorism—were consistent with the allegations Washington leveled against Iran, many Iranian officials "were convinced that Iran was next."⁸⁵

But despite the clear threat, the 2003 Iraq War also created limited benefits and opportunities for Iran. The war toppled Saddam—the leader who had started a brutal eight-year war with Iran—destroyed Iraq's military capability to invade Iran. It also removed the perceived threat of suspected (later discovered as non-existent) Iraqi WMD programs and provided Iran with the opportunity to increase its influence in Iraq. In addition, within Iran, Tehran's hardliners and the IRGC "benefited greatly" from the U.S. invasion of Iraq as well as the other U.S. policies and actions noted above because U.S. policies and actions perceived as hostile to Iran "encouraged a revival of hardline power in Iran" and created a "boon" to the IRGC.⁸⁶ Importantly, this enabled the rise of the IRGC as the "most important military-security organ capable of defending the country as well as the regime against external and internal threats."⁸⁷ However, in this case, the threats in 2003 clearly outweighed the benefits and opportunities for Iran—an assessment that was reflected in the view of

reporters], *Iranian Students' News Agency (ISNA)*, 6 Shahrivar 1381 [August 28, 2002], <https://www.isna.ir/news/8106-01846/>.

⁷⁹ Crist, *The Twilight War*, p. 465-466.

⁸⁰ Ostovar, *Vanguard of the Imam*, p. 171.

⁸¹ "Janeshin-e farmandeh-ye kol-e sepah-e pasdaran: bayad baraye moghabeleh ba har tahdidi amadeh" [IRGC deputy commander: must be ready to face any threat], *Islamic Republic News Agency (IRNA)*, 29 Mehr 1381 [October 21, 2002], <https://www.irna.ir/news/5569755/>.

⁸² Takeyh, *Guardians of the Revolution*, p. 216.

⁸³ Crist, *The Twilight War*, p. 475.

⁸⁴ Ariane M. Tabatabai, Nathan Chandler, Bryan Frederick, and Jennifer Kavanagh, *Iran's Military Interventions: Patterns, Drivers, and Signposts* (Santa Monica: RAND Corporation, 2021), p. 42.

⁸⁵ Takeyh, *Guardians of the Revolution*, p. 217.

⁸⁶ Ostovar, *Vanguard of the Imam*, pp. 160, 169.

⁸⁷ Fathollah-Nejad, *Iran in an Emerging New World Order*, p. 260.

former president Rafsanjani that “the American presence in the Middle East is worse than the weapons of mass destruction being in Saddam's hands.”⁸⁸

Public Exposure of Iran's Secret Nuclear Activities

As the second main element of the pattern break, the 2002-2003 public revelations of Iran's secret nuclear activities and resulting actions by the International Atomic Energy Agency (IAEA) served to increase Tehran's perceptions of threat and vulnerability. After public disclosures in 2002,⁸⁹ the U.S. intelligence community and IAEA confirmed that Iran was conducting secret nuclear activities at two undeclared sites, the Natanz uranium enrichment plant and the Arak heavy water production plant.⁹⁰ Iran's activities at these two sites were of concern due their potential role in enabling Iran's suspected pursuit of HEU (Natanz) and plutonium (Arak) for nuclear weapons.⁹¹

These disclosures led the IAEA Board of Governors in mid-2003 to address Iran's case for the first time and in September 2003 to formally condemn Iran, actions that reportedly created a sense of alarm in Tehran. To Iran's leaders, there was now a possibility that Iran's case could be sent to the UN Security Council for action, which could result in a decision to use military force—a scenario similar to what led to the 2003 Iraq War.⁹² According to then-SCNS secretary Hassan Rouhani, “it was then that we felt a threat, a sense of danger in the country. We thought that we might be facing a plot against Iran.” Ali Akbar Salehi, Iran's representative to the IAEA, was reportedly “genuinely frightened about the possibility of an American invasion.”⁹³ In sum, according to David Patrikarakos, “the Iranians were scared”; in Tehran's view, these IAEA actions could give the United States a false pretext to make Iran its “next target.”⁹⁴

Dramatic Increase of U.S. Military Presence in Region

⁸⁸ Brian Murphy, “Iran's Top Leader: U.S. Seeks Oil,” *The Edwardsville Intelligencer*, February 7, 2003, <https://www.theintelligencer.com/news/article/Iran-s-Top-Leader-U-S-Seeks-Oil-10499639.php>.

⁸⁹ These included disclosures by the Iranian opposition group National Council of Resistance of Iran (NCRI) and analysis by the Institute for Science and International Security (ISIS). (“Iran and Nuclear Weapons,” C-SPAN, August 14, 2002, <https://www.c-span.org/video/?172005-1/iran-nuclear-weapons>; David Albright and Corey Hinderstein, “Iran Building Nuclear Fuel Cycle Facilities: International Transparency Needed,” ISIS Issue Brief, Institute for Science and International Security (ISIS), December 12, 2002, <https://isis-online.org/publications/iran/iranimages.html>.)

⁹⁰ In addition, in May 2003, Iran notified the IAEA that it planned to construct a heavy water research reactor at Arak, related to the heavy water production plant that was disclosed the previous year, and also of concern due to its potential role in enabling Iran to produce plutonium. (IAEA Board of Governors, “Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran,” GOV/2003/40, June 6, 2003, <https://www.iaea.org/sites/default/files/gov2003-40.pdf>, p. 4.)

⁹¹ Pollack, *The Persian Puzzle*, p. 361; David Patrikarakos, *Nuclear Iran: The Birth of an Atomic State* (London: I.B. Taurus, 2021), pp. 175-179. In addition, the IAEA found that Iran had “enriched uranium and separated plutonium in undeclared facilities, in the absence of IAEA safeguards.” (IAEA Board of Governors, “Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran,” GOV/2003/81, November 26, 2003, <https://www.iaea.org/sites/default/files/gov2003-81.pdf>, p. 2.)

⁹² Document 45. Iranian Supreme National Security Council, Speech, Hassan Rouhani, “Beyond the Challenges Facing Iran and IAEA Concerning the Nuclear Dossier,” circa September 2005, in Malcolm Byrne and Kian Byrne, *Worlds Apart: A Documentary History of US-Iranian Relations, 1978-2018* (Cambridge: Cambridge University Press, 2022), pp. 203-205; Patrikarakos, *Nuclear Iran*, pp. 181, 188, 192.

⁹³ Patrikarakos, *Nuclear Iran*, pp. 185-186.

⁹⁴ Patrikarakos, *Nuclear Iran*, p. 188.

The third main element of the pattern break in question was the massive uptick of U.S. military presence in the region. According to the U.S. Defense Intelligence Agency, this “created a sense of encirclement in Tehran, which continued to believe that Washington ultimately sought to overthrow the regime.”⁹⁵ In Tehran’s view, Washington now had both the requisite capabilities and intentions to invade Iran. These perceived threats were compounded by the U.S. military’s longstanding presence in the region, including its security relationships with Turkey and GCC states. According to Tabatabai, with the increased U.S. military presence in the region, Tehran “was nervous about the prospects of finding itself on Washington’s list of potential targets for regime change.”⁹⁶

In sum, the three elements of the 2001-2003 pattern break and resulting massive changes to Iran’s security environment left Iranian leaders in 2003 with severe perceptions of threat and vulnerability that outweighed the limited benefits and opportunities they provided. In sum, Tehran in 2003 viewed itself as squarely in the “crosshairs” of a possible U.S. military invasion, a scenario for which Washington, in Tehran’s view, now had both the capabilities and intentions to execute.

Iran’s Responses and New Pattern: Addressing Threats and Exploiting Opportunities

Iran responded to the elements of the 2001-2003 pattern break with efforts to both alleviate its perceived threats and take advantage of perceived opportunities. These included the implementation policies and actions intended to prevent military attack against Iran, advance its security interests, and where possible to convert threats into opportunities. As described in detail below, Iran’s responses to the pattern break can be divided into two main categories. The first are Iran’s attempts to accommodate in order to reduce threats it perceived, and the second are Iran’s parallel responses in terms of its military strategy and weapons acquisition efforts, which formed the basis for its new pattern for strategic weapons acquisition, threat, and use for the rest of the 2000s.

Iranian Attempts to Accommodate

As the first element of its response to the pattern break, Iran attempted accommodation with the United States and West in two areas in an effort to de-escalate the situation and alleviate its severe threat perceptions. The first of these was a “preventive diplomacy” approach⁹⁷ in which Iran attempted to talk, cooperate, and negotiate with the United States on Afghanistan and Iraq and also reportedly conveyed a “grand bargain” proposal. In addition to its offers to cooperate on Afghanistan as noted above, Iran also offered cooperation to Washington in the runup to the Iraq War, including offering intelligence on Iraq and the use of Iranian airspace to strike Iraq. Tehran also offered to normalize relations with the United States and discuss the two countries’ problems.⁹⁸

Later, in May 2003, in an unsigned letter faxed to Washington by the Swiss ambassador to Iran, Tehran proposed a roadmap to resolve all issues between the two countries—what has been called Iran’s “grand bargain” proposal. The proposed topics for negotiation reportedly included, for Iran: End support to Palestinian militant groups, pressure Lebanese Hezbollah to become a political

⁹⁵ U.S. Defense Intelligence Agency, “Iran Military Power: Ensuring Regime Survival and Securing Regional Dominance,” 2019, https://www.dia.mil/Portals/110/Images/News/Military_Powers_Publications/Iran_Military_Power_LR.pdf, p. 9.

⁹⁶ Tabatabai, *No Conquest, No Defeat*, p. 254.

⁹⁷ Afrasiabi and Maleki, “Iran’s Foreign Policy After 11 September,” p. 57.

⁹⁸ Crist, *The Twilight War*, pp. 456-457.

organization, accept a two-state approach to the Israel-Palestinian issue, help stabilize Iraq following the U.S. invasion, and make Iran's nuclear program more transparent. In return, Iran proposed that Washington halt its "hostile behavior," remove sanctions, allow Iran access to peaceful nuclear, biological, and chemical technology, and recognize Iran's legitimate security interests and appropriate defense capability, among other items.⁹⁹ Washington rejected the proposal.

The second element of Iran's response was in the nuclear arena. Iran showed its willingness to negotiate nuclear limits with the IAEA and Europeans and also secretly halted its nuclear weapons program, the AMAD Plan. According to Kenneth Pollack and Ray Takeyh, in 2003 Tehran conducted serious negotiations and "shut down its weaponization program" when it "feared that the United States planned to invade Iran after Afghanistan and Iraq."¹⁰⁰ In the first area—agreeing to limits—in late 2003, driven by the crisis of IAEA actions and after internal debate among its leaders,¹⁰¹ Iran agreed to temporarily suspend its uranium enrichment program and to sign the Additional Protocol that allowed increased IAEA access to its nuclear facilities. According to one view, "when it became clear that the nuclear program was making Iran less rather than more secure, with crippling sanctions imposed on the country and the looming threat of another war, Tehran came to the negotiating table prepared to discuss halting some of its nuclear activities."¹⁰²

As a second—albeit secret—response to the nuclear crisis, in fall 2003, Iran reportedly halted its nuclear weapons program, the AMAD Plan. It is not entirely clear why this decision was taken, and different observers have proposed different rationales. According to the U.S. intelligence community, for example, Iran did so mainly in response to "increasing international scrutiny and pressure resulting from exposure of Iran's previously undeclared nuclear work."¹⁰³ In contrast, the IAEA stated that senior Iranian leaders issued a "halt order" to the program in late 2003 "rather abruptly" due to "growing concerns about the international security situation in Iraq and neighboring countries at that time."¹⁰⁴ A number of outside experts, meanwhile, find that Iranian leaders' fears of a U.S. military attack was a key reason for the halt.¹⁰⁵ However, whatever the precise

⁹⁹ Document 42. Embassy of Switzerland, Memorandum, Tim Guldemann for the State Department, attaching "Roadmap" [Purported to be from the Iranian Government], May 4, 2003, in Byrne and Byrne, *Worlds Apart*, pp. 189-194; copy of letter from Tim Guldemann, Swiss ambassador to Iran, to the U.S. State Department, May 4, 2003, *Washington Post*, http://www.washingtonpost.com/wp-srv/world/documents/us_iran_1roadmap.pdf; copy of the final draft of the Iranian proposal, undated, *New York Times*, http://www.nytimes.com/packages/pdf/opinion/20070429_iran-memo-expurgated.pdf; Mousavian with ShahidSaless, *Iran and the United States*, Kindle edition, locations 4027-4039; Patrikarakos, *Nuclear Iran*, p. 312; Crist, *The Twilight War*, pp. 475-476; Parsi, *Treacherous Alliance*, pp. 243-249, 341-342; Ostovar, *Vanguard of the Imam*, p. 164.

¹⁰⁰ Kenneth M. Pollack and Ray Takeyh, "Doubling Down on Iran," *Washington Quarterly*, Vol. 34, No. 4 (2011), p. 20.

¹⁰¹ Internally, there reportedly was a broad range of differing views among Iranian leaders on how to respond to the 2003 nuclear crisis, from conciliatory to confrontational as well as calls to seek a grand bargain. (Mousavian with ShahidSaless, *Iran and the United States*, pp. 80-86.)

¹⁰² Ariane M. Tabatabai and Annie Tracy Samuel, "What the Iran-Iraq War Tells Us about the Future of the Iran Nuclear Deal," *International Security*, Vol. 42, No. 1 (Summer 2017), p. 157.

¹⁰³ U.S. National Intelligence Council, "Iran: Nuclear Intentions and Capabilities," National Intelligence Estimate, November 2007, https://www.dni.gov/files/documents/Newsroom/Reports%20and%20Pubs/20071203_release.pdf.

¹⁰⁴ IAEA Board of Governors, "Annex: Possible Military Dimensions to Iran's Nuclear Programme," in "Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran," GOV/2011/65, November 8, 2011, p. 6.

¹⁰⁵ According to David Crist, "Iran halted its nuclear weapons program out of fear of provoking an American attack." (Crist, *The Twilight War*, p. 475). Also see: Michael Eisenstadt, "Iran's Nuclear Hedging Strategy: Shaping the Islamic Republic's Proliferation Calculus," Policy Focus 178, Washington Institute for Near East Policy, November 29, 2022,

reason, despite the halt, Iran was “keeping open the option to develop nuclear weapons,”¹⁰⁶ had reportedly documented its work under the AMAD Plan, and later resumed work that was “highly relevant to a nuclear weapons program,” even if it was not an actual effort to produce a nuclear weapon.¹⁰⁷

Iran’s Continued Emphasis on Deterrence and Asymmetric Strategies

In parallel with its pursuit of accommodation to neutralize its perceived threats, Iran continued its efforts during and after the pattern break to enhance its deterrence and asymmetric strategies. As noted above, during 2001-2003, Iranian leaders perceived the threat of possible U.S. military invasion, and in general, they viewed “extra-regional” (*fara-mantegheb-i*) countries—the United States and Israel—as their main military threats. For instance, IRGC commander Yahya Rahim Safavi in 2003-2004 described the United States and Israel as Iran’s main threats¹⁰⁸ and labeled them as their own “axis of evil” (*mehvar-e shararat*).¹⁰⁹ Later, in 2006, Safavi stated that Iran’s military doctrine focused on the main threats from countries outside the region—the United States and the Israel—and that Iran did not view its neighbors as threats.¹¹⁰

Iran’s Increasing Strategic Confidence: 2004-2005

Importantly, by 2004-2005, and in contrast to their severe perceptions of threat and vulnerability in 2003, Iranian leaders saw a sharp change to the country’s security environment that resulted in their an increased strategic confidence and decreased sense of vulnerability. This shift in viewpoint was due mainly to Tehran’s perception of the United States as being “bogged down” in Iraq.¹¹¹ According to Crist, by 2004, “Iran believed it had the upper hand” and by 2006, “Iran no longer feared an American invasion.”¹¹² In 2006, the U.S. Director of National Intelligence stated that “the regime today is more confident and assertive than it has been since the early days of the Islamic Republic.”¹¹³ As a reflection of this new confidence, in 2006, defense minister Mostafa Mohammad

<https://www.washingtoninstitute.org/policy-analysis/irans-nuclear-hedging-strategy-shaping-islamic-republics-proliferation-calculus>, pp. 1, 4.

¹⁰⁶ U.S. National Intelligence Council, “Iran: Nuclear Intentions and Capabilities,” National Intelligence Estimate, November 2007, https://www.dni.gov/files/documents/Newsroom/Reports%20and%20Pubs/20071203_release.pdf. According to this assessment, Iran was “continuing to develop a range of technical capabilities that could be applied to producing nuclear weapons.”

¹⁰⁷ IAEA Board of Governors, “Annex: Possible Military Dimensions to Iran’s Nuclear Programme,” in “Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran,” GOV/2011/65, November 8, 2011, p. 6.

¹⁰⁸ “sardar Safavi: doshmanan-e asli-e keshvar va nezam-e jomhuri-e eslami, Amrika va rezhim-e sehionisti hasted” [general Safavi: the primary enemies of the country and system of the Islamic republic are America and the Zionist regime], *Mehr News*, 26 Azar 1382 [December 17, 2003], <https://www.mehrnews.com/news/45345/>.

¹⁰⁹ “sardar Safavi dar ejtema-e 20 hezar nafari-e basijian-e Ahvaz: feshar-ha-ye siyasi-e ghodrat-ha-ye fara-mantegheb-i melat-e bozorg-e Iran ra az masir-e roshd va toseh faz nakhahad dasht” [general Safavi in a gathering of 20,000 basij of Ahvaz: political pressures and extra-regional powers will not stop the great nation of Iran from the path of growth and development], *Mehr News*, 6 Azar 1383 [November 26, 2004], <https://www.mehrnews.com/news/133646/>.

¹¹⁰ *Vision of the Islamic Republic of Iran Network* 2, November 12, 2006, in BBC Monitoring, November 13, 2006.

¹¹¹ Steven R. Ward, “The Continuing Evolution of Iran’s Military Doctrine,” *Middle East Journal*, Vol. 59, No. 4 (Autumn 2005), pp. 564-565.

¹¹² Crist, *The Twilight War*, pp. 483, 494, 506.

¹¹³ Office of the Director of National Intelligence, “Annual Threat Assessment of the Director of National Intelligence for the Senate Select Committee on Intelligence,” February 2, 2006, https://www.dni.gov/files/documents/Newsroom/Testimonies/20060202_testimony.pdf.

Najjar stated that the United States was “stuck” (*zamin-gir*) in Iraq and there was no possibility that it could threaten Iran.¹¹⁴ By 2007, Western experts viewed Iran as a “regional power,” a “rising power,” and as “the most powerful state in the Persian Gulf”¹¹⁵—quite a shift from its vulnerable status just a few years prior.

As a corollary to its increased confidence and decreased sense of vulnerability, Iranian military leaders also began to view the U.S. military presence “less as an encircling threat and more as a vulnerability to exploit,”¹¹⁶ especially with Iran’s ever-increasing ballistic missile capabilities. Indeed, the close presence of U.S. military forces, combined with Iran’s increasing military capabilities, enabled Iranian officials to, in their view, convert this longstanding threat into an opportunity. The large U.S. military presence, in Iran’s view, was now an opportunity as well as a threat, for its “close proximity” enabled Iran to directly target U.S. interests if a conflict broke out¹¹⁷ and “made U.S. forces vulnerable to Iranian retaliation.”¹¹⁸ In 2007, Safavi—now the Supreme Leader’s senior military advisor—stated that although Washington thought it would encircle Iran with its military occupation of Afghanistan and Iraq, the 200,000 U.S. troops in the region were now in Iran’s “crosshairs” (*tir-ras*). He added that “when the Americans were on the other side of the oceans, they were not accessible to us, but now they are close to us and we can easily strike them.”¹¹⁹ Echoing Safavi’s comments, in 2008, IRGC commander Mohammad Ali Jafari noted that U.S. forces were in the “direct crosshairs” (*tir-ras-e mostaghim*) of Iran’s long-range and medium-range missiles, rockets, and artillery. He stated that the U.S. encirclement of Iran was not a strength for Washington but a point of weakness and vulnerability.¹²⁰ Thus, in the view of Tehran, not only was Washington now unlikely to invade Iran, but U.S. military forces were highly vulnerable to attack from Iran’s increasing military capabilities.

As these findings suggest, Iran’s approach to deterring and, if needed, countering an attack or invasion continued to focus on retaliatory deterrence and asymmetric defense. In evolving and enhancing its deterrence and asymmetric strategies, however, Iran now focused in particular on the need to deter and counter technologically-superior adversaries—that is, the United States and

¹¹⁴ “vazir-e defa dar konferans-e khabari (ejmali): har guneh-ye tahdid va hamleh ra dar notfeh-ye khafeh mikonim / ravesh-e razm-e Iran ghey-e klasik va na-motegharen ast” [defense minister in press conference (summary): we smother any threat and attack in the bud / Iran’s fighting method is non-classical and asymmetric], *Mehr News*, 13 Shahrivar 1385 [September 4, 2006], <https://www.mehrnews.com/news/375911/>.

¹¹⁵ Ray Takeyh, “Time for Detente with Iran,” *Foreign Affairs*, Vol. 86, No. 2 (March-April 2007), p. 21.

¹¹⁶ Ward, “The Continuing Evolution of Iran’s Military Doctrine,” pp. 564-565.

¹¹⁷ Tabatabai, *No Conquest, No Defeat*, p. 254.

¹¹⁸ Ostovar, *Vanguard of the Imam*, p. 170.

¹¹⁹ “sarlashgar Safavi dar gotegu ba mehr: taghir-e sakhtar-e defai-e Iran baraye bartari dar jang-ha-ye fara-mantegheh-i taghir kardeh ast / Amrika ghader be moghaleh ba mushak-ha-ye anbu-e Iran nist / enghelab-e moghiat-e zheopolitik-e Iran ra afzayesh dad / talkh-tarin khatereh: 18 tir va zelzele-ye Bam / sharin-tarin khatereh: piruzi-e Hezbollah-e Lobnan” [general Safavi in discussion with mehr: change of Iran’s defense structure for superiority in trans-regional wars / America is unable to counter Iran’s massive missiles / the revolution increased Iran’s geopolitical position / the bitterest memory: 18 tir and the Bam earthquake / the sweetest memory: victory of Lebanon’s Hezbollah], *Mehr News*, 2 Mehr 1386 [September 24, 2007], <https://www.mehrnews.com/news/557531/>.

¹²⁰ “mosahebeh-ye sarlashgar Jafari ba al-jazira: Amrika dar tir-ras-e mast, hamaghat nakonad / Bush dar pey-e jodai-e mantegheh az Iran ast” [interview with general Jafari with Al Jazeera: America is in our crosshairs, don’t be stupid / Bush is seeking the separation of the region from Iran], *Mehr News*, 7 Bahman 1386 [January 27, 2008], <https://www.mehrnews.com/news/627720/>.

Israel—driven in large part by “the supremacy of U.S. conventional power” that Iranian leaders had witnessed with the 1991 Gulf War and 2003 Iraq War, among other examples.¹²¹

Deterrence Strategy

During and after the 2001-2003 pattern break, Iran continued its efforts to improve its deterrence power (*ghodrat-e bazdarandegi*), relying mainly on the IRGC and its ballistic missile capabilities. Starting in the mid-2000s, Iran’s deterrence approach was under the general framework of “all-dimensional deterrence” (*bazdarandegi-e hameh-janebeh*), which aimed to deter the full spectrum of threats to Iran.¹²² In 2007, the Armed Forces General Staff (AFGS)—Iran’s highest military organization¹²³—defined all-dimensional deterrence in this way: “maximum use of the country’s potential and actual capabilities in all components of national power, with the view of creating fear in the enemy and preventing war, its development and expansion, and confronting any kind of enemy threat.”¹²⁴

Under this framework, Iran’s deterrence strategy was still based mainly on the threat of retaliation (*moghabeleh be mesl*),¹²⁵ especially against the U.S. military and Israel. In 2008, IRGC official Ahmad Mohammadzadeh stated that Iran had three important deterrent factors (*avamel-e bazdarandegi*) against U.S. threats: Security of energy and oil flows in the Persian Gulf and Sea of Oman, the presence of 150,000 U.S. troops in the region, and the vulnerability of Israel.¹²⁶ In addition, as described below, Iran’s asymmetric strategy also aimed to create an element of deterrence, apparently similar to the Western concept of “deterrence by denial,”¹²⁷ to bolster Iran’s overall deterrence power. In 2007, the AFGS defined deterrence in this way, which appeared to capture the roles of both retaliation and denial in Iran’s deterrence strategy: “Deterrence is the complex of strategic and/or tactical measures and actions, and defense capabilities, that instills fear in the enemy and prevents it from starting war, expanding the battlefield, and increasing the level of war.”¹²⁸ This definition, as well as the AFGS

¹²¹ Matthew McInnis, “The Strategic Foundations of Iran’s Military Doctrine,” *Gulf Security after 2020*, International Institute for Strategic Studies, December 19, 2017, pp. 2-3.

¹²² According to Hamidreza Azizi, Iran’s various deterrence strategies, doctrines, and approaches were “defined within the framework” of all-dimensional deterrence. (Hamidreza Azizi, “The Concept of ‘Forward Defense’: How Has the Syrian Crisis Shaped the Evolution of Iran’s Military Strategy?” Syria Transition Challenges Project, Geneva Centre for Security Policy, February 2021, <https://dam.gcsp.ch/files/doc/iran-forward-defence-strategy-en>, p. 7.)

¹²³ U.S. Defense Intelligence Agency, “Iran Military Power,” 2019, p. 25.

¹²⁴ AFGS Department of Plans and Programs (*moavenat-e tarh va barnameli*), 9 Dey 1386 [December 30, 2007], cited in Mohammad Hossein Ghanbari Jahromi, “farayand-e tarahi-e rahnameh-ye bazdarandegi-e hameh-janebeh-ye J I Iran dar cheshm-andaz-e bist-saleh-ye keshvar” [process of design of doctrine of all-dimensional deterrence of the Islamic Republic of Iran in the country’s 20-year vision], *Defense Strategy (rabbord-e defai)*, Vol. 13, No. 2, Tir 1394 [June-July 2015], p. 7.

¹²⁵ For example, see: “sardar Jazayeri dar goftegu ba mehr: vakonesh-e Iran be tahdid-e ehtemali az khak-e har keshvar moghabeleh be mesl ast” [general Jazayeri in discussion with mehr: Iran’s response to the possible threat from the territory of any country is retaliation], *Mehr News*, 29 Aban 1387 [November 19, 2008], <https://www.mehrnews.com/news/785709/>.

¹²⁶ “taghir-e manabe-e amuzeshi ba ruikard-e moghabeleh ba doshman-e na-hamtaraz” [changing training resources with the approach of confronting an uneven enemy], *Basirat*, 3 Azar 1387 [November 23, 2008], <https://basirat.ir/fa/news/60385/>.

¹²⁷ In western deterrence literature, a strategy of “deterrence by denial” aims to prevent attack with the threat that the attacker will fail to achieve its goals. This is in contrast to the strategy of “deterrence by punishment,” which attempts to prevent attack by threatening to retaliate against the vital interests of the attacker.

¹²⁸ AFGS Department of Plans and Programs (*moavenat-e tarh va barnameli*), 9 Dey 1386 [December 30, 2007], cited in Mohammad Hossein Ghanbari Jahromi, “farayand-e tarahi-e rahnameh-ye bazdarandegi-e hameh-janebeh-ye J I Iran dar cheshm-andaz-e bist-saleh-ye keshvar” [process of design of doctrine of all-dimensional deterrence of the Islamic

definition of all-dimensional deterrence above, also reflects Iran's view that deterrence is important not only to prevent attack but also to deter escalation after an attack or conflict has begun—a view consistent with Iranian statements dating back to the 1980s on the aims of retaliatory deterrence.

Asymmetric Strategy

Along with its deterrence strategy, Iran continued to develop its asymmetric strategy in the post-pattern break period. According to Iranian statements in the 2000s, the asymmetric strategy had important roles in both deterrence—separate from retaliation—and warfighting should deterrence fail. In this effort, Iran focused on deterring and countering threats from “technologically advanced Western militaries” through its asymmetric strategy and capabilities.¹²⁹ Despite Tehran's rhetoric about the decreased threat of a U.S. invasion, Iran's asymmetric strategy clearly was aimed in large part at responding to such a scenario, in addition to other potential military attacks by U.S. and Israeli forces.

As noted above, Iranian military officials touted the deterrent role of their asymmetric strategy and capabilities in a way that appeared similar to the Western concept of “deterrence by denial.” According to Safavi, for instance, Iran in 2003 turned its doctrine of asymmetric warfare into a deterrent strategy,¹³⁰ and he later noted that the IRGC's combat readiness would deter against the threats of extra-regional enemies (that is, the United States and Israel).¹³¹ In another example from 2003, deputy defense minister Hossein Dehghan indicated that one aim of Iran's asymmetric strategy was to make the enemy understand that it would not benefit from invading Iran, and he emphasized that Iran's defense power would increase the cost of action for the enemy.¹³² The following year, in 2004, IRGC Ground Force commander Mohammad Ali Jafari noted that Iran's preparations under its new asymmetric military strategy would play a deterrent role against threats.¹³³ These Iranian statements were consistent with a 2010 Defense Department report that assessed that Iran's asymmetric warfare doctrine was an important element of its deterrence strategy.¹³⁴

Republic of Iran in the country's 20-year vision], *Defense Strategy (rabbord-e defai)*, Vol. 13, No. 2, Tir 1394 [June-July 2015], p. 7.

¹²⁹ Tabatabai, *No Conquest, No Defeat*, p. 254.

¹³⁰ “sarlashgar Safavi dar gotegu ba mehr: taghir-e sakhtar-e defai-e Iran baraye bartari dar jang-ha-ye fara-mantegheh-i taghir kardeh ast / Amrika ghader be moghabeleh ba mushak-ha-ye anbu-e Iran nist / enghelab-e moghiat-e zheopolitik-e Iran ra afzayesh dad / talkh-tarin khaterreh: 18 tir va zelzeleh-ye Bam / sharin-tarin khaterreh: piruzi-e Hezbollah-e Lobnan” [general Safavi in discussion with mehr: change of Iran's defense structure for superiority in trans-regional wars / America is unable to counter Iran's massive missiles / the revolution increased Iran's geopolitical position / the bitterest memory: 18 tir and the Bam earthquake / the sweetest memory: victory of Lebanon's Hezbollah], *Mehr News*, 2 Mehr 1386 [September 24, 2007], <https://www.mehrnews.com/news/557531/>.

¹³¹ “sardar Safavi: estratezhi-e sepah dar surat-e harguneh-ye tahdid-e khareji tahajomi ast” [general Safavi: the IRGC's strategy for any external threat is offensive], *Iranian Students' News Agency (ISNA)*, 22 Shahrivar 1385 [September 13, 2006], <https://www.isna.ir/news/8506-13087/>.

¹³² “janeshin-e vazir-e defa: Amrika va Esrail, tahdid alaieh amniat-e melli-e keshvar hastand” [deputy defense minister: America and Israel are a threat to the country's national security], *Mehr News*, 23 Azar 1382 [December 14, 2003], <https://www.mehrnews.com/news/44302/>.

¹³³ “farmandeh-ye niru-ye zamini-e sepah: hadaf az saud be gholeh-ha-ye keshvar amadegi baraye nabard-e namotearef ast” [IRGC ground force commander: the goal of climbing to the top of the country is to prepare for an unconventional battle], *Mehr News*, 11 Tir 1383 [July 1, 2004], <https://www.mehrnews.com/news/91449/>.

¹³⁴ U.S. Department of Defense, “Unclassified Report on Military Power of Iran,” April 2010, https://man.fas.org/eprint/dod_iran_2010.pdf.

If deterrence failed, however, Iranian military officials highlighted the importance of Iran's asymmetric strategy to defend Iran against military attack or invasion, especially against technologically superior enemies. To use the terms of Iranian officials, it was a strategy aimed at preparing Iran to confront "unequal threats" and fight "unequal warfare" involving "unequal enemies."¹³⁵ According to Ariane Tabatabai, the U.S. invasions of Afghanistan and Iraq helped Iran "solidify its military doctrine by perfecting its mastery of asymmetric warfare and operationalizing it on a scale never seen before."¹³⁶

Iran's asymmetric strategy came under the general framework of "all-dimensional defense" (*defa-e hameh-janebeh*), an apparent parallel to Iran's framework of "all-dimensional deterrence" noted above. In 2003-2004, IRGC commander Safavi stated that the IRGC would confront any threat and attack with its all-dimensional defense strategy, which included the doctrine of asymmetric warfare and Alavi battle (*nabard-e alavi*).¹³⁷

A key aim of the asymmetric strategy was to enable Iran's military to fight in an uneven conflict by avoiding a superior enemy's areas of strength and focusing Iran's capabilities on the enemy's weak points. In 2008, IRGC commander Mohammad Ali Jafari described the asymmetric strategy as a way to confront the enemy in an unequal battle (*nabard-e na-hamtaraž*).¹³⁸ Safavi said that the IRGC's basic strategy was to conduct asymmetric combat operations (*amaliyat-ha-ye nabard-e na-motegharen*)¹³⁹ and under this strategy, Iran would identify the enemy's weaknesses and strengths so that Iran could act in the most effective way, by using its strengths to attack the enemy.¹⁴⁰ According to Ali Akbar Ahmadian, the head of the IRGC Strategic Studies Center, the strategy avoids the enemy's strengths and focuses one's key competencies on the enemy's weaknesses. Ahmadian explained that by making changes in strategy (*rahbord*), operations (*amaliyat*), and tactics and techniques (*taktik va teknik*), one can change the battle environment (*mohit-e nabard*) in such a way as to minimize or neutralize the effects of the enemy's technological strengths and advantages. In turn, this change in

¹³⁵ Source for unequal threats and unequal warfare: "farmandeh-ye jadid-e sepah: ruikard-e sepah taghviat-e ghodrat dar nabard-e na-motegharen ast" [new IRGC commander: approach of IRGC is strengthening power in asymmetric battle], *Mehr News*, 12 Shahrivar 1386 [September 3, 2007], <https://www.mehrnews.com/news/545570/>; source for unequal enemies: "rais-e setad-e moshtarak-e sepah dar hamayesh-e ashura 5: sepah ayandeh-i-e no dar zamineh-ye defa dar barabar tahdidat-e estekbar-e jahani be ejra darimi-avarad" [chief of IRGC joint staff in Ashura 5 conference: IRGC implements a new future in the field of defense against the threats of global arrogance], *Mehr News*, 24 Shahrivar 1383 [September 14, 2004], <https://www.mehrnews.com/news/111753/>.

¹³⁶ Tabatabai, *No Conquest, No Defeat*, p. 255.

¹³⁷ "farmandeh-ye kol-e sepah-e pasdaran-e enghelab-e eslami: dar keshvar be yek enghelab-e daneshgahi niaz darim" [IRGC general commander: we need a university revolution in the country], *Mehr News*, 14 Mehr 1382 [October 6, 2003], <https://www.mehrnews.com/news/29091/>; "farmandeh-ye kol-e sepah: Amrika be-donbal-e fatneh-angizi va na-amni dar dakhel-e Iran" [IRGC general commander: America is looking for sedition and insecurity inside Iran], *Mehr News*, 17 Dey 1382 [January 7, 2004], <https://www.mehrnews.com/news/50508/>.

¹³⁸ "amadegi-e kamel dar barabar-e hamleh-ye ehtemali-e doshman" [complete readiness for the enemy's possible attack], *Farda News*, 8 Tir 1387 [June 28, 2008], <https://www.fardanews.com/fa/tiny/news-54768>.

¹³⁹ "sardar Safavi: sepah va basij dar amadegi-e kamel be sar mibarand" [general Safavi: IRGC and basij are in full readiness], *Mehr News*, 20 Mordad 1382 [August 11, 2003], <https://www.mehrnews.com/news/16251/>.

¹⁴⁰ "sarlashgar Safavi dar gotegu ba mehr: taghir-e sakhtar-e defai-e Iran baraye bartari dar jang-ha-ye fara-mantegheh-i taghir kardeh ast / Amrika ghader be moghabeleh ba mushak-ha-ye anbu-e Iran nist / enghelab-e moghiat-e zheopolitik-e Iran ra afzayesh dad / talkh-tarin khatereh: 18 tir va zelzeleh-ye Bam / sharin-tarin khatereh: piruzi-e Hezbollah-e Lobnan" [general Safavi in discussion with mehr: change of Iran's defense structure for superiority in trans-regional wars / America is unable to counter Iran's massive missiles / the revolution increased Iran's geopolitical position / the bitterest memory: 18 tir and the Bam earthquake / the sweetest memory: victory of Lebanon's Hezbollah], *Mehr News*, 2 Mehr 1386 [September 24, 2007], <https://www.mehrnews.com/news/557531/>.

the battle environment would create an asymmetric balance (*tavazân-e gheyr-e motegharen*) with an asymmetric enemy (*doshman-e gheyr-e motevazân*) like the United States.¹⁴¹

An important element of Iran's asymmetric strategy was the doctrine of "mosaic defense" (*defa-e mozaik*) and "area defense" (*defa-e mosatab*). In 2004, Ali Akbar Ahmadian, then head of the IRGC Joint Staff, stated that as part of its asymmetric strategy to defend against threats from the "global arrogance" (*estekbar-e jahani*)—a common term used for the United States—the IRGC was implementing mosaic defense and area defense.¹⁴² Under this doctrine, Iran's traditional border defenses were in large part transferred throughout the country to enable organized responses to invading forces in any region of the country.¹⁴³ The IRGC created independent defense units across Iran's provinces to enable them to operate independently in the case of the destruction of Iran's central military headquarters.¹⁴⁴ In this approach, the country's provinces were turned into independent "mosaic pieces," where each piece would be capable of independent defense even if the neighboring pieces were destroyed.¹⁴⁵ Thus, under the doctrine of mosaic defense and area defense, there would be no undefended areas in Iran and no safe areas for the enemy.¹⁴⁶ According to Tabatabai, Iran's mosaic defense doctrine aimed to "stymie foreign invasion and render foreign occupation virtually impossible," and it also helped Iranian leaders "strike a balance between centralization of command and flexibility in operations."¹⁴⁷ The mosaic doctrine also helped to increase Iran's capabilities "against any attempts to decapitate it, such as might occur should U.S. or Israeli military forces strike the Islamic Republic."¹⁴⁸

Military Exercises

Continuing their longstanding practice, the IRGC and Artesh conducted military exercises to enhance their readiness and capabilities to support Iran's deterrence and asymmetric strategies. According to defense minister Mostafa Mohammad Najjar, Iranian military exercises in peacetime

¹⁴¹ "talkhis-e sokhanrani-e daryadar pasdar doktor Ali Akbar Ahmadian, rais-e markaz-e moteleat-e rahbordi-e sepah-e pasdaran-e enghelab-e eslami, dar hamayesh-e naghsh-e manuviat dar nabard-e na-hamtaraz" [summary of speech by rear admiral Dr. Ali Akbar Ahmadian, head of the IRGC Center of Strategic Studies, at the conference on the role of spirituality in unequal battle], *Hawzah.net*, fall 2009, <https://hawzah.net/fa/Magazine/View/5415/7498/93642/>.

¹⁴² "rais-e setad-e moshtarak-e sepah dar hamayesh-e ashura 5: sepah ayandeh-i-e no dar zamineh-ye defa dar barabar tahdidat-e estekbar-e jahani be ejra darmi-avarad" [chief of IRGC joint staff in Ashura 5 conference: IRGC implements a new future in the field of defense against the threats of global arrogance], *Mehr News*, 24 Shahrivar 1383 [September 14, 2004], <https://www.mehrnews.com/news/111753/>.

¹⁴³ "sardar Rahim Safavi: kuhnavardan-e basij va sepah everest raftah khahand kard" [general Rahim Safavi: basij and IRGC mountaineers will go to everest], *Mehr News*, 20 Mordad 1382 [August 11, 2003], <https://www.mehrnews.com/news/16365/>.

¹⁴⁴ "defa-e mozaik-e sepah va basij az amniat" [mosaic defense of IRGC and Basij from security], *Saheb News*, 14 Shahrivar 1394 [September 5, 2015], <https://sahebnews.ir/282745/>.

¹⁴⁵ "Commander explains structural changes in Iran Guards Corps," Iran's *Kargozaran* newspaper, September 21, 2008, BBC Monitoring, October 5, 2008.

¹⁴⁶ "Iran do estratezhi-e defai darad: sarzamini va mozaiki" [Iran has two defense strategies: territorial and mosaic], *Farda News*, 31 Khordad 1389 [June 21, 2010], <https://www.fardanews.com/fa/news/113658/>; "farmandeh-ye kol-e sepah sanheh-ye akhira-e soghut-e havapeyma ra taslit goft" [IRGC general commander expressed his condolences on the recent plane crash], *Islamic Republic News Agency (IRNA)*, 6 Azar 1385 [November 27, 2006], <https://www.irna.ir/news/6259697/>.

¹⁴⁷ Tabatabai, *No Conquest, No Defeat*, p. 271.

¹⁴⁸ Ali Alfoneh, "What do structural changes in the Revolutionary Guards mean?" American Enterprise Institute, September 23, 2008, <https://www.aei.org/research-products/report/what-do-structural-changes-in-the-revolutionary-guards-mean/>.

were a normal practice to maintain the readiness (*amadegi*) and capability (*tavan*) of Iran's armed forces.¹⁴⁹ In many instances, these exercises focused on asymmetric warfare tactics and were aimed at confronting perceived U.S. threats.¹⁵⁰ As part of the exercises, the IRGC and Artesh tested and employed ballistic missiles, cruise missiles, artillery rockets, and CBW defense equipment.¹⁵¹

2006 Israel-Hezbollah War Validates Iran's Approach

In July 2006, Israel initiated major military operations into Lebanon against Lebanese Hezbollah in response to the group's cross-border raid against an Israeli military patrol and its capture and killing of Israeli soldiers. This resulted in a destructive 33-day war during which Israel conducted an air bombing campaign and ground invasion and attempted to use its military and technological superiority to destroy Hezbollah's military capabilities and infrastructure.¹⁵² Hezbollah was able to deny Israel's goals, impose costs on the Israeli military, and attack and damage Israel itself, which was seen as Israel's "center of gravity."¹⁵³ Hezbollah was even able to attack an Israeli naval ship using a C-802 ASCM.¹⁵⁴

The war occurred soon after Tehran's transition to increased confidence noted above, and the perceived success of Hezbollah's asymmetric strategy and capabilities against Israel's military superiority reinforced Iranian officials' views about the utility of their own deterrence and asymmetric strategies. Importantly, the war appeared to bolster the lessons Iran had derived during the pattern break and its thinking about how to deter and fight technologically superior enemies. For instance, in 2008, IRGC commander Jafari cited the 33-day war and Hezbollah's resistance to Israeli superiority as a "clear example" of how Iran can counter the technological superiority of the U.S. military and impose costs on it in a conflict.¹⁵⁵ Later, an Iranian press article noted Hezbollah's

¹⁴⁹ "gozash-e mashruh-e mehr az konferans-e khabari-e vazir-e defa: tavan-e defai-e Iran tahdidi baraye hich keshvar nist / selah-ha-ye mokhtalef-e Irani be 75 keshvar-e donya sader mishavad" [mehr's detailed report of news conference with the defense minister: Iran's defense capability is not a threat for any country], *Mehr News*, 13 Shahrivar 1385 [September 4, 2006], <https://www.mehrnews.com/news/375934/>.

¹⁵⁰ "dar razmayesh-e ashura-ye panj takid kard: sardar Safavi: razmayesh-e ashura-ye panj nemad-e eghtedar va karmadi dar nabard-ha-ye na-motegharen bud" [in ashura 5 exercise it was emphasized: general Safavi: the ashura five exercise was a symbol of power and efficiency in asymmetric battles], *Mehr News*, 24 Shahrivar 1383 [September 14, 2004], <https://www.mehrnews.com/news/111983/>.

¹⁵¹ "farmandeh-ye kol-e sepah dar tashrih-e dovomin marhaleh-ye razmayesh-e peymbar azam: razmayesh-e peyambar azam tahdidi baraye keshvar-ha-ye mantegheh nist / razmayesh-e Amrika dar khalij-e fars yek manuver-e siyasi va tablighati ast" [IRGC general commander in explaining second phase of great prophet exercise: the great prophet exercise is not a threat for any countries of the region / America's exercise in the Persian Gulf is a political and propaganda maneuver], *Mehr News*, 10 Aban 1385 [November 1, 2006], <https://www.mehrnews.com/news/400805/>; "bakhsh-ha-ye digari az marhaleh-ye dovom-e razmayesh-e etehad-84 ba movafaghiat be payan resid" [other sections of the second phase of etehad-84 exercise were successfully concluded], *Islamic Republic News Agency (IRNA)*, 19 Ordibehesht 1384 [May 9, 2005], <https://www.irna.ir/news/6318090/>.

¹⁵² Gilbert Achcar and Michel Warschawski, *33 Day War: Israel's War on Hezbollah in Lebanon and its Consequences* (London: Routledge, 2007), pp. 37-39; Pierre C. Pahlavi and Eric Ouellet, "Institutional analysis and irregular warfare: Israel Defense Forces during the 33-Day War of 2006," *Small Wars and Insurgencies*, Vol. 23, No. 1 (2012), pp. 36-37.

¹⁵³ Massaab Al-Aloosy, "Deterrence by insurgents: Hezbollah's military doctrine and capability vis-a-vis Israel," *Small Wars and Insurgencies*, Vol. 33, No. 6 (2022), pp. 6-7.

¹⁵⁴ U.S. Office of Naval Intelligence, "Iran's Naval Forces: From Guerilla Warfare to a Modern Naval Strategy," Fall 2009, p. 17; Amos Harel, "Hezbollah Missile Strikes Navy Warship; Four Killed," *Haaretz*, July 16, 2006, <https://www.haaretz.com/2006-07-16/ty-article/hezbollah-missile-strikes-navy-warship-four-killed/0000017f-dc8f-db5a-a57f-dcefb5c80000>.

¹⁵⁵ "mosahebeh-ye sarlashgar Jafari ba al-jazira: Amrika dar tir-ras-e mast, hamaghat nakonad / Bush dar pey-e jodai-e mantegheh az Iran ast" [interview with general Jafari with Al Jazeera: America is in our crosshairs, don't be stupid /

success in implementing “mosaic defense”—using operations by independent military units—to resist Israeli attacks in the 2006 war.¹⁵⁶ According to longtime Iranian diplomat Seyed Hossein Mousavian, Israel’s failure in the conflict “established a mindset within the Iranian military-intelligence establishment that despite its highly-advanced army, Israel was not unbeatable.”¹⁵⁷ According to a RAND report, the 2006 war, which was “widely viewed by all sides as a proxy war between Iran and Israel, demonstrated Iran’s potential military doctrine against Israel in the event of a direct military conflict.”¹⁵⁸

Indeed, Iran’s approach from the 2000s to improve its deterrence and asymmetric strategies and associated capabilities were consistent with the four key areas of Hezbollah’s post-2006 approach. This approach emphasized: (1) Developing capabilities, especially missiles and rockets; (2) communicating its resolve; (3) organizing its capabilities into coercive threats; and (4) making its threats credible.¹⁵⁹ In this way, Iran—like its important Axis of Resistance partner—was refining its approach to confronting technologically-superior adversaries.

Continued Acquisition of Strategic Weapons for Deterrence and Asymmetric Warfare

During and after the 2001-2003 pattern break, Iran continued its longstanding efforts to better align its actual military capabilities with its evolving strategic requirements for deterrence and asymmetric warfighting.¹⁶⁰ IRGC official Hossein Salami stated that Iran’s development of military capabilities focused on the areas of deterrence, retaliation, and defensive responses.¹⁶¹ Together, this and other such Iranian statements provide a useful framework for viewing Iran’s strategic weapons acquisition efforts in the following years as supporting deterrence, retaliation, and/or asymmetric defense. As part of these efforts, the 2000s saw several major developments and changes to the pattern of Iran’s acquisition of strategic weapons—both as the fruition of previous long-lead-time work and also in response to the pattern break—especially in the areas of ballistic missiles, UAVs, and its suspected nuclear and CBW efforts.

Bush is seeking the separation of the region from Iran], *Mehr News*, 7 Bahman 1386 [January 27, 2008], <https://www.mehrnews.com/news/627720/>.

¹⁵⁶ “defa-e mozaik-e sepah va basij az amniat” [mosaic defense of IRGC and Basij from security], *Saheb News*, 14 Shahrivar 1394 [September 5, 2015], <https://sahebnews.ir/282745/>.

¹⁵⁷ Mousavian with ShahidSaless, *Iran and the United States*, Kindle edition, location 4478.

¹⁵⁸ Kaye, Nader, and Roshan, *Israel and Iran: A Dangerous Rivalry*, p. 64.

¹⁵⁹ Daniel Sobelman, “Learning to Deter: Deterrence Failure and Success in the Israel-Hezbollah Conflict, 2006-2016,” *International Security*, Vol. 41, No. 3 (Winter 2016/17), p. 180.

¹⁶⁰ For instance, according to defense minister Mostafa Mohammad Najjar, Iran’s weapons development was focused on supporting the country’s deterrence and asymmetric warfare capabilities. (“vazir-e defa dar jam-e khabar-negaran dar majles: rahbord-e defai-e ma bazdarandegi ast / niru-ha-ye mosalah dar owj-e ghodrat-e defai hastand” [defense minister in gathering of news reporters in the majles: our defense strategy is deterrence / armed forces are in a wave of defense power], *Mehr News*, 7 Tir 1385 [June 28, 2006], <https://www.mehrnews.com/news/345947/>; “sardar sartip Najjar vazir-e defa dar haftomin majma-e sarasari-e farmandehan-e sepah: barnameh-ha-ye vezarat-e defa be dolat va majles erach shodeh-and / marakez va karkhanejat-e nezami be noghat-e jadid enteghal peyda mikonand” [general Najjar, defense minister, in seventh general assembly of IRGC commanders: the defense ministry’s programs have been presented to the government and majles / military centers and factories have been transferred to new points], *Mehr News*, 24 Shahrivar 1384 [September 15, 2005], <https://www.mehrnews.com/news/230250/>.)

¹⁶¹ “farmandeh-ye niru-e havai-e sepah: eda-ye estefadeh-ye Iran az kolahak-e hasteh-i kazb-e mahz ast / defa az aseman-e Iran ba samaneh-ye yekparcheh-ye padafand-e havai” [IRGC air force commander: claim of Iran using a nuclear warhead is a complete lie / defense of Iran’s skies with an integrated air defense system], *Mehr News*, 31 Shahrivar 1387 [September 21, 2008], <https://www.mehrnews.com/news/753334/>.

Ballistic and Cruise Missiles

During and after the pattern break, Iran continued to treat its efforts to acquire ballistic and cruise missiles as a high priority. With respect to the former, as the main element of its retaliatory deterrence strategy, Iran focused in particular on increasing the range, accuracy, and destructive power of both its liquid- and solid-propellant missiles.

In the liquid-propellant track, Iran continued production and deployment of the Shahab-1 and Shahab-2 SRBMs, and in 2003 it achieved an important milestone with the operational deployment of the Shahab-3 MRBM.¹⁶² For the first time—since it first became interested in doing so the early 1980s—Iran now had the operational capability to strike Israel with missiles launched from Iranian territory. Iran also reportedly worked to develop improved versions of the Shahab-3 by increasing its range, accuracy, and explosive power.¹⁶³ By the late 2000s, Iran had developed and tested a 2,000-km-range version of the Shahab-3, the Ghadr-1.¹⁶⁴

In its solid-propellant track, Iran continued work on its first solid-propellant ballistic missile, the 250-km-range Fateh-110, conducting flight testing in 2002 and starting production by 2004.¹⁶⁵ Iran also continued development of its first solid-propellant MRBM under the Ashura project.¹⁶⁶ Iran announced the development of the 2,000-km-range Ashura in 2007,¹⁶⁷ which led to flight testing as well as launches in IRGC exercises of what it renamed the Sejil missile in 2008 and 2009.¹⁶⁸ According to an Iranian national award for the Sejil project, the missile was developed as a strategic

¹⁶² Wade Boese, “Iran Touts Missile Capability,” *Arms Control Today*, September 2003, <https://www.armscontrol.org/act/2003-09/iran-nuclear-briefs/iran-touts-missile-capability>.

¹⁶³ “jadid-tarin nemuneh-ye mushak-e shahab 3 azmayesh shod” [newest model of shahab 3 missile tested], *Islamic Republic News Agency (IRNA)*, 29 Mehr 1383 [October 20, 2004], <https://www.irna.ir/news/6389767/>; “moaven-e havafaza-ye vezarat-e defa: nakhostin mahvareh-ye Irani sal-e ayandeh be faza miravad” [aerospace deputy of the defense ministry: first Iranian satellite will go to space next year], *Islamic Republic News Agency (IRNA)*, 15 Mehr 1383 [October 6, 2004], <https://www.irna.ir/news/6387570/>.

¹⁶⁴ “dar aghaz-e hafteh-ye defa-e moghadas: dastavard-ha-ye defai-e keshvar be namayesh daramad / manover-e tavanmandi-e niru-ha-ye mosalah” [at start of holy defense week: defense achievements of the country to be displayed / maneuver of capability of armed forces], *Mehr News*, 31 Shahrivar 1387 [September 21, 2008], <https://www.mehrnews.com/news/753207/>; “dar payan-e razmayesh-e peyambar azam 4: mushak-ha-ye durbord-e shahab 3 va sejil ba movafaghiat shelik shodand” [at the end of the great prophet 4 exercise: long-range shahab 3 and sejil missiles were successfully fired], *Mehr News*, 6 Mehr 1388 [September 28, 2009], <https://www.mehrnews.com/news/954360/>.

¹⁶⁵ “mushak-e ‘fateh 110-A’ sakht-e vezarat-e defa-e Iran ba movafaghiat azmayesh shod” [“fateh-110A” missile manufactured by Iran’s defense ministry was successfully tested], *Islamic Republic News Agency (IRNA)*, 15 Shahrivar 1381 [September 6, 2002], <https://www.irna.ir/news/5564961/>.

¹⁶⁶ “vazir-e defa az sakht-e mushak-e balestik ba bord-e do hezar kilometr khabar dad” [defense minister announced manufacture of ballistic missile with two thousand kilometer range], *Islamic Republic News Agency (IRNA)*, 6 Azar 1386 [November 27, 2007], <https://www.irna.ir/news/4868167/>.

¹⁶⁷ “vazir-e defa az sakht-e mushak-e balestik ba bord-e do hezar kilometr khabar dad” [defense minister announced manufacture of ballistic missile with two thousand kilometer range], *Islamic Republic News Agency (IRNA)*, 6 Azar 1386 [November 27, 2007], <https://www.irna.ir/news/4868167/>.

¹⁶⁸ “Ahmadinejad: mushak-e sejil 2 ba movafaghiat azmayesh shod” [Ahmadinejad: the sejil 2 missile was successfully tested], *Islamic Republic News Agency (IRNA)*, 30 Ordibehesht 1388 [May 20, 2009], <https://www.irna.ir/news/7313603/>; “dar payan-e razmayesh-e peyambar azam 4: mushak-ha-ye durbord-e shahab 3 va sejil ba movafaghiat shelik shodand” [at the end of the great prophet 4 exercise: long-range shahab 3 and sejil missiles were successfully fired], *Mehr News*, 6 Mehr 1388 [September 28, 2009], <https://www.mehrnews.com/news/954360/>.

weapon to improve Iran's deterrence capabilities.¹⁶⁹ With the Ashura/Sejjil and Shahab-3 families of MRBMs, during the 2000s Iran was expanding its capabilities to strike Israel—and other targets in the region—using missiles with ranges up to 2,000 km.

Based on Iran's advances in MRBMs and its efforts to develop space launch vehicles (SLVs), the U.S. Intelligence Community continued to state its concerns about Iranian intentions to develop a longer-range IRBM or ICBM. For example, it voiced concerns that Iran might “use its ballistic missiles to develop space launch vehicles” and highlighted that SLV technologies “have direct application to long-range ballistic missiles that we also assess Iran seeks.”¹⁷⁰ After initial hints in the 1990s about the country's SLV intentions, Iranian officials in the mid-2000s stated their concrete plans to develop SLVs to deliver satellites to orbit¹⁷¹ and MODAFL began launches of its first SLV, the Safir, in 2008 and 2009.¹⁷² In addition, by the late 2000s the IRGC reportedly began its own parallel SLV development program based on solid-propellant technology.¹⁷³

In addition, as an important element of its ballistic missile efforts, starting in the 2000s, Iran focused on dramatically increasing the accuracy of its missiles, reportedly driven by the direction of Supreme Leader Khamenei. Indeed, in 2003, Khamenei directed Iran's missile developers to place a high priority on increasing the accuracy of their ballistic missiles, stating that he wanted to reach the point where Iran could strike one target with each missile. This guidance spurred Iran's missile developers to work to increase missile accuracy.¹⁷⁴ Also, during 2007-2008, Khamenei reportedly set a high priority for achieving the capability to target naval ships with ballistic missiles, which drove Iran's missile developers to work on developing anti-ship ballistic missiles (ASBMs).¹⁷⁵ In 2009, Khamenei reiterated that missile accuracy was his main priority.¹⁷⁶ Thus, with these efforts, starting in the

¹⁶⁹ Kharazmi national award for the project, “Design and Manufacture of Sejjil Missile” (*tarahi va sakht-e mushak-e sejjil*), 2012.

¹⁷⁰ U.S. Office of the Director of National Intelligence, “Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January to 31 December 2005,” <https://www.dni.gov/files/documents/Newsroom/Reports%20and%20Pubs/CDA%2011-14-2006.pdf>.

¹⁷¹ “partab-e nakhostin mahvareh sakht-e jomhuri-e eslami-e Iran” [launch of the first Iranian-manufactured satellite], *ParsKey*, 16 Dey 1382 [January 6, 2004], <http://old.parssky.com/view/182.aspx>; “moaven-e rais-e sazman-e hava-faza: mushak-e shahab 3 ghabeliat-e bazdarandegi-e ma ra afzayesh dadeh ast shahab 3 ra ghat'an dobareh behineh-sazi mikonim” [deputy head of aerospace organization: shahab-3 missile has increased our deterrence capability, we will definitely improve the shahab-3 again], *Iranian Students' News Agency (ISNA)*, 15 Mehr 1383 [October 6, 2004], <https://www.isna.ir/news/8307-06093/>.

¹⁷² Randall Mikkelsen, “Iran satellite launch a failure: US official,” *Reuters*, August 19, 2008, <http://www.reuters.com/article/idUSN1935578420080819>; Iranian TV, interview with ISA director Morteza Barari, February 2020, <https://www.youtube.com/watch?v=6LEvaCW3P3Q>.

¹⁷³ “ravayati az talash-ha-ye shahid Tehrani Moghadam baraye sakht-e hamel-e mahvareh” [narration of the efforts of martyr Tehrani Moghaddam to build a satellite carrier], *Tasnim News*, 7 Ordibehesht 1399 [April 26, 2020], <https://www.tasnimnews.com/fa/news/1399/02/07/2251258/>.

¹⁷⁴ “shahid Tehrani Moghadam dasturolamal-e sakht-e mushak ra baraye felestini-ha ferestad / naghsh-e kelidi-e haj Ghasem dar noghteh-zan shodan-e fateh / goftegu” [martyr Tehrani Moghadam sent instructions for missile manufacture for the Palestinians / key role of haj Ghasem in making the fateh point-strike], *Tasnim News*, 21 Aban 1401 [November 12, 2022], <https://www.tasnimnews.com/fa/news/1401/08/21/2802715/>.

¹⁷⁵ “tajhiz-e sepah be mushak-e balestik-e daryai ba bord-e 700 kilometr / joziati az amaliyat-e gostar-deh-ye pahpad-ha-ye sepah dar Surieh elam shod” [equipping the IRGC with naval ballistic missile with 700 kilometer range / details of the IRGC's UAV operations in Syria were announced], *Tasnim News*, 24 Mehr 1397 [October 16, 2018], <https://www.tasnimnews.com/fa/news/1397/07/24/1854036/>.

¹⁷⁶ “sardar Hajizadeh: mushak-ha-ye ma ta 2000 kilometr noghteh-zan hastand / 700 amaliyat-e pahpadi alayeh Daesh” [general Hajizadeh: our missiles are point-strike to 2000 kilometers / 700 UAV operations against Daesh], *Mehr News*, 24 Mehr 1397 [October 16, 2018], <https://www.mehrnews.com/news/4431697/>.

2000s, in addition to increasing missile ranges, Iran placed a high priority on achieving a “point-strike” (*noghteh-zan*) capability to conduct precision strikes with ballistic missiles against both land-based and sea-based targets.

In the 2000s, Iran also continued its efforts in cruise missile acquisition to enhance this important element of its asymmetric capabilities. With ASCMs, Iran’s work continued to be based on Chinese technology. In addition to producing the Raad (based on the HY-2) and the Noor (based on the C-802),¹⁷⁷ Iran worked with China to develop the Kosar family of short-range ASCMs, based on the Chinese C-701.¹⁷⁸ In 2004, defense minister Shamkhani stated that MODAFL was producing ASCMs with ranges up to 300 km,¹⁷⁹ and in 2008 IRGC commander Jafari announced the test of a 300-km-range ASCM¹⁸⁰—both are probably references to the Raad, Iran’s longest-range ASCM in the 2000s. Iran also continued work to reverse engineer and develop a LACM,¹⁸¹ based on its illicit procurement in 2001 (noted above) of six Kh-55 LACMs from Ukraine.¹⁸² However, Iran would not publicly announce the initial achievements of this effort until the next decade.¹⁸³

Long-Range Artillery Rockets

In the area of long-range artillery rockets, Iran continued its production and deployment of the Nazeat and Zelzal families of rockets—along with the shorter range Arash and Fajr families—which were deployed by the air and ground forces of both the IRGC and Artesh.¹⁸⁴ As before, Iran’s long-

¹⁷⁷ “moaven-e havafaza-ye vezarat-e defa: nakhostin mahvareh-ye Irani sal-e ayandeh be faza miravad” [aerospace deputy of the defense ministry: first Iranian satellite will go to space next year], *Islamic Republic News Agency (IRNA)*, 15 Mehr 1383 [October 6, 2004], <https://www.irna.ir/news/6387570/>.

¹⁷⁸ U.S. Office of Naval Intelligence, “Iran’s Naval Forces: From Guerilla Warfare to a Modern Naval Strategy,” 2009, p. 17; “mushak-e Kosar, barg-e barandeh-ye niru-ha-ye mosalah-e Iran dar khalij-e fars” [“Kosar missile,” trump card of Iran’s armed forces in the Persian Gulf], *Young Journalists Club (YJC)*, 28 Shahrivar 1398 [September 19, 2019], <https://www.yjc.ir/fa/news/7075162/>.

¹⁷⁹ “vazir-e defa ba eshareh be tavanai-e mushaki-e keshvar: bord-e mushak-ha-ye ma motenaseb ba tahdidat-e mantegheh-i ast” [defense minister indicating the country’s missile capability: the range of our missiles is appropriate to the regional threat], *Mehr News*, 17 Dey 1382 [January 7, 2004], <https://www.mehrnews.com/news/50578/>.

¹⁸⁰ “sardar Jafari alam kard (mashruh): azmayesh-e mushak-e jadid ba bord-e 300 kilometr / takzib-e manover-e moshtarek ba Venezuela” [general Jafari announced (detailed): test of new missile with 300 kilometer range / denying joint exercise with Venezuela], *Mehr News*, 14 Mordad 1387 [August 4, 2008], <https://www.mehrnews.com/news/726797/>.

¹⁸¹ “gozash-e tahlili: mushak-e kruz-e hoveyzeh: ‘dast-e bezan-e jadid’ baraye sepah-e pasdaran” [analysis report: hoveyzeh cruise missile: “new striking hand” for the IRGC], *Tasnim News*, 21 Bahman 1397 [February 10, 2019], <https://www.tasnimnews.com/fa/news/1397/11/21/1938156/>.

¹⁸² Paul Kerr, “Ukraine Admits Missile Transfers,” *Arms Control Today*, Vol. 35, No. 4 (May 2005), p. 41.

¹⁸³ In 2012, Iranian officials announced the development of the 2,000-km-range Meshkat cruise missile, and in 2015 unveiled the 700-km-range Sumar land-attack cruise missile (LACM), both reportedly results of Iran’s reverse engineering and development of the Kh-55 (AS-15) LACM. (“meshkat mushak-e kruz-e 2 hezar kilometr-e Iran” [meshkat, 2,000 kilometer cruise missile of Iran], *Asr Iran*, 19 Shahrivar 1391 [September 9, 2012], <https://www.asriran.com/fa/news/231229/>; “ba hozur-e vazir-e defa: mushak-e kruz-e zamini ‘sumar’ runamai shod / tahvil-e anbuhs mushak-ha-ye balestik-e ghadr va ghiam be sepah” [in the presence of the defense minister: “sumar” land cruise missile unveiled / mass delivery of ghadr and ghiam ballistic missiles to the IRGC], *Islamic Republic News Agency (IRNA)*, 17 Esfand 1393 [March 8, 2015], <https://www.irna.ir/news/81533290/>.)

¹⁸⁴ “dar aghaz-e hafteh-ye defa-e moghadas: dastavard-ha-ye defai-e keshvar be namayesh daramad / manover-e tavanmandi-e niru-ha-ye mosalah” [at start of holy defense week: defense achievements of the country to be displayed / maneuver of capability of armed forces], *Mehr News*, 31 Shahrivar 1387 [September 21, 2008], <https://www.mehrnews.com/news/753207/>.

range artillery rockets appeared to play a role in both Iran's retaliatory deterrence and asymmetric warfare strategies.

Unmanned Aerial Vehicles

Iran's MODAFL continued its development and production of more advanced versions of the Mohajer and Ababil families of UAVs,¹⁸⁵ including armed and suicide versions.¹⁸⁶ In addition, in 2000-2001, MODAFL began design work on the Karrar long-range jet-powered strike UAV, Iran's first strategic UAV.¹⁸⁷ In 2004, MODAFL displayed a model of a new jet-powered UAV,¹⁸⁸ and in 2005 defense minister Najjar stated that developing attack UAVs was one of the priorities of MODAFL to address potential threats.¹⁸⁹ In 2007, Iranian officials claimed Iran was developing a new 700-km-range UAV, which was later unveiled in 2010 as the 1,000-km-range Karrar long-range bomber UAV.¹⁹⁰ In parallel to MODAFL's efforts, the IRGC-ASF began its own UAV development in the 2000s, which would later result in the IRGC's Shahed-family UAVs.¹⁹¹ Thus, by the end of the 2000s, Iran was entering a new phase by developing UAVs as a strategic weapon.

Emphasis on Self-Sufficiency

As in previous decades, Iranian officials continued to highlight the importance of increase the country's self-sufficiency in the development and production of missiles, rockets, and UAVs. In 2005, defense minister Shamkhani stated that MODAFL pursued a strategy of "armament self-sufficiency" (*kehod-kafai-e taslihati*) to meet Iran's defense needs under conditions of threat and war.¹⁹² Although it continued to slowly make progress in increasing the level of self-sufficiency of its

¹⁸⁵ "vezarat-e defa-e Iran dah-ha farvand-e havapeyma-ha-ye bedun-e sarneshin ra be parvaz daravard" [Iran's defense ministry launched tens of unmanned aircraft], *Islamic Republic News Agency (IRNA)*, 28 Tir 1378 [July 19, 1999], <https://www.irna.ir/news/5679433/>; "seyr-e ertegha-ye tavan-e pahpadi-e Iran: az 'talash' ta 'shahed'" [route of upgrade of Iran's UAV capability: from "talash" to "shahed"], *Defa Press*, 7 Bahman 1400 [January 27, 2022], <https://defapress.ir/fa/news/502701/>.

¹⁸⁶ "parandeh-ha-ye entehari-e Iran ra bishtar beshenasid: az tufan ta kian" [better know suicide drones: from tufan to kian], *Young Journalists' Club (YJC)*, 3 Dey 1398 [December 24, 2019], <https://www.yjc.ir/fa/news/7182258/>.

¹⁸⁷ "Roundtable Discussion with Eslami and Farahi," *Islamic Republic of Iran News Network Television IRINN*, August 22, 2010, U.S. Open Source Center, September 14, 2010.

¹⁸⁸ MODAFL display of a model of an unidentified UAV, *Fars News*, 2004, https://upload.wikimedia.org/wikipedia/commons/d/d9/Karrar_mockup_-_Fars_News.jpg.

¹⁸⁹ "sardar sartip Najjar vazir-e defa dar haftomin majma-e sarasari-e farmandehan-e sepah: barnameh-ha-ye vezarat-e defa be dolat va majles eraeh shodeh-and / marakez va karkhanejat-e nezami be noghat-e jadid enteghal peyda mikonand" [general Najjar, defense minister, in seventh general assembly of IRGC commanders: the defense ministry's programs have been presented to the government and majles / military centers and factories have been transferred to new points], *Mehr News*, 24 Shahrivar 1384 [September 15, 2005], <https://www.mehrnews.com/news/230250/>.

¹⁹⁰ "Iran az bomb-afkan-e jadid-e bedun-e sarneshin-e 'karrar' runamai kard" [Iran unveiled the new "karrar" unmanned aircraft bomber], *Radio Farda*, 31 Mordad 1389 [August 22, 2010], https://www.radiofarda.com/a/F12_New_Iranian_unmanned_drone/2134432.html.

¹⁹¹ "tosieh-ye estratezhik-e rahbar-e enghelab be havafaza-ye sepah / Iran cheguneh saheb-e bozorgtarin navgan-e pahpad-e razmi-e mantegheh shod?" [supreme leader's strategic advice to IRGC aerospace / how did Iran become the owner of the largest fleet of combat drones in the region?], *Jahan News*, 18 Khordad 1399 [June 7, 2020], <https://www.jahannews.com/news/729937/>.

¹⁹² "hadaksar-sazi-e ghodrat-e melli dastur-e kar-e ma ast / ghodrat-e bazdarandegi nohfteh dar hambastegi va mosharekat-e melli ast / dar surat-e har guneh-ye tahdid az abzar-ha-ye modern-e jang-e na-motegharen alaich doshman estefadeh khahim kard" [maximizing national power is our agenda / deterrence power lies in solidarity and national partnerships / in case of any threat, we will use modern tools of asymmetric warfare against the enemy], *Mehr News*, 18 Ordibehesht 1384 [May 8, 2005], <https://www.mehrnews.com/news/180750/>.

weapons programs, the ongoing theme of Iran's reliance on foreign technology and assistance continued, especially from China, Russia, and North Korea.¹⁹³

Nuclear Weapons

As noted above, as a response—albeit a secret one—to the pattern break in question, in fall 2003, Iran halted the AMAD Plan, which had been its nuclear weapons program since the late 1990s. Reportedly, it did so mainly because of international scrutiny and pressure and Tehran's concerns about its threat environment—in particular the fear of a U.S. military attack.¹⁹⁴ However, after its decision to halt the AMAD Plan, Tehran reportedly was “keeping open the option to develop nuclear weapons”¹⁹⁵ and continued to conduct work that was “highly relevant to a nuclear weapons program.”¹⁹⁶ According to one report, Tehran decided to continue efforts after the halt and divide them into “overt” and “covert” activities. Overt activities could be explained as something other than nuclear weapons-related work, while those activities that had clear weapons applications—such as neutron research—would be concealed.¹⁹⁷ In other words, Iran had shifted (back) to a “hedging” strategy for nuclear weapons: it attempted to preserve its expertise and facilities and make progress in certain areas—such as uranium enrichment and weapons-relevant work on explosives and neutronics—to be able to develop nuclear weapons if Tehran decided to resume the program in the future.¹⁹⁸

Chemical and Biological Weapons

Regarding CBW, U.S. and Western assessments of Iranian CBW intentions, activities, and capabilities drastically changed after 2003. In sharp contrast to the claims regarding Iranian CBW programs prior to 2003, the accusations afterward were both less confident and less extensive. In particular, by the mid-to-late 2000s, they appeared less confident about whether Iran had offensive CBW programs, whether it had stockpiles of CBW munitions and delivery systems, and whether it was producing CBW. By about 2007, the claims appeared to focus on suspected Iranian inherent capabilities to produce CBW—if Tehran decided to do so—and no longer on claims that Iran actually had dedicated CBW programs and CBW stockpiles. For example, on CW, by 2008 the U.S. Intelligence Community (IC) assessed that “Iran maintains the capability to produce chemical

¹⁹³ U.S. Office of the Director of National Intelligence, “Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January to 31 December 2005.”

¹⁹⁴ U.S. National Intelligence Council, “Iran: Nuclear Intentions and Capabilities,” National Intelligence Estimate, November 2007, https://www.dni.gov/files/documents/Newsroom/Reports%20and%20Pubs/20071203_release.pdf; IAEA Board of Governors, “Annex: Possible Military Dimensions to Iran's Nuclear Programme,” in “Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran,” GOV/2011/65, November 8, 2011, p. 6; Crist, *The Twilight War*, p. 475.

¹⁹⁵ U.S. National Intelligence Council, “Iran: Nuclear Intentions and Capabilities,” National Intelligence Estimate, November 2007, https://www.dni.gov/files/documents/Newsroom/Reports%20and%20Pubs/20071203_release.pdf. According to this assessment, Iran was “continuing to develop a range of technical capabilities that could be applied to producing nuclear weapons.”

¹⁹⁶ IAEA Board of Governors, “Annex: Possible Military Dimensions to Iran's Nuclear Programme,” in “Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran,” GOV/2011/65, November 8, 2011, p. 6.

¹⁹⁷ David Albright, Olli Heinonen, and Andrew Stricker, “Breaking Up and Reorienting Iran's Nuclear Weapons Program,” Institute for Science and International Security, October 29, 2018, pp. 5-6.

¹⁹⁸ Albright, Burkhard, et al., *Iran's Perilous Pursuit of Nuclear Weapons*, pp. 284-309, 447-448; Eisenstadt, “Iran's Nuclear Hedging Strategy.”

warfare (CW) agents in times of need and conducts research that may have offensive applications.” It added that Iran continued to seek foreign technology that “could advance its capability to produce CW agents,” and that “Iran is capable of weaponizing CW agents in a variety of delivery systems.” These claims represent a clear departure from the highly confident and specific pre-2003 claims that, for instance, Iran had an offensive CW program and had stockpiled CW munitions.¹⁹⁹

The changes to claims about BW after 2003 appeared quite similar. In 2004, the U.S. Intelligence Community stated that Iran probably had “the capability to produce at least small quantities of BW agents for offensive purposes” and that its procurement of biotechnology “could benefit Tehran’s BW program.”²⁰⁰ In 2007, the U.S. Intelligence Community stated that Iran had previously conducted offensive BW R&D and that “Iran probably has the capability to produce some biological warfare (BW) agents for offensive purposes, if it made the decision to do so.”

In sum, the post-2003 claims about Iran’s CBW programs changed from concerns about *actual* offensive CBW programs and weaponized CBW stockpiles to mostly claims about what Iran was *capable* of doing if it decided to do so. It is unclear why intelligence claims about Iranian CBW intentions and capabilities changed so drastically in the years after 2003, whether due to a major U.S. intelligence re-assessment of its reporting and analysis on Iran, an Iranian halt and dismantling of offensive CBW efforts as a result of fears of U.S. attack—like the 2003 halt to its nuclear weapons program—or other reasons.

Table 5. Iran’s New Pattern for Strategic Weapon Acquisition, Threat, and Use

Element of New Pattern	Key Organizations
Military Strategy	
Retaliatory deterrence	IRGC Air Force
Asymmetric strategy for both deterrence and warfighting	IRGC, Artesh
Military exercises to enhance readiness, deterrence, and asymmetric capabilities	IRGC, Artesh
Acquisition	
Expanding ballistic missile efforts, including MRBM capabilities, SLV development, and suspicions of longer-range missile intentions	MODAFL, IRGC
Expanding ASCMs, ongoing LACM development	MODAFL
Long-range and medium-range artillery rockets	MODAFL
UAVs: Ongoing development, new efforts to develop long-range strike UAV	MODAFL
Nuclear weapons program: Halt to AMAD Plan, continuation of nuclear weapons-relevant work (“hedging”)	MODAFL, AEOI
Suspected CBW programs: Post-2003 decreased level of confidence and specificity of Western suspicions	MODAFL

¹⁹⁹ Office of the Director of National Intelligence, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, Covering 1 January to 31 December 2008.”

²⁰⁰ U.S. Office of the Director of National Intelligence, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January-31 December 2004.”

Conclusion

In this second case study, we examined the pattern break between 2001-2003 and Iran's responses to its elements, related to the acquisition, threat, and use of strategic weapons. In this case, Iran continued its postwar pattern for strategic weapons, building upon the origins and the strategic, technological, and organizational foundations of the Iran-Iraq War. In response to the elements of the pattern break, Tehran pursued both accommodation along with continuing key aspects of its strategic weapons efforts, to both address threats and exploit opportunities. Related to acquisition, Iran continued its mix of foreign procurement and domestic development of weapons, along with its development of the domestic defense industries and organizations to support future weapons development. Related to threat and use, Iran continued to develop and refine its deterrence strategy based on retaliation as well as its ongoing efforts to develop an asymmetric warfighting strategy, both of which provided the main impetus for Iranian strategic weapons acquisition. As we will see in the third case, Iran's steady progress in these areas provide a key basis for its strategic weapons acquisition, threat, and use in recent years.

CHAPTER EIGHT

Iranian Long-Range Strikes Against State Adversaries, 2019-2023

Jim Lamson

Introduction

This chapter—the third in this report to focus on Iran—looks at a pattern break that occurred from 2019 to 2023. During this time, Iran conducted long-range conventional strikes against its state rivals. This pattern break is different from those examined in the preceding two chapters as it examines Iranian pattern-breaking *behavior* (Category 2) rather than Iran’s responses to surprising *events* (Category 1). The main thrust of this pattern break is Iran’s use of ballistic missiles, cruise missiles, and UAVs to carry out long-range conventional strikes against state actors, namely Saudi Arabia, the United States, and Israel. Indeed, this episode represented a departure from Iran’s past practice in the sense that, it was the first time Tehran conducted long-range conventional strikes against state actors since the Iran-Iraq War.

As with the previous two pattern breaks (the Iran-Iraq War and the 2001-2003 timeframe), the analysis presented below seeks to identify and assess patterns in Iran’s acquisition, threat, and use of strategic weapons and the key drivers and constraints that have shaped them. It does so by examining Iran’s approach to the threat and use of strategic weapons—its military strategy—and its reported acquisition of strategic weapons as the means to support that strategy. In so doing, and in contrast to the previous two cases that had a wider scope,¹ this case focuses just on those elements of Iranian military strategy and weapons acquisition that are relevant to the pattern break, namely its acquisition threat of use, and use of ballistic missiles, cruise missiles, and UAVs directed against state actors. The results, as described below, show that Iran—in conducting strikes against state actors—continued important themes from the earlier cases while also helping to establish the new pattern for its acquisition, threat, and use of strategic weapons that we see today.

Initial Pattern: 2010s

Military Strategy

Much as was the case in the post-2003 pattern outlined in the previous chapter, Iran in the 2010s continued its efforts to enhance its deterrence and asymmetric strategies. As was true in the past, these were primarily directed at the United States and Israel. Indeed, Iran saw the United States as its

¹ Concerns, of course, continue regarding Iran’s nuclear and CBW-relevant intentions, activities, and capabilities, but these areas are not included in the scope of this case.

“number one security threat,”² and “greatest enduring threat.”³ According to Supreme Leader Khamenei, meanwhile, Israel was Washington’s “guard dog” (*sag-e negabban*).⁴

During the 2010s, Iran and Israel engaged in a “shadow war” or “twilight war” beneath the level of open military conflict, which included Israel’s so-called “Campaign Between Wars” or “war-between-wars.” In conjunction with this campaign, Israel conducted air strikes against Iran-related targets in Syria, Iraq, and Lebanon to deter and counter Iranian actions.⁵ It also carried out assassinations and sabotage and also provided support to Iraq-based actors opposed to Iran.⁶

In addition, during this same period, Iranian officials began to highlight Saudi Arabia as a third state rival and potential threat. During the 2010s, Iran’s longtime political rivalry with Saudi Arabia transformed into a military one. According to one source, by this time, Saudi Arabia had become “Iran’s greatest adversary in the region.”⁷ Tehran now viewed Saudi Arabia as an emerging military threat in its own right and not only through its role in hosting U.S. military forces. According to Abdolrasool Divsallar, Tehran now saw Saudi Arabia as a “hostile state” and “its most capable regional foe” that now posed a “direct military threat” to Iran, and Tehran began to address the Saudi threat—not just the presence of U.S. military forces in the country—in its military strategy and weapons acquisition.⁸

Against this backdrop, it is unsurprising that, by the late 2010s, Iranian officials had identified the United States, Israel, and Saudi Arabia as their country’s key state rivals and threats. Indeed, in 2018, the IRGC referred to the three states as the “evil triangle” (*masalas-e khabis*),⁹ and a year later, IRGC official Gholam Ali Rashid stated that the country faced a strategic confrontation (*riyaru-e rabborde*) with this “coalition” (*etelaaf*) when it came to maintaining Iran’s stability, existence, and regional status and power.¹⁰

² Seyed Hossein Mousavian with Shahir ShahidSaless, *Iran and the United States: An Insider’s View on the Failed Past and the Road to Peace* (New York: Bloomsbury, 2014), Kindle edition, location 5483.

³ U.S. Defense Intelligence Agency, “Iran Military Power: Ensuring Regime Survival and Securing Regional Dominance,” 2019, https://www.dia.mil/Portals/110/Images/News/Military_Powers_Publications/Iran_Military_Power_LR.pdf, pp. 12, 22.

⁴ “chera rezhim-e sehionisti ‘sag-e negabban’-e Amrikast?” [why is the Zionist regime America’s “guard dog”?], *Defa Press*, 20 Azar 1389 [December 11, 2011], <https://defapress.ir/fa/news/128751/>.

⁵ Marta Furlan, “Israeli-Iranian relations: past friendship, current hostility,” *Israel Affairs*, February 2022, <https://www.tandfonline.com/doi/pdf/10.1080/13537121.2022.2041304>, p. 6; Anna Ahronheim, “Israel will pay,’ Iran warns after IRGC officers killed in Syria strike,” *Jerusalem Post*, March 9, 2022, <https://www.jpost.com/breaking-news/article-700707>.

⁶ Dalia Dassa Kaye, Alireza Nader, and Parisa Roshan, *Israel and Iran: A Dangerous Rivalry* (Santa Monica: RAND Corporation, 2011), pp. 43-44, 60-63.

⁷ Yaakov Katz and Yoaz Hendel, *Israel vs. Iran: The Shadow War* (Washington, D.C.: Potomac Books, 2021), p. 6.

⁸ Abdolrasool Divsallar, “The Militarization of Iran’s Perception of Saudi Arabia,” *The Muslim World*, Vol. 113, No. 1-2 (2023), <https://onlinelibrary.wiley.com/doi/epdf/10.1111/muwo.12465>, pp. 2-3.

⁹ “bayanieh-ye sepah baraye ruz-e sanat-e defai: bazdaranegi-e defai-e Iran, doshmanan ra az harguneh-ye majerajui barhezar dashteh ast” [IRGC statement for defense industry day: Iran’s defensive deterrence has warned enemies from any adventure], *Mebr News*, 31 Mordad 1397 [August 22, 2018], <https://www.mehrnews.com/news/4382023/>.

¹⁰ “hoshdar-e sarlashkar Rashid be saran-e Amrika: nesbat be hefz-e jan-e niru-ha-yetan masulaneh raftar konid” [warning of general Rashid to American leaders: be responsible for saving the lives of your troops], *Tasnim News*, 2 Tir 1398 [June 23, 2019], <https://www.tasnimnews.com/fa/news/1398/04/02/2038461/>.

This is not to say, however, that Iran did not perceive threats from non-state actors during this time, as well. On the contrary, Iranian officials during the 2010s also highlighted lower-level threats against Iran from the MeK, Kurdish opposition groups based in Iraq, and the Islamic State of Iraq and the Levant (ISIL), which Iran referred to as “Daesh.” Interestingly, however, Tehran often claimed that ISIL was created, supported, and equipped by state actors—the United States and Saudi Arabia—to weaken Iran and its partners.¹¹ For example, in 2019, IRGC-ASF commander Amir Ali Hajizadeh alleged that the United States created and supported ISIL with Saudi support, including supplying ISIL and transporting its commanders.¹²

The threats Iran perceived from state actors appeared quite pronounced during the early part of the decade, including Israeli and U.S. threats and reported plans to attack Iran’s nuclear facilities.¹³ Although the threat of attack decreased once Iran agreed to limit its nuclear activities under the 2013 interim Joint Plan of Action and 2015 Joint Comprehensive Plan of Action (JCPOA), Tehran’s threat perceptions ramped back up when the United States withdrew from the JCPOA in 2018 and began to implement its “Maximum Pressure” campaign against Iran, which included extensive sanctions and efforts to halt Iranian oil exports.¹⁴ Indeed, in 2018, former Iranian diplomat Sayyed Hossein Musavian stated that President Trump had begun an economic war (*jang-e eghtesadi*) against Iran and that the U.S. threat to Iran consisted of three elements, namely the U.S. departure from the JCPOA, calls by U.S. officials for regime change in Iran, and U.S. efforts to cut Iran’s oil exports to zero.¹⁵ Iranian officials referred to this U.S. approach as a military and economic “below war” (*madun-e jang*) strategy aimed at weakening Iran’s defense and military power.¹⁶ According to IRGC commander Hossein Salami, Iran was in a “full-scale intelligence war” (*jang-e tamam-e ayar-e etelaati*) against the United States and the “front” (*jebbeh*) of Iran’s enemies and faced a combination of psychological operations, cyber operations, military movements, public diplomacy, and attempts to instill fear and terror.¹⁷

Seemingly paradoxically, however, and despite these perceived state and non-state threats, Iranian leaders conveyed increased strategic confidence in the country’s position—similar to that shown in

¹¹ U.S. Defense Intelligence Agency, “Iran Military Power,” 2019, p. 12.

¹² Hajizadeh interview, 2019, in “How likely is the possibility of a military conflict between Iran and the US?”, <https://www.youtube.com/watch?v=rExXOyJNXh8>.

¹³ “Israel: Possible Military Strike Against Iran’s Nuclear Facilities,” Congressional Research Service, September 28, 2012.

¹⁴ David Mortlock, “Trump’s JCPOA Withdrawal Two Years On: Maximum Pressure, Minimum Outcomes,” Issue Brief, Atlantic Council, May 2020, https://www.atlanticcouncil.org/wp-content/uploads/2020/05/AC_Trump%E2%80%99s-JCPOA-Withdrawal-Two-Years-On_David-Mortlock.pdf; Josh Rogin, “No More Waivers: The United States Will Try to Force Iranian Oil Exports to Zero,” *Washington Post*, April 21, 2019.

¹⁵ “Musavian: ravabet-e Iran va Amrika dar sharayet-e ‘tahdid dar moghabel-e tahdid’ be sar mibarak” [Musavian: relations of Iran and America are in conditions of “threat versus threat”], *Ensaf News*, 24 Mordad 1397 [August 15, 2018], <http://www.ensafnews.com/128931/>.

¹⁶ “mozakereh ba Amrika yani aghab mandan az ghafelch-ye pishraft / jaye matalebgari-e kaf-e khiaban nist” [negotiating with America means lagging behind the caravan of progress / there is no place to make demands on the street floor], *Sobhe Qazvin*, 30 Mordad 1397 [August 21, 2018], <https://sobheqazvin.ir/news/322604/>; “sardar Jalali: Amrika elam-e ‘jang-e sayberi’ kardeh ast / emruz ma dar yek moghiat-e pasa-piruzi va pasa-fath be sar mibarim” [general Jalali: America has declared a “cyber war” / today we are in a post-victory and post-conquest situation], *Rasekhoon*, 11 Aban 1398 [November 2, 2019], <https://rasekhoon.net/news/show/1472135/>.

¹⁷ “sardar Salami: moghias-e amal-e etelaat-e sepah kol-e nezam va enghelab va joghrafia-ye tahdid alaieh Iran ast” [general Salami: the scale of action of IRGC intelligence is the total system and revolution and the geography of the threat against Iran], *Fars News*, 28 Ordibehesht 1398 [May 18, 2019], <https://www.farsnews.ir/news/13980228000805/>.

the mid-to-late 2000s—and also highlighted the perceived vulnerabilities of U.S. military forces in the region. In 2016, for example, IRGC-ASF commander Hajizadeh communicated this confidence by claiming that the United States did not dare attack Iran, despite its earlier plans to do so, because Iran had become highly capable and created a deterrent.¹⁸ He later noted that U.S. leaders and military now lacked the will for a war with Iran and claimed that Iran was not the same country it was thirty years ago when it could not respond to U.S. actions. He further added that the IRGC could target U.S. bases throughout the region as well as U.S. naval forces out to 2,000 km.¹⁹

With this evolving threat environment and high level of Iranian strategic confidence as a backdrop, Iran continued its efforts to refine its military strategy during the 2010s, especially its deterrence and asymmetric strategies.

Increased Emphasis on Offensive Elements of Strategy

During the 2010s, Iranian officials highlighted the increasing role of offensive approaches and capabilities in the country's military strategy, which shaped both its deterrence and asymmetric strategies. According to one report, Iran's "pivot" to a more offensive military strategy began around 2009-2011 and has since been driven by its evolving threat perceptions and its increased military capabilities.²⁰ Like other themes identified in the preceding chapters, this perceived importance of offensive capabilities had its origins in the Iran-Iraq War. For example, as noted elsewhere, IRGC official Gholam Ali Rashid stated that a key lesson of that war was that Iran needed offensive power (*ghodrat-e tahajomi*) in the areas of ballistic and cruise missiles.²¹

Reflecting this idea, three decades later, in 2016, Supreme Leader Khamenei called for an increase in offensive capability (*tavan-e tahajomi*) in addition to defense on the grounds that it was Iran's "inalienable right" to ensure its security by increasing both offensive and defensive power.²² Consistent with this view, IRGC-ASF commander Hajizadeh emphasized that Iran could not create security without an attack capability and needed a combination of offensive and defensive weapons.²³ Iranian military officials also highlighted how the IRGC's strategy was defensive at the strategic level but offensive (as well as defensive) at the operational and tactical levels, reflecting an

¹⁸ "sardar Hajizadeh onvan kard: tavanmandi-e mushaki: amel-e bazdarandegi / taktak mushak-ha be hadaf esabat mikonand" [general Hajizadeh stated: missile capability: deterrence factor / individual missiles strike the target], *Mehr News*, 29 Farvardin 1395 [April 17, 2016], <https://www.mehrnews.com/news/3601322/>.

¹⁹ Hajizadeh interview, in "How likely is the possibility of a military conflict between Iran and the US?", <https://www.youtube.com/watch?v=rExXOyJNXh8>.

²⁰ Nicholas Carl, "Pivot to Offense: How Iran is Adapting for Modern Conflict and Warfare," American Enterprise Institute, June 2023, <https://www.aei.org/wp-content/uploads/2023/05/Pivot-to-Offense-How-Iran-Is-Adapting-for-Modern-Conflict-and-Warfare.pdf>, pp. 8-11.

²¹ Mohammad Dorudian, *Naghbi Bar Dars-ha va Dastavard-ha-ye Jang: Goftegu ba Farmandehban va Masulan-e Jang* [going through war lessons and achievements: discussions with war commanders and officials], Tehran: IRGC markaz-e asnad va tahghighat-e defa-e moghadas [IRGC center of documents and research of holy defense], 1401 (March 2021-March 2022), p. 128.

²² "magham-e moazam-e rahbari: tavan-e defai va tahajomi ra afzayesh dehid / gheyr az selah-e shimiiai va hasteh-i, mahdudiati dar gostarsh-e sanaye defai nadarim" [supreme leader: increase offensive and defensive capability / other than chemical and nuclear weapons, we do not have a limit in the expansion of defense industries], *Asr Iran*, 10 Shahrivar 1395 [August 31, 2016], <https://www.asriran.com/fa/news/490989/>.

²³ Interview with Hajizadeh, Islamic Republic of Iran News Network (IRINN), March 2016, <https://www.mp4.ir/Video?Watch=1013-710859016>.

increased emphasis on the offense. They further noted that attack capabilities enhance deterrence and provide the best defense against an enemy with aggressive intentions.²⁴

Deterrence Strategy

As in previous decades, deterrence continued to play a central role in Iran's military strategy. According to the IRGC's Hossein Salami, deterrence was the foundation of Iran's military strategy, and its missile capabilities formed a key "axis" (*mehvar*) for deterrence.²⁵ As before, Iran's deterrence strategy was under the overall framework of all-dimensional deterrence (*bazdaran-degi-e hameh-janebeh*), but now Iranian officials emphasized the importance of "active deterrence" (*bazdaran-degi-e ja'el*)²⁶ within this framework—another apparent reflection of the increased emphasis on offensive strategy. For instance, an AFGS official noted that with the removal of the shadow of war and military attack against Iran, Iran's deterrent power was now based on "active deterrence," in which Iran would pursue any aggressor until its destruction and surrender.²⁷

Consistent with the approach above, and as yet another example of an increased emphasis on offensive strategy, Iranian officials also described an important shift by 2016 in their country's deterrence strategy from just "defensive deterrence" to "defensive and offensive deterrence" (*bazdaran-degi-e defai va tahajomi*). This latter element included the shift from focusing on Iran's capability to confront and impose costs on enemy threats to working to enhance its ability to threaten its enemies.²⁸ This shift was reflected to a push by Iranian leaders for an emphasis on offensive capabilities in addition to defensive ones. In 2017, for instance, MODAF's agenda included a plan to increase offensive capabilities along with defensive ones.²⁹

Another strategic principle highlighted by Iranian officials during the 2010s, and one that aligned with Iran's increased emphasis on offensive elements of strategy, was "threat against threat." This principle was based in part on a speech by Supreme Leader Khamenei in 2011, when he stated that Iran was "not a nation to sit and watch" the threats against it, but that "in the face of threat, we will

²⁴ "rahbord-e defai-e sepah-e pasdaran dar sath-e amaliyati, tahajomi be dooshman ast" [IRGC's defense strategy, at the operational level, is offensive toward the enemy], *Mehr News*, 1 Dey 1397 [December 22, 2018], <https://www.mehrnews.com/news/4491877/>.

²⁵ Interview with Salami, Iranian Islamic Republic of Iran Broadcasting 2 (IRIB2) TV network, 2019, <https://www.youtube.com/watch?v=YzfkmtlgUww>.

²⁶ "Hassan Rouhani 'bazdaran-degi-e fael' ra rahbord-e jomhuri-e eslami moarefi kard" [Hassan Rouhani introduced the Islamic republic's strategy as "active deterrence"], *Radio Farda*, 29 Farvardin 1394 [April 18, 2015], <https://www.radiofarda.com/a/26964717.html>; "amir Hatemi: rahbord-e nezami-e Iran bazdaran-degi-e fael ast" [general Hatemi: Iran's military strategy is active deterrence], *Iran Press*, 17 Dey 1397 [January 7, 2019], <https://farsi.iranpress.com/iran-i157678>.

²⁷ "sardar Jazayeri: tavan-e bazdaran-degi-e Iran mobtani bar bazdaran-degi-e fael ast / dastgah-ha-ye etelaati-e Amrika ghader be dark-e tavanmadi-ha-ye defai-e keshvar-eman nistand" [general Jazayeri: Iran's deterrence capability is based on active deterrence / America's intelligence agencies do not understand our country's defense capabilities], *Quds Online*, 25 Ordibehesht 1396 [May 15, 2017], <http://www.qudsonline.ir/news/529576/>.

²⁸ "Doktrin-e defai-ye Iran az 'defa-e sarf' be 'afzayesh-e tahdid baraye dooshman' taghir yafteh" [Iran's defense doctrine changed from 'cost-inducing defense' to 'increasing the threat to the enemy'], *Tasnim News*, 10 Mehr 1395 [October 1, 2016], <https://www.tasnimnews.com/fa/news/1395/07/10/1198210>.

²⁹ "barnameh-ye sartip setad Amir Hatemi, vazir-e pishnehadi-e vezarat-e defa va poshtibani-e niru-ha-ye mosalah" [program of general Amir Hatemi, proposed minister of the ministry of defense and armed forces logistics], Office of the Iranian President, Mordad 1396 [July-August 2017], <http://media.dolat.ir/uploads/org/150217369479275300.pdf>.

threaten” (*ma dar moghabel-e tabdid, tabdid mikonim*).³⁰ This idea was reportedly operationalized by the military—especially the IRGC—as the strategy of “threat against threat” (*tabdid dar moghabel-e tabdid* or *tabdid dar barabar tabdid*), and appeared aimed at drastically increasing Iran’s qualitative and quantitative capabilities to threaten its enemies. In 2011, the IRGC’s Salami stated that based on the strategy of “threat against threat” pronounced recently by the Supreme Leader, Iran was revising its military strategy to address new military threats from the United States and Israel.³¹ In 2012, an AFGS official stated that with this strategy change of “threat against threat,” Iran would no longer wait for enemies to take action against it and would take retaliatory action.³² In 2019, an AFGS official stated that “threat against threat” means that if the enemy fires a shot at Iran, it would fire 10 shots in response and impose a heavy penalty.³³ According to Matthew McInnis, Iran’s “threat in response to threat” strategy was the “centerpiece” of its deterrence strategy and involved an Iranian response to “any attack with appropriately painful retaliatory actions that can convince an enemy either not to initiate conflict in the first place or to de-escalate quickly.”³⁴

Similarly, another aspect of Iran’s increased emphasis on offensive strategy was the principle, as stated by Supreme Leader Khamenei, that the “era of hit and run is over” (*duran-e bezan va dar ru tamam shodeh*). Although first conveyed in 2007 by Khamenei,³⁵ its use by Iranian officials was more pronounced in the 2010s and conveyed a not-so-veiled threat that Iran would respond forcefully to any military attack. According to Khamenei, the attacker would “get its feet stuck” and Iran “would pursue” it.³⁶

As a final key element of Iran’s deterrence strategy, military officials—as in previous decades—continued to emphasize the role of retaliation, both threatened and actual, as an important element of deterrence. In 2010, the IRGC’s Salami—concurrently the SCNS deputy for defense—stated that Iran must have “deterrent retaliation power” (*ghodrat-e moghabeleh-ye bazdarandeh*) and the capability to defeat the enemy with a surprising, crushing response. Salami claimed that Iran’s defense power had never been so strong for defense and retaliation.³⁷ According to IRGC Navy commander Ali Fadavi,

³⁰ “bayanat dar daneshgah-e afsari-e Imam Ali” [speech at Imam Ali officer university], official website of the office of Supreme Leader Khamenei, 19 Aban 1390 [November 10, 2011], <https://farsi.khamenei.ir/speech-content?id=17868>.

³¹ “Threat against threat’ is Iran’s new defense doctrine: IRGC deputy chief,” *Tehran Times*, November 28, 2011, <https://www.tehrantimes.com/print/394319/Threat-against-threat-is-Iran-s-new-defense-doctrine-IRGC>.

³² “sartip Hejazi: baraye eghdam alayeh doshmanan, montazer-e eghdam-e anha nemimanim” [general Hejazi: we do not wait for enemies’ actions to act against them], *BBC News*, 2 Esfand 1390 [February 21, 2012], https://www.bbc.com/persian/iran/2012/02/120221_120_hejazi_defence.

³³ “mosahebeh / sardar Shekarchi: shelik-e yek tir be samt-e Iran manafe-e Amrika va ham-peymananesh ra be atash mikeshad / vaziat-e emruz mantegheh be naf-e jomhuri-e eslami ast” [interview / general Shekarchi: firing a shot at Iran will harm the interests of America and its allies / the current situation in the region is in favor of the Islamic Republic], *Tasnim News*, 1 Tir 1398 [June 22, 2019], <https://www.tasnimnews.com/fa/news/1398/04/01/2037567/>.

³⁴ J. Matthew McInnis, “The Future of Iran’s Security Policy: Inside Tehran’s Strategic Thinking,” American Enterprise Institute, May 2017, p. 104.

³⁵ “bayanat dar didar-e kar-gozaran-e nezam” [statement in meeting with the officials of the system], official website of Supreme Leader Khamenei, 31 Shahrivar 1386 [September 22, 2007], <https://farsi.khamenei.ir/speech-content?id=3402>.

³⁶ “duran-e bezan va dar ru tamam shodeh ast” [the era of hit and run is over], official website of Supreme Leader Khamenei, 21 Khordad 1394 [June 11, 2015], <https://farsi.khamenei.ir/video-content?id=29939>.

³⁷ “sardar Salami: peyman-e estratezhik-e keshvar-ha-ye mantegheh ba solteh-garan movajeb-e tolid-e ghodrat nimishavad” [general Salami: a strategic agreement between the countries of the region and the rulers does not lead to the production of power], *Mehr News*, 10 Esfand 1388 [March 1, 2010], <https://www.mehrnews.com/news/1043516/>.

Iran's policy was readiness to execute retaliatory operations (*amaliyat-e moghabeleh be mesl*),³⁸ and SCNS secretary Ali Shamkhani stated that, as part of its security doctrine, Iran's military strategy sought to create deterrence by relying on a strategy of "second strike" (*zarbeh-ye dovom*).³⁹ Consistent with these statements, in 2015, the U.S. Department of Defense noted that Iran's military strategy was "designed to deter an attack, survive an initial strike, and retaliate against an aggressor to force a diplomatic solution to hostilities while avoiding any concessions that challenge its core interests."⁴⁰

To bolster its general statements about its policy of retaliation, Iranian officials also made specific threats to retaliate against U.S. and Israeli targets if Iran was attacked.⁴¹ Additionally, Tehran resumed retaliatory operations using strike weapons against non-state actors, similar to its practice of the late 1990s-2001. Leading up to the pattern break, during 2017-2019, the IRGC conducted ballistic missile and UAV attacks against ISIL in Syria and Iraq and against Kurdish opposition groups based in Iraq, in retaliation for attacks on Iranian targets.⁴² According to the U.S. Director of National Intelligence, such retaliatory attacks "were most likely intended to send a message to potential adversaries, showing Tehran's resolve to retaliate when attacked and demonstrating Iran's improving military capabilities and ability to project force."⁴³

Asymmetric Strategy

In the 2010s, Iran continued to refine its asymmetric strategy as described in the previous chapter. As before, the strategy was nested under the general framework of "all-dimensional defense" (*defa-e hameh-janebeh*),⁴⁴ parallel to Iran's framework of "all-dimensional deterrence" noted above. Speaking

³⁸ "Fadavi dar pasokh be mehr: amadeh-ye moghabeleh be mesl dar surat-e baz-rasi-e keshti-ha hastim" [Fadavi in response to Mehr: we are ready for retaliation in the case of ship inspections], *Mehr News*, 19 Mordad 1389 [August 10, 2010], <https://www.mehrnews.com/news/1131353/>.

³⁹ "Shamkhani: doktrin-e amniyati-e Iran bar payeh-ye tavan-e narm va estratezhi-e zarbeh-ye dovom ast" [Shamkhani: Iran's security doctrine is based on soft capability and second strike strategy], *Tasnim News*, 21 Azar 1395 [December 11, 2016], <https://www.tasnimnews.com/fa/news/1395/09/21/1264712/>.

⁴⁰ U.S. Department of Defense, "Fiscal Year 2014 Annual Report on Military Power of Iran," January 2015.

⁴¹ "Commander: IRGC Will Destroy 35 U.S. Bases in Region if Attacked," *Fars News*, July 4, 2012; "Deputy Top Commander: Crushing Response Waiting for U.S. Military Threats against Iran," *Fars News*, July 3, 2015; Marcus George and Zahra Hosseinian, "Iran Will Destroy Israeli Cities if Attacked: Khamenei," *Reuters*, March 21, 2013, <https://www.reuters.com/article/uk-iran-khamenei/iran-will-destroy-israeli-cities-if-attacked-khamenei-idUKBRE92K0LB20130321>; "Iranian Top Commander: Zionists' Attack against Iran Ends in Razing Israel," *Fars News*, July 10, 2015.

⁴² "zarbat-e zolfaghar' bar sar-e terrorist-ha / entegham-e mushaki-e sepah az Daesh dar khak-e Surieh" ["strike of Zolfaghar" on terrorist leaders / IRGC missile revenge on Daesh on Syrian territory], *Tasnim News*, 29 Khordad 1396 [June 19, 2017], <https://www.tasnimnews.com/fa/news/1396/03/29/1440456/>; "gozaresh-e ekhtesasi: mostanadat-e esabat-e mushak-ha-ye sepah be mavaze-e terrorist-ha-ye hadka" [exclusive report: documentation of IRGC missiles hitting hadka terrorist positions], *Tasnim News*, 20 Shahrivar 1397 [September 11, 2018], <https://www.tasnimnews.com/fa/news/1397/06/20/1825093/>; "ravabet-e omumi-e kol-e sepah montasher kard: joziat-e amaliyat-e 'zarbat-e moharam' / bombaran-e maghar-e terrorist-ha pas az hamleh-ye mushaki ba 7 farvand pahpad-e razmi" [IRGC public relations published: details of "moharam strike" / bombing of terrorist officials after missile attack with 7 combat UAVs], *International Quran News Agency (IQNA)*, 9 Mehr 1397 [October 1, 2018], <https://iqna.ir/fa/news/3751644/>; "sepah-e pasdaran goluleh-baran-e manategh-e marzi-e aghlim-e kordestan-e Iraq ra taid kard" [IRGC confirmed the shelling of the border areas of the Kurdistan Region of Iraq], *Radio Farda*, 21 Tir 1398 [July 12, 2019], <https://www.radiofarda.com/a/IRGC-strikes-Iraqi-Kurdistan/30052105.html>.

⁴³ Office of the Director of National Intelligence, "Worldwide Threat Assessment of the U.S. Intelligence Community," January 29, 2019, <https://www.dni.gov/files/ODNI/documents/2019-ATA-SFR--SSCI.pdf>, p. 29.

⁴⁴ For instance, in 2016, a representative of Supreme Leader Khamenei stated that the military strategy put forward by Khamenei included all-dimensional defense (*defa-e hameh-janebeh*) and "reciprocal response to the enemy" (*pasokh-e*

in 2017, defense minister Amir Hatami stated that the most important principle of Iran's military strategy was all-dimensional defense (*defa-e hameh janebeh*) with an active deterrence approach. If the enemy dared to attack Iran, he indicated, all components of the regime's power would help the defense.⁴⁵

Iran's asymmetric strategy was in large part intended to counter the technological superiority of the United States. According to Artesh Ground Force (IRIGF) commander Ahmad Reza Purdestan, asymmetric warfare took place between two countries, one of which has very high military technologies and the other country lacks these technologies.⁴⁶ According to the DIA, Iran's asymmetric strategy was intended to "exploit the perceived weaknesses of its enemies." It was also conceived of as a means to defend against "air attack and ground invasion by a technologically superior adversary, primarily the United States."⁴⁷

Military Exercises

Iran's armed forces—both the IRGC and Artesh—continued to conduct military exercises to improve their readiness and capabilities to support the country's deterrence and asymmetric strategies. Iran's exercises included the use of ballistic missiles, cruise missiles, long-range artillery rockets, and UAVs, and used mock U.S. air bases and aircraft carriers as targets. Many exercises emphasized offensive retaliatory attacks using missiles, rockets, and UAVs—especially by the IRGC—reflecting Iran's increased emphasis on offensive approaches and capabilities noted above.⁴⁸

Reliance on Axis of Resistance for Deterrence and Asymmetric Strategies

In addition to relying on its own strategy and capabilities, during the 2010s, Iran appeared to increase its reliance on its Axis of Resistance (*mehvar-e moghavemat*) partners in the region both to support its deterrence and asymmetric strategies and also to expand its strategic depth. Indeed, according to one Iranian government report, Iran transferred weapons, including missiles and rockets, to its regional non-state partners such as Lebanese Hezbollah as a tool to create regional asymmetric deterrence (*bazdarandegi-e na-motegharen-e mantegheb-i*) and shift the "balance of threat"

moteghabel be doshman). ("namayesh-e eghtedar-e niru-ha-ye mosalah" [exhibition of the power of the armed forces], Khorasan Cultural and Art Institute, September 21, 2016,

<http://sistanbaloochestan.khorasannews.com/newspaper/BlockPrint/21950>.)

⁴⁵ "vazir-e defa va poshtibani-e niru-ha-ye mosalah: asl-e doktrin-e defai-e Iran, defa-e hameh-janebeh ba ruikard-e bazdarandegi-e fael ast" [minister of defense and armed forces logistics: principle of Iran's defense doctrine is all-dimensional defense with approach of active deterrence], *Iran's Metropolis News Agency (IMNA)*, 7 Shahrivar 1396 [August 29, 2017], <https://www.imna.ir/news/317211/>.

⁴⁶ "artesh do razmayesh bargozar mikonad: dastavard-ha-ye jadid-e artesh: runamai-e sistem-ha-ye jadid-e jang-e elektronik va pahphad-ha" [artesh will hold two exercises: new artesh achievements: unveiling of new electronic warfare and UAV systems], *Mebr News* 23 Farvardin 1390 [April 12, 2011], <https://www.mehrnews.com/news/1287137/>.

⁴⁷ U.S. Defense Intelligence Agency, "Iran Military Power," 2019, pp. 12, 23.

⁴⁸ "no-avari-ha-ye razmayesh-e mushaki-e peyambar azam 7" [innovations of great prophet 7 missile exercise], *Islamic Republic News Agency (IRNA)*, 14 Tir 1391 [July 4, 2012], <https://www.irna.ir/news/80214657/>; "baraye avalin bar: enhedam-e maket-e abad-e vaghei-e nav-e 'USS Nimitz'-e Amrika tavasot-e mushak-ha-ye niru-ye daryai-e sepah" [for the first time: destruction of the real-size mockup of the "USS Nimitz" by the missiles of the IRGC Navy], *Raja News*, 6 Esfand 1393 [February 25, 2015], <https://www.rajanews.com/news/199698>; "razmayesh-e pahpadi-e sepah / hamleh-ye ham-zaman-e '50 farvand-e pahpad-e RQ170-e Irani' be ahdaf" [IRGC UAV exercise / simultaneous attack of "50 Iranian RQ170 UAVs" against targets], *Tasnim News*, 23 Esfand 1397 [March 14, 2019], <https://www.tasnimnews.com/fa/news/1397/12/23/1968786/>.

(*mavażaneh-ye tabdid*) vis-à-vis the United States and Israel.⁴⁹ According to Hamidreza Azizi, Iran established its Axis of Resistance network in large part as “a means for asymmetric deterrence against the United States and its regional allies” and to enable Iran to “target its adversaries’ interests in areas far away from the Iranian borders.”⁵⁰ As a 2011 RAND report surmised, Iran’s asymmetric strategy relied in part on its “proxy” groups to deter and retaliate against U.S. and Israeli military action against the country.⁵¹

As this analysis suggests, providing weapons to its Axis partners emerged as an important way of threatening “military costs on Iranian adversaries,” deterring attack, and increasing Iran’s “strategic depth.” As a result, according to Abdolrasool Divsallar and Hamidreza Azizi, the Axis became “one of the pillars of Iran’s deterrence strategy” as a “means of asymmetric deterrence.”⁵²

Correspondingly, and reflecting the role of Iran’s Axis of Resistance partners in its military strategy, an IRGC official in 2016 described Iran’s asymmetric strategy as being composed of three levels: 1. Equipment (*tajhizat*), including missiles to target U.S. bases in the region or Israel; 2. Activists (*konesh-garan*), including support for Axis of Resistance groups; and 3. Geography (*joghrafiā*), where Iran had moved the “arena of confrontation” (*arseh-ye ruyarui*) outside of its borders and created strategic depth (*omgh-e estratezhik*) to increase its security.⁵³

*Weapons Acquisition*⁵⁴

Leading up to the pattern break, Iran’s increased emphasis on offensive elements of its military strategy outlined above, and the requisite need for enhanced offensive capabilities—the means for the strategy—probably drove Iran’s high priority of acquiring long-range conventional strike capabilities of ballistic missiles, LACMs, and UAVs. Iran’s expanding programs for these weapon systems aligned with the various offensive elements above, including enhancing offensive capabilities; relying on offensive operations and tactics; pursuing active deterrence, offensive deterrence, and “threat against threat” strategies to drastically increase threats against Iran’s enemies; not allowing enemies to “hit and run”; and relying on the threat and use of retaliatory strikes. Ballistic missiles, LACMs, and UAVs all fit well as important “means” with which to operationalize these offensive elements of strategy.

Based on the technological and organizational foundations created in the previous decades, Iran expanded its ballistic missile, LACM, and UAV acquisition efforts, in terms of the numbers of

⁴⁹ “taghviat-e bazdaranegi-e mantegheh-i va enteghal-e arz: saderat-e taslihat-e jomhuri-e eslami-e Iran: forsāt-ha va zarfiat-ha” [strengthening regional deterrence and transfer of foreign currency: weapons exports of the Islamic Republic of Iran: opportunities and capabilities], Iran’s Center for Strategic Research (*pażhubeshkadeh-ye tabghihat-e rabbordi*), 31 Shahrivar 1399 [September 3, 2020], <https://csr.ir/fa/news/1063/>.

⁵⁰ Hamidreza Azizi, “The Concept of ‘Forward Defense’: How Has the Syrian Crisis Shaped the Evolution of Iran’s Military Strategy?” Syria Transition Challenges Project, Geneva Centre for Security Policy, February 2021, <https://dam.gcsp.ch/files/doc/iran-forward-defence-strategy-en>, pp. 10-14.

⁵¹ Kaye, Nader, and Roshan, *Israel and Iran: A Dangerous Rivalry*, pp. 63-64.

⁵² Abdolrasool Divsallar and Hamidreza Azizi, “Towards a non-Western model of security assistance: How Iran assist[s] militaries,” *Mediterranean Politics*, February 2023, pp. 3, 7.

⁵³ “Doktrin-e defai-ye Iran az ‘defa-e sarf’ be ‘afzayesh-e tahdid baraye doşman’ taghir yafteh” [Iran’s defense doctrine changed from ‘cost-inducing defense’ to ‘increasing the threat to the enemy’], *Tasnim News*, 10 Mehr 1395 [October 1, 2016], <https://www.tasnimnews.com/fa/news/1395/07/10/1198210>.

⁵⁴ Within the context of Iran’s military strategy outlined above, we focus on the pattern of Iranian acquisition of the key capabilities (the means) involved in its attacks against Saudi, U.S. military, and Israeli targets that constitute this pattern break—that is, ballistic missiles, land attack cruise missiles (LACMs), and UAVs.

families of systems, qualitative capabilities (e.g., range and accuracy) and quantitative capabilities (e.g., numbers of systems). This created a strong foundation for what CENTCOM commander Kenneth McKenzie would later refer to as the “triad of Iranian unmanned, long-range strike systems.”⁵⁵ In the 2010s, MODAFL was still the main developer of these systems, but the IRGC, and to a lesser extent the Artesh, emerged as developers of missiles and UAVs in parallel to MODAFL.

Ballistic Missiles

In the 2010s, Iran expanded its development, production, and deployment of ballistic missiles. Within a 2,000-kilometer range limit set by Supreme Leader Khamenei,⁵⁶ Iran worked to increase the types and capabilities of its missiles for targeting Israel as well as U.S. military bases in the region.⁵⁷ Separately, according to Hajizadeh, after achieving its goal of 2,000 km range missiles, Iran focused on developing missiles to fill the gap between its shorter-range missiles and longer-range missiles⁵⁸—that is, developing missiles with ranges of approximately 500 to 1,000 km to target U.S. bases and other sites in the region. For instance, according to Hajizadeh, Iran realized that it needed missiles with a range of 800 km to strike U.S. targets in the region.⁵⁹

As part of its liquid-propellant track, Iran continued production and deployment of the Shahab-1 and Shahab-2 SRBMs and developed longer-range SRBMs including the 800-km-range Qiam, based on the Shahab-2, which was designed to strike U.S. bases.⁶⁰ Iran also worked to develop several improved variants of the Shahab-3 family of MRBMs—with ranges up to 2,000 km—including multiple Ghadr variants⁶¹ and the Emad, Iran’s first precision-strike MRBM.⁶² According to IRGC-

⁵⁵ Kenneth F. McKenzie, Jr., “Striking Back: Iran and the Rise of Asymmetric Drone Warfare in the Middle East,” Washington Institute for Near East Policy, Policy Notes, No. 128, February 2023, p. 2.

⁵⁶ “farmandeh-ye sepah: bord-e mushak-ha tebh-e siyasat-ha-ye rahbar do hezar kilometr tain shodeh ast” [IRGC commander: according to leader’s policies range of missiles has been confirmed at two thousand kilometers], *Radio Farda*, 9 Aban 1396 [October 31, 2017], <https://www.radiofarda.com/a/iran-irgc-commander-jafari-bagheri-ballistic-missiles-two-thousand-leader-order/28826674.html>.

⁵⁷ “sepah: Israel az payegah-ha-ye mushaki-e Semnan ham dar tir-ras-e ma ast” [IRGC: Israel is in our crosshairs from Semnan missile bases], *Radio Farda*, 7 Tir 1390 [June 28, 2011], <https://www.radiofarda.com/a/f12-iran-says-missiles-can-target-us-bases-in-afghanistan/24248787.html>; “sardar Hajizadeh: ezam-e niru be Surieh motevaghaf nashodeh / mushak-ha-ye 2000 kilometri-e sepah makhsus-e zadan-e Israel ast” [general Hajizadeh: sending force to Syria has not halted / IRGC 2000 km missiles are for striking Israel], *Tasnim News*, 19 Esfand 1394 [March 9, 2016], <https://www.tasnimnews.com/fa/news/1394/12/19/1023309/>.

⁵⁸ “amerika be donbal-e ‘falaj-e mushaki’-e Iran / dast-e Iran ruye masheh mimanad” [America is after Iranian “missile paralysis” / Iran’s hand remains on the trigger], *Fars News*, 28 Tir 1394 [July 19, 2015], <https://www.farsnews.ir/news/13940124000086/>. According to the DIA, Iran worked on “extending the range of some of its SRBMs to be able to strike targets farther away, filling a capability gap between its MRBMs and older SRBMs.” (U.S. Defense Intelligence Agency, “Iran Military Power,” 2019, p. 31.)

⁵⁹ “sardar Hajizadeh onvan kard: tavanmandi-e mushaki: amel-e bazdarandegi / taktak mushak-ha be hadaf esabat mikonand” [general Hajizadeh stated: missile capability: deterrence factor / individual missiles strike the target], *Mehr News*, 29 Farvardin 1395 [April 17, 2016], <https://www.mehrnews.com/news/3601322/>.

⁶⁰ “‘qiam’ mushaki keh makhsus-e hadaf gharar dadan-e payegah-ha-ye Amerika ast!” [“qiam” is a missile that is for targeting American bases!], *Quds Online*, 14 Shahrivar 1395 [September 4, 2016], <https://www.qudsonline.ir/news/419336/>.

⁶¹ “sardar Hajizadeh onvan kard: tavanmandi-e mushaki: amel-e bazdarandegi / taktak mushak-ha be hadaf esabat mikonand” [general Hajizadeh stated: missile capability: deterrence factor / individual missiles strike the target], *Mehr News*, 29 Farvardin 1395 [April 17, 2016], <https://www.mehrnews.com/news/3601322/>.

⁶² “ba noghteh-zan-tarin mushak-e Iran ashena shavid” [get acquainted with Iran’s most point-strike missile], *Tabnak News*, 5 Dey 1398 [December 26, 2019], <https://www.tabnak.ir/fa/news/946792/>.

ASF commander Hajizadeh, Iran was able to develop Shahab-3 variants with ranges of 1,350 and 1,650 km, and eventually achieved 2,000 km.⁶³ Iran also worked to develop the Khorramshahr family of MRBMs, reportedly based on the North Korean Musudan (Hwasong-10) missile.⁶⁴

In its solid-propellant track, Iran augmented its capabilities to target U.S. bases in the region by developing new longer-range SRBMs as part of the Fateh family, including the 500-km-range Fateh-313⁶⁵ and 700-km-range Zolfaghar.⁶⁶ In parallel to these MODAFL programs, the IRGC worked to develop the 500-km-range Raad-500⁶⁷ and 1,000-km-range Dezful⁶⁸ solid-propellant ballistic missiles. MODAFL also continued to develop variants of the 2,000-km-range Sejil MRBM.⁶⁹ Thus, during the 2010s, Iran was significantly expanding the types and capabilities of liquid- and solid-propellant SRBMs that could target U.S. bases along with MRBMs that could strike Israel as well as U.S. bases.

As in the previous decade, Iran continued its work to enhance the accuracy of its missiles in addition to increasing their ranges. This included work to improve the accuracy of ballistic missiles to strike both land-based and naval targets. Indeed, in 2015, MODAFL's four-year plan included a focus on increasing the accuracy of missiles,⁷⁰ and according to the DIA, Iran's "use of improved guidance technology and maneuverability during the terminal phase of flight enables these missiles to be used more effectively against smaller targets, including specific military facilities and ships at sea."⁷¹ In 2017, Supreme Leader Khamenei claimed that Iran's missiles could strike targets from a distance of thousands of kilometers with an accuracy of several meters.⁷² One year later, in 2018, Hajizadeh

⁶³ "sardar Hajizadeh onvan kard: tavanmandi-e mushaki: amel-e bazdarandegi / taktak mushak-ha be hadaf esabat mikonand" [general Hajizadeh stated: missile capability: deterrence factor / individual missiles strike the target], *Mehr News*, 29 Farvardin 1395 [April 17, 2016], <https://www.mehrnews.com/news/3601322/>.

⁶⁴ "sevomin sarjangi-e khorramshahr che vizhegi-ha-i darad?" [what specifications does the third warhead of the khorramshahr have?], *Mashregh News*, 31 Shahrivar 1398 [September 22, 2019], <https://www.mashreghnews.ir/news/994870/>; William J. Broad, James Glanz, and David E. Sanger, "Iran Fortifies Its Arsenal With the Aid Of North Korea," *New York Times*, November 29, 2010.

⁶⁵ "ba hozur-e rais-e jomhuri va hamzaman ba ruz-e sanat-e defai: mushak-e noghteh-zan-e fateh 313 runamai shod" [in the presence of the Iranian president and at the time of defense industry day: point-strike fateh 313 missile was unveiled], official website of the Office of the Iranian President, 21 Mordad 1394 [August 12, 2015], <https://www.president.ir/fa/88781>.

⁶⁶ "mushak-e zolfaghar' jadid-tarin mushak-e Irani runamai shod" ["zolfaghar missile" Iran's newest missile was unveiled], *Tasnim News*, 31 Shahrivar 1395 [September 21, 2016], <https://www.tasnimnews.com/fa/news/1395/06/31/1191852/>.

⁶⁷ "enteshar-e sanadi az eghtedar-e Iran dar zaman-e tahrim" [publication of a document of Iran's power in the time of sanctions], *Defa Press*, 21 Aban 1399 [November 11, 2020], <https://defapress.ir/fa/news/425890/>.

⁶⁸ "ba hozur-e farmandeh-ye kol-e sepah: mushak-e 'dezful' ba bord-e 1000 kilometr runamai shod / avalin namayesh az karkhaneh-ye tolid-e mushak-e sepah" [in the presence of the IRGC commander: "dezful" missile with 1000 kilometer range was unveiled / first exhibition of IRGC missile production factory], *Fars News*, 18 Bahman 1397 [February 7, 2019], <https://www.farsnews.ir/news/13971118000809/>.

⁶⁹ "amrika be donbal-e 'falaj-e mushaki'-e Iran / dast-e Iran ruye masheh mيمانad" [America is after Iranian "missile paralysis" / Iran's hand remains on the trigger], *Fars News*, 28 Tir 1394 [July 19, 2015], <https://www.farsnews.ir/news/13940124000086/>.

⁷⁰ "sardar dehghan dar neshasteh-ye khabari onvan kard: tamarkoz-e vezarat-e defa bar ruye degat-e mushak-ha / 4 gordan-e S300 beruz shodeh ra tahvil migirim" [general Dehghan announced in news briefing: focus of the defense ministry on the accuracy of missiles / we accepted delivery of 4 units of upgraded S-300], *Namayande*, 27 Mordad 1394 [August 18, 2015], <http://namayande.com/news/105790/>.

⁷¹ U.S. Defense Intelligence Agency, "Iran Military Power," 2019, p. 31.

⁷² "ma mushak darim, mushak-e daghigh [ham] darim; mushak-e ma hadaf ra az faseleh-i-e chand hezar kilometri ba faseleh-ye chand metri ghader ast bezanad" [we have missiles, we [even] have precision missiles; our missiles can hit the

claimed that Iran's missiles, with ranges up to 2,000 km, were all "point strike" (*noghteh-zan*) and that Iran was also converting its older missiles into point strike.⁷³

In addition to its efforts to enhance accuracy against land-based targets, Iran continued its work to develop increasingly capable anti-ship ballistic missiles (ASBMs). To this end, it developed ASBMs based on the 300-km-range Fateh-110, including the Khalij-e Fars and Hormuz missiles.⁷⁴ In addition, Iran worked to develop longer-range ASBMs, including the 500-km-range Fateh Mobin⁷⁵ and an unidentified 700-km-range missile⁷⁶ which was later unveiled as the Zolfaghar Basir.⁷⁷

During the 2010s, with Iran's increasing missile capabilities and continued work on developing space launch vehicles (SLVs) by both MODAFL and the IRGC, the United States and Western countries repeated their concerns about Iran's possible intentions for IRBMs and ICBMs. MODAFL conducted satellite launches with the Safir SLV⁷⁸ and announced longer-term plans and a roadmap for developing increasingly capable SLVs.⁷⁹ In parallel to MODAFL, the IRGC also worked to develop its own SLV. After a massive explosion in 2011 destroyed its main development facility and halted its efforts,⁸⁰ the IRGC resumed its work on SLV development later in the decade.⁸¹

target from a distance of several thousand kilometers with a distance of several meters], *Mizan News*, 31 Shahrivar 1397 [September 22, 2018], <https://www.mizanonline.com/fa/news/453661/>.

⁷³ "sardar Hajizadeh: mushak-ha-ye ma ta 2000 kilometr noghteh-zan hastand / 700 amaliyat-e pahpadi alayeh daesh" [general Hajizadeh: our missiles to 2000 km are point-strike / 700 UAV operations against daesh], *Mehr News*, 24 Mehr 1397 [October 16, 2018], <https://www.mehrnews.com/news/4431697/>.

⁷⁴ "gozaresh: 'khanevadeh-ye mushak-ha-ye fateh' 10 ozvi shod / 'mobin' dovomin mushak ba mamuriat-e doganeh" [report: "fateh missile family" became 10 members / "mobin" second missile with dual mission], *Tasnim News*, 23 Mordad 1397 [August 14, 2018], <https://www.tasnimnews.com/fa/news/1397/05/23/1801607/>.

⁷⁵ "fateh mobin: mohafez-e shabaneh ruzi-e khalij-e fars" ["fateh mobin" protector night and day of Persian Gulf], *Mashregh News*, 23 Mordad 1397 [August 14, 2018], <https://www.mashreghnews.ir/news/884067/>; "hamleh-ye mushaki-e jadid-e Iran payami be vashengton, riaz va tel-aviv ast" [new Iranian missile attack is a message for Washington, Riyadh, and Tel Aviv], *Defa News*, 18 Shahrivar 1397 [September 9, 2018], <https://defapress.ir/fa/news/308172/>.

⁷⁶ "sardar Hajizadeh: mushak-ha-ye ma ta 2000 kilometr noghteh-zan hastand / 700 amaliyat-e pahpadi alayeh daesh" [general Hajizadeh: our missiles to 2000 km are point-strike / 700 UAV operations against daesh], *Mehr News*, 24 Mehr 1397 [October 16, 2018], <https://www.mehrnews.com/news/4431697/>.

⁷⁷ "jadid-tarin mushak-e sepah ba nam-e 'zolfaghar basir' be namayesh daramad" [newest IRGC missile named "zolfaghar basir" was displayed], *Islamic Republic News Agency (IRNA)*, 6 Mehr 1399 [September 27, 2020], <https://www.irna.ir/news/84056290/>.

⁷⁸ "az safir va simorgh ta soroush va zoljanah: mahvareh-bar-ha-ye Irani ra bishtar beshenasid" [from safir and simorgh to soroush and zoljanah: know better Iranian SLVs], *Tasnim News*, 9 Farvardin 1399 [March 28, 2020], <https://www.tasnimnews.com/fa/news/1399/01/09/2232058/>.

⁷⁹ "Iran be fanavari-e mahvareh-i-e zheo dast miyabad" [Iran will acquire GEO satellite technology], *Aftab News*, 29 Aban 1391 [November 19, 2012], <https://aftabnews.ir/fa/news/178555/>; "film-e kamel-e avalin barnameh-ye Soraya (dastavard-ha-ye fazai 1) – bakhsh-e dovom" [complete film of the first program of Soraya (space achievements 1) – part 2], Soraya TV program, March 2012, <https://www.aparat.com/v/EBdXH>; "film-e kamel-e avalin barnameh-ye Soraya (dastavard-ha-ye fazai 1) – bakhsh-e sevom" [complete film of the first program of Soraya (space achievements 1) – part 3], Soraya TV program, March 2012, <https://www.aparat.com/v/Ss3PO/>.

⁸⁰ William J. Broad, "Images Show Devastation at Iran Base After Blast," *New York Times*, November 29, 2011, <https://www.nytimes.com/2011/11/30/world/middleeast/satellite-images-suggest-blast-obliterated-iran-military-base.html>; "perozheh-ye mushaki mo'ud be samar neshast" [promised missile project came to fruition], *Islamic Republic of Iran News Network (IRINN)*, 19 Aban 1393 [November 10, 2014], <https://www.irinn.ir/fa/news/70915/>.

⁸¹ "tasmim-e mohem-e rahbar-e enghelab keh jaregheh-ye fazai shodan-e sepah ra zad / sepah cheguneh vared-e arseh-ye faza shod?" [important decision of the supreme leader that sparked the IRGC's becoming space / how did the IRGC enter the space arena?], *Khabar Online*, 3 Ordibehesht 1399 [April 22, 2020], <https://www.khabaronline.ir/news/1379973/>.

Such efforts created concerns in Western capitals about Iran's longer-range missile capabilities and intentions. For instance, in 2015, the U.S. Director of National Intelligence (DNI) stated that "Iran's progress on space launch vehicles—along with its desire to deter the United States and its allies—provides Tehran with the means and motivation to develop longer-range missiles, including intercontinental ballistic missiles (ICBMs)."⁸² In 2017, the DNI added that, "Tehran's desire to deter the United States might drive it to field an [ICBM]. Progress on Iran's space program could shorten a pathway to an ICBM because space launch vehicles use similar technologies."⁸³

Land Attack Cruise Missiles (LACMs)

During the 2010s, Iran began to see the fruits of its efforts to develop land attack cruise missiles (LACMs) in addition to its longstanding and expanding work on anti-ship cruise missiles (ASCMs). According to the DIA, the LACMs Iran was developing "present a unique threat profile from ballistic missiles because they can fly at low altitude and attack a target from multiple directions."⁸⁴ Similar to its ballistic missiles, Iran appeared to have a long-term goal of achieving a 2,000 km range for its LACMs, likely with the same aims of targeting both Israel and U.S. bases in the region. As noted in the previous case, Iran's MODAFL since the early 2000s had worked to reverse engineer and develop LACMs based on the former Soviet Kh-55 (AS-15) missile.

In 2012, Iranian officials claimed that their country planned to develop a 2,000-km-range cruise missile called the Meshkat,⁸⁵ and in 2015 MODAFL unveiled the 700-km-range Sumar, Iran's first LACM.⁸⁶ Both efforts reportedly were based on Iran's exploitation of the Kh-55. In 2019, MODAFL unveiled the 1,350-km-range Hoveyzeh LACM,⁸⁷ apparently the next version of its family of Kh-55-based LACMs, which it claimed would increase the military's capability and deterrence power. Also, as of 2018, the IRGC reportedly planned to install an unidentified 1,500-km-range air-launched LACM on its Sukhoi Su-22 aircraft—possibly a reference to the Hoveyzeh or another Kh-55-based LACM.⁸⁸

In parallel to MODAFL's work, during the 2010s, the IRGC reportedly was developing its own LACMs. The IRGC was developing the 700-km-range Ya Ali LACM⁸⁹ and—unknown until the end

⁸² Office of the Director of National Intelligence, "Worldwide Threat Assessment of the U.S. Intelligence Community," Senate Select Committee on Intelligence, February 26, 2015.

⁸³ Office of the Director of National Intelligence, "Worldwide Threat Assessment of the U.S. Intelligence Community," Senate Select Committee on Intelligence, May 11, 2017.

⁸⁴ U.S. Defense Intelligence Agency, "Iran Military Power," 2019, p. 30.

⁸⁵ "meshkat mushak-e kruz-e 2 hezar kilometr-e Iran" [meshkat, Iran's 2,000 kilometer cruise missile], *Asr Iran*, 19 Shahrivar 1391 [September 9, 2012], <https://www.asriran.com/fa/news/231229/>.

⁸⁶ "ba hozur-e vazir-e defa: mushak-e kruz-e zamini 'sumar' runamai shod / tahvil-e anbuhs mushak-ha-ye balestik-e ghadr va ghiam be sepah" [in the presence of the defense minister: 'sumar' ground cruise missile unveiled / mass delivery of ghadr and ghiam ballistic missiles to the IRGC], *Islamic Republic News Agency (IRNA)*, 17 Esfand 1393 [March 8, 2015], <https://www.irna.ir/news/81533290/>.

⁸⁷ "gozaresh-e tahlili: mushak-e kruz-e hoveyzeh: 'dast-e bezan-e jadid' baraye sepah-e pasdaran" [analysis report: hoveyzeh cruise missile: "new striking hand" for the IRGC], *Tasnim News*, 21 Bahman 1397 [February 10, 2019], <https://www.tasnimnews.com/fa/news/1397/11/21/1938156/>.

⁸⁸ "sepah joziat-e mushak-e kruz-e 1500 kilometri-e hava-payeh ra alam kard" [IRGC announced details of 1500 kilometer air-launched cruise missile], *Islamic Republic News Agency (IRNA)*, 16 Mordad 1397 [August 7, 2018], <https://www.irna.ir/news/82994100/>.

⁸⁹ "gozaresh-e tahlili: mushak-e kruz-e hoveyzeh: 'dast-e bezan-e jadid' baraye sepah-e pasdaran" [analysis report: hoveyzeh cruise missile: "new striking hand" for the IRGC], *Tasnim News*, 21 Bahman 1397 [February 10, 2019], <https://www.tasnimnews.com/fa/news/1397/11/21/1938156/>; "ghabeliyat-ha-ye amaliyati-e 8 kruz-e Irani dar tamin-e

of the decade, when Iran used it against Saudi Arabian oil facilities—the 700-km-range “351” LACM.⁹⁰ Thus, through the work of both MODAFL and the IRGC, Iran was adding a long-range strike capability using LACMs to its already formidable SRBM and MRBM capabilities.

Unmanned Aerial Vehicles (UAVs)

During the 2010s, Iran’s long-range strike capabilities using armed and suicide UAVs⁹¹ emerged, based on the technological and organizational foundations laid during the preceding decades. Speaking in 2016-2017, SCNS secretary Shamkhani stated that Iran’s UAVs now had the same status level as missiles and formed an important part, along with missiles, of Iran’s deterrence power.⁹² Iran’s UAV efforts were driven—in addition to the offensive elements noted above—by guidance from Supreme Leader Khamenei. In 2016-2017, he tasked the IRGC with increasing the number of UAVs, which it operationalized into a strategy for using these weapons offensively and in large numbers.⁹³

Iran improved and expanded its families of armed and suicide UAVs, developed in large part by MODAFL but also by the IRGC and Artesh. MODAFL developed and produced armed UAVs such as the Mohajer, Ababil, Karrar, and Fotros families, and suicide UAVs such as the Karrar, Ababil, and Toufan families. In parallel, the IRGC developed and produced Shahed-family armed and suicide UAVs, including several Shahed variants based on its reverse engineering of a captured U.S. RQ-170 Sentinel UAV as well as other Shahed models based on other designs.⁹⁴ The Artesh also entered the arena of UAV development with its own Kaman family of armed UAVs.⁹⁵ Thus, by the end of the decade, Iran operated numerous families of armed and suicide UAVs, many with ranges of hundreds of kilometers.

amniyati-e khalij-e fars va darya-ye Oman” [operational capabilities of 8 Iranian cruise missiles in providing security in the Persian Gulf and Sea of Oman], *Defa Press*, 14 Azar 1394 [December 5, 2015], <https://defapress.ir/fa/news/60396/>.

⁹⁰ International Institute for Strategic Studies, “Open-Source Analysis of Iran’s Missile and UAV Capabilities and Proliferation,” April 2021, pp. 24-25; U.S. Department of Defense, “Central Command Press Briefing Via Teleconference From Tampa, Florida, on Recent Maritime Seizures of Iranian-Produced Weapons,” February 19, 2020, <https://www.defense.gov/News/Transcripts/Transcript/Article/2090000/central-command-press-briefing-via-teleconference-from-tampa-florida-on-recent/>.

⁹¹ Iranian officials refer to armed UAVs (*pahpad-e mosalah*) as those that deliver munitions such as missiles and bombs against a target, and suicide UAVs (*pahpad-e entehari*) as UAVs that strike the targets themselves, similar to cruise missiles.

⁹² Shamkhani interview, in “Iran dar sakht-e pahpad-e bedun-e sarneshin harf-e aval ra mizanad” [Iran takes the lead in the manufacture of unmanned aerial vehicles], *Fars News*, 2017,

<https://www.aparat.com/v/BjEWT/>; “Shamkhani: havapeyma-ha-ye bedun-e sarneshin: bakhsh-e mohemi az ghodrat-e bazdarandegi-e Iran hastand” [Shamkhani: unmanned aircraft: they are an important part of Iran’s deterrence power], *Young Journalists Club (YJC)*, 10 Mehr 1395 [October 1, 2016], <https://www.yjc.ir/fa/news/5801601/>.

⁹³ “tosieh-ye estratezhik-e rahbar-e enghelab be havafaza-ye sepah / Iran cheguneh saheb-e bozorgtarin navgan-e pahpad-e razmi-e mantegheh shod?” [supreme leader’s strategic advice to IRGC aerospace / how did Iran become the owner of the largest fleet of combat drones in the region?], *Jaban News*, 18 Khordad 1399 [June 7, 2020], <https://www.jahannews.com/news/729937/>.

⁹⁴ Michael Rubin, “A Short History of the Iranian Drone Program,” American Enterprise Institute, August 2020, pp. 5-7; United Against Nuclear Iran, “The Iranian Drone Threat,” July 2022, pp. 4-12; “parandeh-ha-ye entehari-e Iran ra bishtar beshenasid: az tufan ta kian” [get more acquainted with Iran’s suicide drones: from tufan to kian], *Young Journalists Club (YJC)*, 3 Dey 1398 [December 24, 2019], <https://www.yjc.ir/fa/news/7182258/>.

⁹⁵ “farmandeh-ye NEHAJA khabar dad: pahpad-e ‘kaman 19’ ba ghabeliat-e ejra-ye mamuriat-e khas dar hal-e sakht ast” [IRIAF commander announced: “kaman 19” UAV with the capability to execute special mission is being manufactured], *Mashreg News*, 30 Mordad 1400 [August 21, 2021], <https://www.mashregnews.ir/news/1261232/>.

As a result of its expanding ballistic missile, LACM, and UAV programs, by the start of the pattern break in 2019, Iran had significantly increased its qualitative and quantitative capabilities for long-range strike. As shown below, these capabilities supported, and indeed were driven by, Iran’s increased emphasis—especially by the IRGC—on offensive elements of military strategy.

Table 6. Iran’s Initial Pattern for Strategic Weapon Acquisition, Threat, and Use

Element of Pattern	Key Organizations
Military Strategy	
Increased emphasis on offensive elements of military strategy	IRGC
Retaliatory deterrence, including retaliatory operations	IRGC Aerospace Force
Asymmetric strategy for deterrence and warfighting	IRGC, Artesh
Military exercises to enhance readiness, deterrence, and asymmetric capabilities	IRGC, Artesh
Reliance on Axis of Resistance for deterrence and asymmetric strategies	IRGC
Acquisition	
Ballistic missiles: Expanding SRBM and MRBM programs, increasing accuracy, concerns about ICBM intentions	MODAFL, IRGC
LACMs: LACMs unveiled for first time	MODAFL, IRGC
UAVs: Expanding armed and suicide UAVs	MODAFL, IRGC, Artesh

Pattern Break: Iranian Long-Range Strikes, 2019-2023

As described at the outset, Iranian military forces conducted long-range strikes against state targets from Iranian territory during the timeframe from 2019-2023, marking a significant change in their behavior from the past. Indeed, while in the late 1990s to 2001 and in the years leading up to this pattern break, Iran had attacked non-state actors based in Iraq and Syria with long-range strikes, this was the first time since the Iran-Iraq War of the 1980s that Iran had attacked a state actor with long-range strikes from Iranian territory. As part of this pattern break, and as described below, Iran conducted these attacks against targets of Saudi Arabia, Israel, and the United States, Tehran’s three main state adversaries. In these attacks, Iran used a mix of strike weapons—ballistic missiles, LACMs, and UAVs—and did so both overtly and covertly. Iran’s attacks appear to have been in response to various adversary policies and actions, including economic warfare, assassination, and short-of-war military actions.

Attacks on Saudi Arabia

As part of this pattern break, in 2019, Iran conducted long-range strikes against Saudi oil facilities and reportedly was preparing for another attack in 2022.

2019 Attack on Saudi Oil Facilities

On September 14, 2019, the IRGC-ASF conducted strikes from Iranian territory against Saudi Aramco oil facilities at Abqaiq and Khurais. The “complex swarm attack”⁹⁶ used at least twenty-five UAVs and LACMs, including approximately eighteen Shahed-series suicide UAVs and seven “351” LACMs.⁹⁷ Iran attempted to conduct the attack covertly, or at least with a level of deniability, and—despite claims by the Yemeni Houthis that they conducted the attack—it was clear that Iran had done so from its own territory. As a result of the strikes, Saudi oil production was cut by about half.⁹⁸

The attack plan was reportedly approved by Iran’s SCNS, the military’s Khatemolania Central Headquarters, and Supreme Leader Khamenei himself, and the IRGC-ASF launched the attack from the Ahvaz Air Base in southwestern Iran. Khamenei reportedly approved the attack on the condition that it was conducted in a way in which Iran could deny its involvement,⁹⁹ and Iranian officials denied their country’s involvement in the attack. Indeed, foreign minister Mohammad Javad Zarif stated that the United States, in claiming that Iran was involved, was resorting to “max deceit” now that its policy of “maximum pressure” had failed.¹⁰⁰ Such statements, however, appear to have done little to convince Iran’s rivals of its innocence. Saudi officials called the strike an “attack on the global economy” and claimed it was “sponsored” by Iran.¹⁰¹ U.S. and Western officials condemned the attack and blamed Iran.¹⁰² U.S. secretary of state Mike Pompeo called the strike an “act of war” and an “unprecedented attack on the world’s energy supply.” President Trump for his part stated

⁹⁶ “Build It and They Will Come: A U.S. Strategy for Integrating Middle East Air and Missile Defenses,” Jewish Institute for National Security of America (JINSA), May 2023, p.12.

⁹⁷ Three of the seven total LACMs reportedly crashed in the desert short of their targets. (Embassy of the Kingdom of Saudi Arabia in the United States, “Saudi Ministry of Defense: Aramco Attack Sponsored by Iran,” September 18, 2019, <https://www.saudiembassy.net/news/saudi-ministry-defense-aramco-attack-sponsored-iran>.)

⁹⁸ United Nations Security Council, “Letter dated 27 January 2020 from the Panel of Experts on Yemen addressed to the President of the Security Council,” S/2020/70, January 17, 2020, https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/S_2020_70.pdf, pp. 82-99; “Joint statement by the heads of state and government of France, Germany, and the United Kingdom,” September 23, 2019, <https://www.gov.uk/government/news/joint-statement-by-the-heads-of-state-and-government-of-france-germany-and-the-united-kingdom>; Embassy of the Kingdom of Saudi Arabia in the United States, “Saudi Ministry of Defense: Aramco Attack Sponsored by Iran,” September 18, 2019, <https://www.saudiembassy.net/news/saudi-ministry-defense-aramco-attack-sponsored-iran>; International Institute for Strategic Studies, “Open-Source Analysis of Iran’s Missile and UAV Capabilities and Proliferation,” April 2021, pp. 4, 25; U.S. Department of State, Iran Action Group, “Outlaw Regime: A Chronicle of Iran’s Destructive Activities,” 2020, <https://www.state.gov/wp-content/uploads/2020/09/Outlaw-Regime-2020-A-Chronicle-of-Irans-Destabilizing-Activity.pdf>, pp. 4, 11-12; U.S. Department of the Treasury, “Treasury Sanctions Network and Individuals in Connection with Iran’s Unmanned Aerial Vehicle Program,” October 29, 2021, <https://home.treasury.gov/news/press-releases/jy0443>.

⁹⁹ National Council of Resistance of Iran, “Iranian Regime’s Attack on Saudi Oil Installations,” September 30, 2019, <https://www.ncr-iran.org/en/news/inside-source-reports/iranian-regime-s-attack-on-saudi-oil-installations/>; David Martin, “Saudi oil attack was approved by Iran’s supreme leader, U.S. official says,” *CBS News*, September 18, 2019, <https://www.cbsnews.com/news/saudi-oil-attack-approved-by-irans-supreme-leader-us-official-says-2019-09-18/>.

¹⁰⁰ “Pompeo turning to ‘max deceit’: Zarif,” *Iranian Students’ News Agency (ISNA)*, September 15, 2019, <https://en.isna.ir/news/98062411429/Pompeo-turning-to-max-deceit-Zarif>.

¹⁰¹ Embassy of the Kingdom of Saudi Arabia in the United States, “Saudi Ministry of Defense: Aramco Attack Sponsored by Iran,” September 18, 2019, <https://www.saudiembassy.net/news/saudi-ministry-defense-aramco-attack-sponsored-iran>.

¹⁰² “Joint statement by the heads of state and government of France, Germany, and the United Kingdom,” September 23, 2019, <https://www.gov.uk/government/news/joint-statement-by-the-heads-of-state-and-government-of-france-germany-and-the-united-kingdom>.

that the United States was “locked and loaded” to respond but later stated there was “plenty of time” to do “dastardly things.”¹⁰³

The U.S. Central Command reportedly drafted plans for retaliatory strikes against Iranian oil facilities and the IRGC.¹⁰⁴ In response to U.S. threats of military action, IRGC-ASF commander Hajizadeh stated that if the Americans start a war, Iran would strike U.S. bases and ships with missiles. He further noted that Iran constantly monitored U.S. bases and ships in the region and could target them with Iranian missiles up to a range of 2,000 km.¹⁰⁵ Ultimately, the United States did not respond with military force.

Western officials and experts were surprised about the lack of warning and defenses against the attack as well as about the high accuracy of the missile and UAV strikes against specific points in the Saudi oil facilities.¹⁰⁶ According to one U.S. official, “We were caught completely off guard” by the attack,¹⁰⁷ and sources described the missile and UAV attacks as “surgical.”¹⁰⁸

In looking back at the previous chapter on the Iran-Iraq War, the 2019 attack appears to share two similarities with Iran’s policies and actions as part of the Tanker War¹⁰⁹ during the 1980s: First, Iran’s policy in the 1980s that “either everyone can export oil from the Gulf or no one can” may also apply in 2019, with its attack on Saudi oil production in response to the U.S. attempt to cut off Iran’s oil exports. In this vein, according to former Israeli military intel head Amos Yadlin, with the attack, the Iranians were “trying to prove what they have said in the past”—that is, “if they are not going to export oil, no one will export oil.”¹¹⁰ Second, Iran’s attempt at covert or deniable strikes in 2019 appears to mirror its approach in the Tanker War of using “invisible shots”—rather than overt attacks—as retaliatory measures.

¹⁰³ Martin, “Saudi oil attack was approved by Iran’s supreme leader, U.S. official says.”

¹⁰⁴ Kareem Fahim, Anne Gearan, Erin Cunningham, and Steven Mufson, “Iran denies role in attacks on Saudi oil facilities; Trump says U.S. is ‘locked and loaded,’” *Washington Post*, September 15, 2019; David Martin, “Saudi oil attack was approved by Iran’s supreme leader, U.S. official says,” *CBS News*, September 18, 2019, <https://www.cbsnews.com/news/saudi-oil-attack-approved-by-irans-supreme-leader-us-official-says-2019-09-18/>; Chas Danner, Adam K. Raymond, and Matt Stieb, “Everything We Know About the Saudi Oil Attacks and the Escalating Crisis in the Gulf,” *New York Magazine*, September 16, 2019, <https://nymag.com/intelligencer/2019/09/everything-we-know-about-saudi-oil-attacks.html>.

¹⁰⁵ “sardar Hajizadeh: Amrikai-ha jargheh-ye jang ra bezanand, payegah-ha va nav-ha-yeshan ra zir-e mushak va atash khahim bord” [general Hajizadeh: if the Americans start a war, we will place their bases and ships under fire and missiles], *Fars News*, 24 Shahrivar 1398 [September 15, 2019], <https://www.farsnews.ir/news/13980624000301/>.

¹⁰⁶ John Keller, “Drone attack on Saudi Arabian oil facilities underlines the need for new kinds of counter-UAV air defenses,” *Military and Aerospace Electronics*, September 18, 2019, <https://www.militaryaerospace.com/unmanned/article/14040198/drone-attack-air-defenses-counteruav>.

¹⁰⁷ David Martin, “Saudi oil attack was approved by Iran’s supreme leader, U.S. official says,” *CBS News*, September 18, 2019, <https://www.cbsnews.com/news/saudi-oil-attack-approved-by-irans-supreme-leader-us-official-says-2019-09-18/>.

¹⁰⁸ Natasha Turak, “Detailed satellite photos show extent of ‘surgical’ attack damage to Saudi Aramco oil facilities,” *CNBC*, September 17, 2019, <https://www.cnbc.com/2019/09/17/satellite-photos-show-extent-of-damage-to-saudi-aramco-plants.html>; Chas Danner, Adam K. Raymond, and Matt Stieb, “Everything We Know About the Saudi Oil Attacks and the Escalating Crisis in the Gulf,” *New York Magazine*, September 16, 2019, <https://nymag.com/intelligencer/2019/09/everything-we-know-about-saudi-oil-attacks.html>.

¹⁰⁹ Other experts have drawn similar comparisons. For instance, one report stated that Iran’s strategy in response to the U.S. “maximum pressure” campaign “could be seen as a refinement or upgrading of that previously implemented during the tanker war.” (Agnes Levallois, Vincent Turret, and Stephane Delory in partnership with Geo41, “Iranian operations against el-Asad and Erbil bases: what can be learned from the imagery?” Part One, February 12, 2020, p. 1.)

¹¹⁰ Kareem Fahim, Anne Gearan, Erin Cunningham, and Steven Mufson, “Iran denies role in attacks on Saudi oil facilities; Trump says U.S. is ‘locked and loaded,’” *Washington Post*, September 15, 2019.

The attack on Saudi oil facilities might also be seen as a military element of Iran’s strategy of “active resistance” (*moghavemat-e fa’el*)¹¹¹ in response to the U.S. “maximum pressure” campaign, and specifically as a kinetic response to the U.S. attempt to shut down Iranian oil exports.¹¹² AFGS chief Mohammad Bagheri stated that since early 2019, under Iran’s new strategy of “active resistance,” according to the direction of Supreme Leader Khamenei, Iran would neither fear nor welcome war and also would also not negotiate since that would mean surrender.¹¹³

2022 Suspected Planned Attack on Saudi Economic Targets

On November 1, 2022, according to press reports, the United States and Saudi Arabia shared intelligence that Iran planned to conduct unspecified attacks against Saudi Arabia (as well as Irbil, Iraq) in the next 48 hours, possibly against its energy facilities. According to an unnamed Persian Gulf official, Iran was “ready to launch” an attack, and U.S. officials stated concerns that Iran might conduct an attack similar to that of September 2019. The planned Iranian action was possibly in response to Saudi support for Iran’s internal opposition. Indeed, IRGC commander Hossein Salami had recently conveyed Iran’s “last warning” to Saudi Arabia about interfering in Iran’s internal affairs, adding that “you are involved in this matter and know that you are vulnerable.”¹¹⁴

In response, an unnamed senior U.S. official claimed that the United States scrambled military aircraft in the Persian Gulf to deter Iran, stating that “the attack likely would have happened if we didn’t do this.”¹¹⁵ After press reporting on the planned attack, U.S. officials stated that the threat had subsided for the time being—suggesting the Iranians were deterred from attacking by the public attention and the U.S. military aircraft. Speaking in May 2023, U.S. national security advisor Jake Sullivan stated, “in the face of close security cooperation between Saudi Arabia and the United States, that attack did not take place.”¹¹⁶ Iran, for its part, denied it planned to attack Saudi Arabia, and an Iranian foreign ministry spokesman called the accusation “baseless.”¹¹⁷

¹¹¹ “sokhangu-ye shura-ye ali-e amniat-e melli: rahbord-e ‘moghavemat-e fael’ padzahar-e hameh-ye tahdidat ast” [supreme council for national security spokesperson: “active resistance” strategy is the antidote to all threats], *Mizan Online*, 13 Tir 1398 [July 4, 2019], <https://www.mizanonline.ir/fa/news/530522/>.

¹¹² Michael Eisenstadt, “Were Iran and the United States Really ‘on the Brink’? Observations on Gray Zone Conflict,” *Lawfare*, September 27, 2020, <https://www.lawfareblog.com/were-iran-and-united-states-really-brink-observations-gray-zone-conflict>.

¹¹³ “farmandehan-e nezami-e Iran: dar dureh-ye faeli-e mozakereh be mana-ye taslim ast” [Iran’s military commanders: during the current period, negotiation means surrender], *Euronews*, September 7, 2019, <https://parsi.euronews.com/2019/07/09/iranian-military-commanders-tanker-capture-unanswered-negotiation-means-surrender>.

¹¹⁴ Dion Nissenbaum, “Saudi Arabia, U.S. on High Alert After Warning of Imminent Iranian Attack,” *Wall Street Journal*, November 1, 2022; Barbara Starr, Alex Marquardt, and Natasha Bertrand, “US and Saudi Arabia concerned that Iran may be planning attack on energy infrastructure in Middle East,” *CNN*, November 1, 2022, <https://www.cnn.com/2022/11/01/politics/us-saudi-arabia-iran-energy-infrastructure-middle-east/index.html>; Dion Nissenbaum, “Threat of Iran Attack Has Eased, U.S. and Persian Gulf Officials Say,” *Wall Street Journal*, November 3, 2022.

¹¹⁵ Jay Solomon, “How the record Boeing deal was caught between Washington and Riyadh,” *Semafor*, April 10, 2023, <https://www.semafor.com/article/04/09/2023/how-the-record-boeing-deal-was-caught-between-washington-and-riyadh>.

¹¹⁶ “Keynote Address by National Security Advisor Jake Sullivan,” Washington Institute for Near East Policy, May 4, 2023.

¹¹⁷ Dion Nissenbaum, “Threat of Iran Attack Has Eased, U.S. and Persian Gulf Officials Say,” *Wall Street Journal*, November 3, 2022.

*Attacks on U.S. Military Forces*¹¹⁸

2019 Attacks on U.S. UAVs¹¹⁹

On June 19, 2019, the IRGC-ASF used a “Third of Khordad” surface-to-air missile (SAM) system based along the Strait of Hormuz to shoot down a U.S. Navy MQ-4C Triton reconnaissance UAV in international airspace over the strait, although Iranian officials claimed the UAV was flying in Iranian airspace. Iran had also attempted to shoot down a U.S. UAV the week before. This incident occurred during a time of increased tensions over suspected recent Iranian attacks using naval mines against oil tankers.¹²⁰ According to former U.S. Defense Department official Derek Chollet, Iran’s action was a “show of force—their equivalent of an inside pitch.”¹²¹

Following the incident, Iranian officials stated that Iran’s borders and airspace were a “redline” (*khat-e ghermez*) and that Iran would respond strongly to any violation of its airspace. Iranian foreign minister Zarif stated that the United States was waging “economic terrorism” on Iran and had encroached on Iran’s territory.¹²² In a letter to the UN Security Council, Iran claimed that the U.S. UAV entered Iranian airspace despite warnings in a “dangerous and provocative act by the United States military forces against the territorial integrity” of Iran. According to the letter, in shooting down the UAV, Iran had acted in self-defense under Article 51 of the UN Charter.¹²³ According to IRGC-ASF commander Hajizadeh, in addition to the UAV, the IRGC-ASF could have also targeted

¹¹⁸ For the purpose of this section, we focus on Iranian direct actions conducted from its own territory, not attacks by Iranian Axis of Resistance partners, such as Iraqi militants, Lebanese Hezbollah, or the Yemeni Houthis, with or without the suspected support or direction of Iran. Iran has shown a pattern or supporting and/or directing violent actions—including bombings as well as rocket and missile attacks—by its non-state partners since the 1980s. Thus, although the types of weapons used have evolved over time, we view these actions by Iran’s non-state partners as a decades-long continuing pattern and not as a “pattern break” for the purposes of this project.

¹¹⁹ These instances of Iranian strikes targeting U.S. UAVs with SAMs—rather than with ballistic missiles, cruise missiles, or UAVs—serve as the exception for this chapter.

¹²⁰ Tara Law, “Iran Shot Down a \$176 Million U.S. Drone. Here’s What to Know About the RQ-4 Global Hawk,” *Time*, June 21, 2019, <https://time.com/5611222/rq-4-global-hawk-iran-shot-down/>; “ravabet-e omumi-e kol-e sepah alam kard: sarneguni-e pahpad-e jasusi-e ‘gelobal hawk’-e Amrika dar savahel-e hormozgan tavasot-e sepah + vakonesh-e Amrika” [IRGC public relations announced: downing of the American “Global Hawk” spy drone on the coast of hormozgan by IRGC + American response], *Mashregh News*, 30 Khordad 1398 [June 20, 2019], <https://www.mashreghnews.ir/news/968351/>.

¹²¹ Michael D. Shear, Eric Schmitt, Michael Crowley, and Maggie Haberman, “Strikes on Iran Approved by Trump, Then Abruptly Pulled Back,” *New York Times*, June 20, 2019.

¹²² Parisa Hafezi and Phil Steward, “UPDATE 4—Iran shoots down U.S. military drone in Gulf region,” *Reuters*, June 19, 2019, <https://www.reuters.com/article/mideast-iran-usa/update-4-iran-shoots-down-u-s-military-drone-in-gulf-region-idUSL8N23R09Y>; Joanne Stocker, “Iran shoots down US RQ-4 Global Hawk surveillance drone,” *The Defense Post*, June 20, 2019, <https://www.thedefensepost.com/2019/06/20/iran-shoots-down-us-drone-strait-of-hormuz/>; “Trump Calls Iranian Downing of U.S. Drone ‘A Very Big Mistake,’” *Radio Free Europe/Radio Liberty (RFE/RL)*, June 20, 2019, <https://www.rferl.org/a/media-reports-say-u-s-officials-confirm-downing-of-drone-by-iran-over-strait-of-hormuz/30009805.html>; “farmandeh-ye kol-e sepah: pahpad-e Amrikai az marz-ha-ye keshvar obur kardeh bud / marz-ha khat-e ghermez-e mast / bana-ye jang nadarim ama kamelan amadeh-im” [IRGC commander: American UAV crossed the country’s borders / borders are our redline / we do not have war footing but are fully prepared], *Tasnim News*, 30 Khordad 1398 [June 20, 2019], <https://www.tasnimnews.com/fa/news/1398/03/30/2036460/>; “US-Iran: Trump says military was ‘cocked and loaded’ to retaliate,” *BBC News*, June 21, 2019, <https://www.bbc.com/news/world-us-canada-48714414>.

¹²³ United Nations Security Council, “Letter dated 20 June 2019 from the Permanent Representative of the Islamic Republic of Iran to the United Nations addressed to the Secretary-General,” S/2019/512, June 20, 2019.

a U.S. Navy P-8 maritime patrol aircraft with 35 crew members onboard, but did not attack because Iran's goal was only to warn the "terrorist forces" of the United States.¹²⁴

U.S. military officials called Iranian claims that the UAV entered Iran's airspace "false" and condemned Iran's strike as an "unprovoked attack on a U.S. surveillance asset in international airspace."¹²⁵ U.S. President Donald Trump reportedly approved military strikes against Iranian targets, such as radar and missile sites, in response to the shootdown, but while U.S. aircraft were airborne and ships were in position, he called off the strikes. Trump indicated that he halted the attack after he was told that 150 people might be killed and because it was "not proportionate to shooting down an unmanned drone."¹²⁶ Trump noted that it would have made a "big, big difference" if the aircraft had been piloted and not a UAV.¹²⁷ Speaking in September 2019, IRGC-ASF commander Hajizadeh stated that if the United States had responded militarily, the IRGC would have attacked U.S. bases with missiles, including the Al Udeid Air Base in Qatar, the Al Dhafra Air Base in the UAE, and an unspecified U.S. Navy ship in the Sea of Oman, indicating "if they hit us, we would also hit them."¹²⁸

2020 Attack on U.S. Military Bases in Iraq

On January 8, 2020, the IRGC-ASF conducted Operation Martyr Soleimani, launching at least thirteen ballistic missiles¹²⁹ into Iraq over an 80-minute timeframe in the "largest ballistic missile attack ever against Americans."¹³⁰ At least eleven missiles struck the U.S. Al Asad Air Base, and one hit a military facility near Irbil.¹³¹ IRGC-ASF commander Hajizadeh claimed that this was the first overt attack by a country against a U.S. military base since World War Two.¹³² The overt attack was

¹²⁴ "gozaresh / kodam havapeyma-ye ba sarneshin-e Amrikai dar tir-ras-e mushak-e sepah bud?" [report / which American manned aircraft was in the crosshairs of IRGC missile?], *Tasnim News*, 31 Khordad 1398 [June 21, 2019], <https://www.tasnimnews.com/fa/news/1398/03/31/2037332/>.

¹²⁵ U.S. Central Command, "U.S. Central Command Statement: Iranians shoot down U.S. drone," June 20, 2019, <https://www.centcom.mil/MEDIA/STATEMENTS/Statements-View/Article/1881682/us-central-command-statement-iranians-shoot-down-us-drone/>.

¹²⁶ "US-Iran: Trump says military was 'cocked and loaded' to retaliate," *BBC News*, June 21, 2019, <https://www.bbc.com/news/world-us-canada-48714414>.

¹²⁷ Michael D. Shear, Eric Schmitt, Michael Crowley, and Maggie Haberman, "Strikes on Iran Approved by Trump, Then Abruptly Pulled Back," *New York Times*, June 20, 2019.

¹²⁸ "sardar Hajizadeh: Amrikai-ha jargheh-ye jang ra bezanand, payegah-ha va nav-ha-yeshan ra zir-e mushak va atash khahim bord" [general Hajizadeh: if the Americans start a war, we will place their bases and ships under fire and missiles], *Fars News*, 24 Shahrivar 1398 [September 15, 2019], <https://www.farsnews.ir/news/13980624000301/>.

¹²⁹ IRGC-ASF commander Hajizadeh claimed 13 missiles were fired and the U.S. Department of Defense claimed 16. ("sardar Hajizadeh: agar donbal-e koshteh budim dar gam-e aval 500 Amrikai koshteh mishod / mikhastim be markaz-e kontrol-e farmandehi-e Amrika zarbeh bezanim" [general Hajizadeh: if we were after killing we could have killed 500 Americans in the first step / we wanted to strike the center of American command and control], *Fars News*, 19 Dey 1398 [January 9, 2020], <https://www.farsnews.ir/news/13981019000581/>; U.S. Department of Defense, "Chairman: Defensive Measures Prevented Casualties in Iranian Attack," *DOD News*, January 8, 2020, <https://www.defense.gov/News/News-Stories/Article/Article/2052919/chairman-defensive-measures-prevented-casualties-in-iranian-attack/>.)

¹³⁰ David Martin, "Inside the attack that almost sent the U.S. to war with Iran," *CBS News*, August 8, 2021, <https://www.cbsnews.com/news/iran-missile-strike-al-asad-airbase-60-minutes-2021-08-08/>.

¹³¹ U.S. Department of Defense, "Chairman: Defensive Measures Prevented Casualties in Iranian Attack," *DOD News*, January 8, 2020, <https://www.defense.gov/News/News-Stories/Article/Article/2052919/chairman-defensive-measures-prevented-casualties-in-iranian-attack/>.

¹³² "sardar Hajizadeh: agar donbal-e koshteh budim dar gam-e aval 500 Amrikai koshteh mishod / mikhastim be markaz-e kontrol-e farmandehi-e Amrika zarbeh bezanim" [general Hajizadeh: if we were after killing we could have killed 500

part of Iran's "severe revenge" (*entegham-e sakht*) in retaliation for a U.S. UAV strike on January 3rd at Baghdad International Airport in Iraq that killed IRGC Qods Force commander Ghasem Soleimani. On the day of Soleimani's killing, Iran told the UN that it reserved the right to "take necessary measures" and exercise its "inherent right to self-defense" in response to the U.S. attack.¹³³ In the days before the Iranian attack, President Trump publicly threatened military attack against Iran, stating that "We will hit them harder than they have ever been hit before" and that the U.S. military would strike Iran "in a disproportionate manner" and target fifty-two sites, including cultural sites.¹³⁴

The IRGC-ASF reportedly used 500-km-range Fateh-313 and 800-km-range Qiam ballistic missiles in the attacks, which did not kill any U.S. personnel but caused traumatic brain injuries to more than one hundred.¹³⁵ The IRGC stated that the IRGC-ASF had fired missiles at the Al Asad Air Base as part of the operation and warned the United States that any further attacks or movements would face "more painful and crushing responses" that would target the source of the actions against Iran.¹³⁶ After the attacks were concluded, President Trump stated that Iran appeared to be "standing down" and did not threaten a U.S. response.¹³⁷

Hours after the attacks, Iran's military was at its highest readiness level to prepare for a potential U.S. military response. It was against this backdrop that IRGC-ASF mistook Ukraine International Airlines flight 752 departing Tehran International Airport for an incoming U.S. cruise missile, shooting down the airliner using a TOR-M1 SAM system and killing all 176 passengers and crew onboard. Contrary to what one might expect, however, the shootdown may have had a de-escalatory effect on both Iran and the United States, possibly preventing further escalation of the situation. Indeed, IRGC commander Hossein Salami reportedly claimed that the downing of the airliner prevented a war with the United States that would have killed millions of people.¹³⁸

Americans in the first step / we wanted to strike the center of American command and control], *Fars News*, 19 Dey 1398 [January 9, 2020], <https://www.farsnews.ir/news/13981019000581/>.

¹³³ United Nations Security Council, "Letter dated 3 January 2020 from the Permanent Representative of the Islamic Republic of Iran to the United Nations addressed to the Secretary-General and the President of the Security Council," S/2020/13, January 3, 2020.

¹³⁴ Twitter account of U.S. President Donald J. Trump, @realDonaldTrump, January 4, 2020, <https://twitter.com/realDonaldTrump/status/1213593975732527112>; Twitter account of U.S. President Donald J. Trump, @realDonaldTrump, January 4, 2020, <https://twitter.com/realDonaldTrump/status/1213684819537932293>; Twitter account of U.S. President Donald J. Trump, @realDonaldTrump, January 5, 2020, <https://twitter.com/realDonaldTrump/status/1213919480574812160>; Maggie Haberman, "Trump Threatens Iranian Cultural Sites, and Warns of Sanctions on Iraq," *New York Times*, January 5, 2020.

¹³⁵ "sardar Hajizadeh: agar donbal-e koshteh budim dar gam-e aval 500 Amrikai koshteh mishod / mikhastim be markaz-e kontrol-e farmandehi-e Amrika zarbeh bezanim" [general Hajizadeh: if we were after killing we could have killed 500 Americans in the first step / we wanted to strike the center of American command and control], *Fars News*, 19 Dey 1398 [January 9, 2020], <https://www.farsnews.ir/news/13981019000581/>.

¹³⁶ "etelaiyeh-ye sepah-e pasdaran-e enghelab-e eslami pas az entegham-e sakht / zaman-e tahaghogh-e vadeh-ye sadegh farar rasid / har shariat-e mojadad va ya taharok va tajavoz-e digar ba pasokh-ha-ye dardnak-tar va kubandeh-tari movajeh khahad shod" [IRGC announcement after severe revenge / the time for the fulfillment of the honest promise has arrived / any renewed evil or other movement and attack will be met with more painful and crushing responses], *Mashregh News*, 18 Dey 1398 [January 8, 2020], <https://www.mashreghnews.ir/news/1028837/>.

¹³⁷ "Trump: Iran 'standing down' after missile strikes," *BBC*, January 9, 2020, <https://www.bbc.com/news/world-us-canada-51039520>.

¹³⁸ "tashrih-e joziyat-e soghut-e havapeyma-ye mosafarbari-e Ukrain az zaban-e farmandeh-ye niru-ye havafaza-e sepah" [explaining the details of the crash of the Ukrainian passenger plane in the words of the commander of the IRGC aerospace force], *Tasnim News*, 21 Dey 1398 [January 11, 2020],

Iran reportedly notified Iraqi officials before the attack and told them to stay away from certain U.S. bases; the Iraqi officials then tipped off U.S. military officials. In addition, U.S. officials reportedly received an intelligence warning and claimed that its “early warning” systems provided advance warning of the attack. These warning signals enabled the U.S. military to evacuate 1,000 troops and fifty aircraft from the base and move remaining personnel to hardened bunkers. According to CENTCOM commander Frank McKenzie, without the warning and preparations, the missile attacks might have killed 100-150 personnel and destroyed 20-30 aircraft. McKenzie added that CENTCOM “had a plan to retaliate if Americans had died.”¹³⁹

According to Iranian Foreign Minister Zarif, Iran sent a diplomatic message to Washington stating that the operation was an act of self-defense, that Iran had concluded its self-defense measures, and that if the United States responded it would receive a response from Iran.¹⁴⁰ Zarif later said that Iran had “concluded proportionate measures” in response to the U.S. “cowardly armed attack against our citizens.”¹⁴¹ In a letter to the UN, Iran stated that, as an act of self-defense under Article 51 of the UN Charter, it conducted a “measured and proportionate military response targeting an American air base in Iraq from which the cowardly armed attack against Martyr Soleimani was launched.” The letter added, “the operation was precise and targeted military objectives” which prevented collateral damage to civilians. Finally, Iran conveyed a warning against “any further military adventurism against it,” stating that it would “defend its people, sovereignty, and territorial integrity against any aggression.”¹⁴²

In explaining the reasons for the nature of Iran’s response, IRGC-ASF commander Hajizadeh stated that the U.S. killing of Soleimani aimed to strike the “symbol of resistance” (*namad-e moghavemat*), and that Iran had to respond directly against the U.S. military to send the message that Washington could not “hit and run” (*bezanand va dar-rand*) without a response. According to Hajizadeh, the operation was just the start of Iran’s revenge (*entegham*), and the main act of revenge would be expelling (*ekbraj*) the United States from region.¹⁴³

Regarding Iran’s planning of its response, according to Hajizadeh, after the killing of Soleimani, Iran had identified the bases that were involved in that operation, including Taji and Al Asad bases in

<https://www.tasnimnews.com/fa/media/1398/10/21/2179573/>; “farmandeh-ye sepah goft agar havapeyma-ye Ukraini soghut nemikard jang mishod” [“IRGC commander said if the Ukrainian aircraft was not downed it would have been war”], *BBC News*, 2 Dey 1400 [January 1, 2022], <https://www.bbc.com/persian/iran-59933533>.

¹³⁹ David Martin, “Inside the attack that almost sent the U.S. to war with Iran,” *CBS News*, February 28, 2021, <https://www.cbsnews.com/news/al-asad-iran-60-minutes-2021-02-26/?ftag=CNM-00-10aab7d&linkId=112199988>; John Bacon and Tom Vanden Brook, “U.S. knew Iranian missiles were coming ahead of strike; Trump announces new sanctions,” *USA Today*, January 8, 2020, <https://www.usatoday.com/story/news/world/2020/01/08/us-officials-warned-missile-launch-iraq-bases-troops/2842200001/>.

¹⁴⁰ Interview with Iranian foreign minister Mohammad Javad Zarif, Raisina Dialogue, January 2020, <https://www.youtube.com/watch?v=yHIqnQHvrXY>.

¹⁴¹ John Bacon and Tom Vanden Brook, “U.S. knew Iranian missiles were coming ahead of strike; Trump announces new sanctions,” *USA Today*, January 8, 2020, <https://www.usatoday.com/story/news/world/2020/01/08/us-officials-warned-missile-launch-iraq-bases-troops/2842200001/>.

¹⁴² United Nations Security Council, “Letter dated 8 January 2020 from the Permanent Representative of the Islamic Republic of Iran to the United Nations addressed to the Secretary-General and the President of the Security Council,” S/2020/19, January 8, 2020.

¹⁴³ Interview with IRGC-ASF commander Hajizadeh, Iranian TV, “Bedun-e Taarof” [without pleasantries], 2021, <https://www.youtube.com/watch?v=bkUqsG29Wcw>.

Iraq, Shahid Mafar in Jordan, and Ali Al-Salem in Kuwait. He stated that the first choice for a target in retaliation was Taji, but after further planning, Iran decided on Al Asad because it was farther away from Baghdad and from Iraqi personnel and civilians. According to Hajizadeh, the main target was the “American war machine” including its command and control center and UAV and helicopter units.¹⁴⁴

That said, Iran claimed it did not intend to kill U.S. personnel during the operation. Indeed, according to IRGC-ASF commander Hajizadeh, Iran did not aim to kill anyone¹⁴⁵ and had fired missiles in waves with pauses to allow U.S. personnel to take shelter.¹⁴⁶ He also stated that Iran could have planned the operation in such a way that 500 people were killed in the first phase.¹⁴⁷ U.S. officials, however, disagreed. U.S. Secretary of State Mike Pompeo indicated, for instance, that he had “no doubt” Iran aimed to kill U.S. personnel. Joint Chiefs of Staff chairman Mark Milley and CENTCOM commander McKenzie similarly believed that Iran intended to kill personnel in addition to damaging structures and destroying aircraft, vehicles, and equipment.¹⁴⁸

Regarding Iranian planning had the crisis intensified, Iranian military officials claimed the country was prepared for an escalation of the conflict with the United States. According to Hajizadeh, the IRGC-ASF was prepared for various scenarios, including large-scale war, and its units in different sectors were ready to enter the next phases of the operation.¹⁴⁹ Hajizadeh stated that if the United States had responded to Iran’s initial attack, the IRGC could have killed 4,000 to 5,000 people in the second and third phases of the conflict. He claimed that IRGC-ASF units across the country were ready to fire 400 missiles¹⁵⁰ in the first hours and had prepared thousands of missiles if the conflict

¹⁴⁴ “sardar Hajizadeh: agar donbal-e koshteh budim dar gam-e aval 500 Amrikai koshteh mishod / mikhastim be markaz-e kontrol-e farmandehi-e Amrika zarbeh bezanim” [general Hajizadeh: if we were after killing we could have killed 500 Americans in the first step / we wanted to strike the center of American command and control], *Fars News*, 19 Dey 1398 [January 9, 2020], <https://www.farsnews.ir/news/13981019000581/>.

¹⁴⁵ “Ghasem Soleimani va vakonesh-e mushaki-e Iran; farmandeh-ye havafaza-ye sepah: donbal-e koshtan nabudim, agarcheh hatman dah-ha nafar koshteh shodand” [Ghasemi Soleimani and Iran’s missile response; IRGC aerospace commander: we were not after killing, if we were, tens of personnel would have been killed], *BBC News Farsi*, 19 Dey 1398 [January 9, 2020], <https://www.bbc.com/persian/iran-51051057>.

¹⁴⁶ Hajizadeh interview during operation, *Islamic Republic of Iran Broadcasting (IRIB) News*, <https://www.youtube.com/watch?v=fsvZyyxIzWQ>.

¹⁴⁷ “sardar Hajizadeh: agar donbal-e koshteh budim dar gam-e aval 500 Amrikai koshteh mishod / mikhastim be markaz-e kontrol-e farmandehi-e Amrika zarbeh bezanim” [general Hajizadeh: if we were after killing we could have killed 500 Americans in the first step / we wanted to strike the center of American command and control], *Fars News*, 19 Dey 1398 [January 9, 2020], <https://www.farsnews.ir/news/13981019000581/>; Hajizadeh interview, *Islamic Republic of Iran Broadcasting (IRIB) News*, January 2021, <https://www.aparat.com/v/wAfcl/>.

¹⁴⁸ John Bacon and Tom Vanden Brook, “U.S. knew Iranian missiles were coming ahead of strike; Trump announces new sanctions,” *USA Today*, January 8, 2020, <https://www.usatoday.com/story/news/world/2020/01/08/us-officials-warned-missile-launch-iraq-bases-troops/2842200001/>; Kareem Fahim and Sarah Dadouch, “‘We did not intend to kill,’ Iranian commander says of missile strike on U.S. targets,” *Washington Post*, January 9, 2020; Tom Vanden Brook and Courtney Subramanian, “Did Iran mean to kill Americans in its Iraq attack? The answer hints at how far Iran will go to challenge US,” *USA Today*, January 12, 2020; David Martin, “Inside the attack that almost sent the U.S. to war with Iran,” *CBS News*, February 28, 2021, <https://www.cbsnews.com/news/al-asad-iran-60-minutes-2021-02-26/?ftag=CNM-00-10aab7d&linkId=112199988>.

¹⁴⁹ “sardar Hajizadeh: dar pey-ye zarbeh be mashin-e jangi-e Amrika budim, na koshtan-e afrad” [general Hajizadeh: we wanted to strike America’s war machine, not kill people], *Islamic Republic News Agency (IRNA)*, 19 Dey 1398 [January 9, 2020], <https://www.irna.ir/news/83627763/>.

¹⁵⁰ Speaking months later, in April 2020, Hajizadeh said that Iran expected a U.S. response after 20 minutes and the IRGC planned to strike 400 U.S. targets if the U.S. military responded. (“sardar Hajizadeh: Amrika pasokh-e hamleh be Ain Al Asad ra midad, 400 noghteh ra mizadim” [general Hajizadeh: if America had responded to the attack on Ain Al

had continued for days. He also indicated that, depending on the U.S. response, the attack might have stayed limited to Iraq or expanded to other U.S. bases in the region.¹⁵¹

The intensity and accuracy of the Iranian missile attack appeared to surprise U.S. officials and foreign experts. According to CENTCOM commander McKenzie, for instance, Iran's attack was "certainly like nothing I've ever seen or experienced." He added that "Their missiles are accurate," and "they fired those missiles to significant range" and "hit pretty much where they wanted to hit."¹⁵² Separately, McKenzie stated that Iran "crossed a threshold" compared to its earlier "grey-zone" attacks and this attack might "set a lower bar" for future Iranian actions.¹⁵³ With Iran's attack, McKenzie noted that Iran's missiles had become a more immediate threat than its nuclear program and—as opposed to decades before—Iran could now strike with both accuracy and volume and had achieved "overmatch," which he defined as "the ability to overwhelm."¹⁵⁴ According to Vipin Narang, a key takeaway from the attack was its precision, leading him to conclude that "the accuracy revolution is real and no longer a monopoly of the United States. This has huge implications for modern conflict."¹⁵⁵ Analyst Fabian Hinz also highlighted the importance of Iran's demonstrated missile accuracy: "What we've seen in Iran in the past few years is a change from missiles that were mainly political or psychological tools to actual battlefield weapons. This is a quantum change."¹⁵⁶

Attacks on Israeli Targets

As the third main element of this pattern break, Iran conducted long-range strikes against Israeli targets between 2021 and 2023, including several Israel-linked ships and what Iran claimed was an Israeli intelligence base in Irbil, Iraq. In general, these attacks appeared to be part of the longstanding "shadow war" or "twilight war" between Iran and Israel that included short-of-war actions by each side, such as assassinations, sabotage, and limited military strikes. According to Dalia Dassa Kaye, Iran's actions were part of the "decades-long pattern of largely unclaimed tit-for-tat strikes between Israel and Iran in what is described as a 'shadow war' with fronts on land, air, and

Asad, we would have hit 400 points], *Mehr News*, 4 Ordibehesht 1399 [April 23, 2020], <https://www.mehrnews.com/news/4908152/>.

¹⁵¹ "sardar Hajizadeh: agar donbal-e koshteh budim dar gam-e aval 500 Amrikai koshteh mishod / mikhastim be markaz-e kontrol-e farmandehi-e Amrika zarbeh bezanim" [general Hajizadeh: if we were after killing we could have killed 500 Americans in the first step / we wanted to strike the center of American command and control], *Fars News*, 19 Dey 1398 [January 9, 2020], <https://www.farsnews.ir/news/13981019000581/>; Hajizadeh interview, *Islamic Republic of Iran Broadcasting (IRIB) News*, January 2021, <https://www.aparat.com/v/wAfcl/>.

¹⁵² David Martin, "Inside the attack that almost sent the U.S. to war with Iran," *CBS News*, February 28, 2021, <https://www.cbsnews.com/news/al-asad-iran-60-minutes-2021-02-26/?ftag=CNM-00-10aab7d&linkId=112199988>; John Bacon and Tom Vanden Brook, "U.S. knew Iranian missiles were coming ahead of strike; Trump announces new sanctions," *USA Today*, January 8, 2020, <https://www.usatoday.com/story/news/world/2020/01/08/us-officials-warned-missile-launch-iraq-bases-troops/2842200001/>.

¹⁵³ U.S. Central Command, "Posture Statement of General Kenneth F. McKenzie, Jr., Commander, United States Central Command, Before the Senate Armed Services Committee," March 12, 2020, https://www.armed-services.senate.gov/imo/media/doc/McKenzie_03-12-20.pdf.

¹⁵⁴ Robin Wright, "The Looming Threat of a Nuclear Crisis With Iran," *New Yorker*, December 27, 2021.

¹⁵⁵ "Iran's attack on Iraq shows how precise missiles have become," *The Economist*, January 16, 2020, <https://www.economist.com/science-and-technology/2020/01/16/irans-attack-on-iraq-shows-how-precise-missiles-have-become>.

¹⁵⁶ Joby Warrick, "How a 'quantum change' in missiles has made Iran a far more dangerous foe," *Washington Post*, January 7, 2020, https://www.washingtonpost.com/national-security/how-a-quantum-change-in-missiles-has-made-iran-a-far-more-dangerous-foe/2020/01/07/63020a0c-30c7-11ea-9313-6c8a89b1b9fb_story.html.

sea.”¹⁵⁷ Speaking in 2019 regarding Iran’s overall approach to targeting ships, Israeli Mossad chief Yossi Cohen stated that “through these attacks, Iran is trying to say to the world—a world that is afraid of escalation—that if the sanctions are not lifted, it will cause serious damage to the world oil economy.”¹⁵⁸ In the instances outlined here, Iran used long-range strike weapons, including UAVs and ballistic missiles, to attack Israeli targets from Iranian territory, an important break from the preceding pattern.

2021-2023 Long-Range Strikes on Israel-Linked Ships

Dubbed by some as the “Second Tanker War”¹⁵⁹—similar to the Tanker War of the 1980s between Iran and Iraq and its Gulf Arab allies—in at least seven instances from March 2021 to April 2023, Iran allegedly conducted or planned long-range strikes against Israel-linked ships at sea. The Iranian strikes were part of ongoing tit-for-tat attacks since 2019 by both Iran and Israel against each other’s shipping, in what one Iranian analyst described as the two countries “bringing their covert war to the open waters.”¹⁶⁰ In the attacks, Iran reportedly conducted covert or deniable strikes using long-range suicide UAVs fired from Iranian territory against Israel-linked ships located in the Arabian Sea, Gulf of Oman, and Persian Gulf. These long-range strikes followed suspected Iranian attacks using mines and torpedoes from 2019 to February 2021 against ships linked to Israel and Gulf Arab countries.¹⁶¹

In the first long-range strike, on March 25, 2021, Iran targeted the container ship “Lori,” which was owned by the Israel-based company, Venus Maritime. According to Israeli defense sources, the Lori was struck by an Iranian UAV or missile in the Arabian Sea but did not sustain serious damage or injuries.¹⁶²

¹⁵⁷ Dalia Dassa Kaye, “Israel’s Dangerous Shadow War With Iran: Why the Risk of Escalation is Growing,” *Foreign Affairs*, February 27, 2023, <https://www.foreignaffairs.com/israel/israels-dangerous-shadow-war-iran>.

¹⁵⁸ David M. Halbfinger, “Iran Bears All Blame For Attacks, Mossad Says,” *New York Times*, July 2, 2019.

¹⁵⁹ For example: Gabriel Honrada and Daniyal Ranjbar, “The Evolution of the Tanker War in the Persian Gulf,” *The Geopolitics*, August 13, 2021, <https://thegeopolitics.com/the-evolution-of-the-tanker-war-in-the-persian-gulf/>; International Institute for Iranian Studies (Rasanah), “Annual Strategic Report,” 2019, <https://rasanah-iis.org/english/wp-content/uploads/sites/2/2020/02/Annual-Strategic-Report-2019.pdf>, pp. 257-258. This is not to be confused with Iranian officials referring to the phase of the original Tanker War as the “Second Tanker War” when in 1987 Gulf Arab states reflagged their ships and secured superpower protection of their tankers. (Farzin Nadimi, “Iran’s Evolving Approach to Asymmetric Naval Warfare: Strategy and Capabilities in the Persian Gulf,” Washington Institute for Near East Policy, 2020, p. 17.)

¹⁶⁰ Patrick Kingsley, Ronen Bergman, Farnaz Fassihi, and Eric Schmitt, “Israel’s Shadow War With Iran Moves Out to Sea,” *New York Times*, March 26, 2021; Ethan Bronner, “How Israel and Iran Attack Each Other While Avoiding All-Out War,” *Washington Post*, April 5, 2023.

¹⁶¹ “Israel said to blame Iran’s Revolutionary Guard for attacks on oil tankers,” *Times of Israel*, June 15, 2019, <https://www.timesofisrael.com/israel-said-to-blame-irans-revolutionary-guard-for-attacks-on-oil-tankers/>; Aziz El Yaakoubi, “U.S. Navy says mine fragments suggest Iran behind Gulf tanker attack,” *Reuters*, June 19, 2019, <https://www.reuters.com/article/uk-iran-nuclear-idUKKCN1TK1Z1>; “Netanyahu blames Iran for blast on Israel-owned ship in Gulf of Oman,” *BBC News*, March 1, 2021, <https://www.bbc.com/news/world-middle-east-56237295>.

¹⁶² “Israeli-owned ship hit by missile in suspected Iranian attack: Israeli official,” *Reuters*, March 25, 2021, <https://www.reuters.com/article/us-israel-ship-missiles/israeli-owned-ship-hit-by-missile-in-suspected-iranian-attack-israeli-official-idUSKBN2BH2F5>; Twitter account of the Israeli Defense Forces (IDF), @IDF, March 7, 2022, <https://twitter.com/IDF/status/1500904036719075328>; “Report: Israeli Container Ship Targeted in Missile Attack,” *Maritime Executive*, March 25, 2021, <https://www.maritime-executive.com/article/report-israeli-container-ship-targeted-in-missile-attack>.

In the second strike, on April 13, 2021, Iran targeted the cargo ship “Hyperion Ray,” associated with the Israeli Ray Shipping company. The ship was hit by an Iranian UAV or missile near the coast of the UAE and suffered minor damage and no casualties. The attack occurred a week after a suspected Israeli attack on the Iranian ship “Saviz” and a day after Israel’s reported attack on Iran’s Natanz nuclear facility.¹⁶³

In the third attack, on July 2, 2021, Iran targeted the container ship “CSAV Tyndall.” Israeli sources reported that the CSAV Tyndall—formerly owned by Israeli shipowner Eyal Ofer—was attacked by a UAV, missile, or naval commandos in the Gulf of Oman. The attack did not cause serious damage or injuries.¹⁶⁴

In the fourth long-range strike, in late July 2021, Iran targeted the container ship “Mercer Street” in the Gulf of Oman. In the attack, the Mercer Street—operated by the Israeli-owned firm Zodiac Maritime—was unsuccessfully targeted by two UAVs on July 29 and hit by one on July 30, causing damage and killing two crew members. According to Israel’s defense minister, the attacks were “launched from Iranian territory and approved by Iranian leadership.” U.S. investigators concluded the UAVs were Iranian delta wing suicide UAVs, later identified as IRGC-ASF Shahed-136 suicide UAVs.¹⁶⁵ According to the U.S. government, the attack was directed by the commander of the IRGC-ASF’s UAV Command, Said Aghajani.¹⁶⁶

In the fifth attack, in November 2022, Iran targeted the oil tanker “Pacific Zircon” off the coast of Oman. On November 15, 2022, the ship, owned by the Israeli firm Eastern Pacific Shipping, was hit by a UAV, causing minor damage and no casualties. According to Western officials, the IRGC-ASF conducted the attack using a Shahed-136 UAV launched from Iran’s Chabahar region. Iranian officials denied Iran’s involvement, however, and an Iranian press report claimed Israel was responsible, stating that the “Hebrew-Arab axis” intended to create a “charged atmosphere” before the upcoming World Cup to be held in Qatar.¹⁶⁷

¹⁶³ Tzvi Joffe, “Iran fires missile at Israeli-owned ship near UAE - report,” *Jerusalem Post*, April 14, 2021, <https://www.jpost.com/breaking-news/israeli-ship-attacked-near-uae-report-665030>.

¹⁶⁴ Twitter account of Israeli Defense Forces (IDF), @IDF, <https://twitter.com/IDF/status/1500904036719075328>, March 7, 2022; “Report: Container Ship Hit by Suspected Missile Attack in Indian Ocean,” *Maritime Executive*, July 5, 2021, <https://www.maritime-executive.com/article/report-container-ship-hit-by-suspected-missile-attack-in-indian-ocean>; “Israeli officials say cargo ship possibly attacked en route to UAE - Israeli media,” *Reuters*, July 3, 2021, <https://www.reuters.com/world/middle-east/israeli-officials-say-cargo-ship-possibly-attacked-en-route-uae-israeli-n12-news-2021-07-03/>; Ronen Bergman and Adam Rasgon, “Cargo Ship, Recently Israeli-Led, is Struck in High Seas Encounter,” *New York Times*, July 3, 2021.

¹⁶⁵ U.S. Central Command, “U.S. Central Command Statement on the Investigation into the Attack on the Motor Tanker Mercer Street,” August 6, 2021, <https://www.centcom.mil/MEDIA/PRESS-RELEASES/Press-Release-View/Article/2722418/us-central-command-statement-on-the-investigation-into-the-attack-on-the-motor/>; U.S. Defense Intelligence Agency, “Iranian UAVs in Ukraine: A Visual Comparison,” February 2023, https://www.dia.mil/Portals/110/DIA_Iranian_UAVs_in_Ukraine-A_Visual_Comparison.pdf; Ilan Ben Zion, “Israel defense chief: Iran launched drone strike on tanker,” *Associated Press*, August 25, 2021, <https://apnews.com/article/middle-east-business-iran-israel-iran-nuclear-66329ed97cdd7ef98fd336fda72e223e>.

¹⁶⁶ U.S. Department of the Treasury, “Treasury Sanctions Network and Individuals in Connection with Iran’s Unmanned Aerial Vehicle Program,” October 29, 2021, <https://home.treasury.gov/news/press-releases/jv0443>.

¹⁶⁷ Dion Nissenbaum and Benoit Faucon, “Israeli-Affiliated Oil Tanker Hit by Suspected Iranian Drone,” *Wall Street Journal*, November 16, 2022; Maha El Dahan, “Tanker hit off Oman, says Israeli-controlled shipping firm,” *Reuters*, November 16, 2022, <https://www.reuters.com/world/middle-east/oil-tanker-struck-exploding-drone-attack-off-oman-ap-2022-11-16/>; Anna Ahronheim, “Gantz: Iran conducted 16 separate attacks in past 5 years in the Gulf and Red Sea,” *The Jerusalem Post*, December 1, 2022, <https://www.jpost.com/middle-east/article-723891>; Twitter account of BBC

In the sixth attack, in February 2023, Iran targeted the oil tanker “Campo Square,” affiliated with the Israeli Zodiac Maritime company. On February 10, 2023, the Campo Square was reportedly hit by a UAV—possibly a Shahed-136—in the Arabian Sea, causing minor damage and no casualties. According to one source, a total of three ships were attacked by UAVs, two of which were Israeli-owned and one of which was owned by the United Arab Emirates.¹⁶⁸ Although it is difficult to confidently link this and other Iranian strikes to specific Israeli actions, it may have been in response to an Israeli UAV attack on January 29 against an Iranian UAV facility in Esfahan. In response to that Israeli strike, Iran claimed to the UN that Israel continued to violate international law and the UN charter “through its threats to use force against Iran’s critical infrastructure.” Correspondingly, it stated that Iran reserved the right to “defend its national security and respond resolutely to any threats or wrongful actions by the Israeli regime, wherever and whenever deemed necessary.”¹⁶⁹

In the seventh and most recent instance, in April 2023, the IRGC-ASF reportedly was preparing to conduct one or more attacks using UAVs against Israel-linked ships in the Persian Gulf and Arabian Sea. The U.S. Fifth Fleet assessed that Iran was prepared to strike and issued a warning to Israel and to Israeli shipping. Also, the U.S. Navy deployed a guided missile submarine to the Middle East region to deter Iran. According to an Iranian source, the planned attacks were in retaliation for Israeli airstrikes in Syria in March that killed two IRGC officials. After those airstrikes, the IRGC stated that Israel would “undoubtedly receive a response” and Iran’s foreign ministry stated that Iran reserved the right to respond “at the right time and the right place.”¹⁷⁰ The planned Iranian strikes may also have been in response to a reported UAV attack against an Iranian ballistic missile-related facility in Esfahan.¹⁷¹

Iranian officials have consistently denied the country’s involvement in the reported attacks, and Tehran’s attempts at covert or deniable strikes against Israel-linked ships appear similar to its approach in the “Tanker War” of the 1980s. During that first Tanker War, Iran used “invisible shots” rather than overt attacks as retaliatory measures, in contrast to its public and overt use of

reporter Nafiseh Kohnavard, @nafisehkBBC, November 17, 2022, <https://twitter.com/nafisehkBBC/status/1593207214252380160>.

¹⁶⁸ “Israeli-linked ship attacked last week in Arabian Sea, manager says,” *Reuters*, February 18, 2023, <https://www.reuters.com/world/middle-east/israeli-linked-ship-attacked-last-week-arabian-sea-manager-says-2023-02-18/>; “Tanker owned by Israeli reportedly attacked by Iranian drone in Arabian Sea,” *Times of Israel*, February 17, 2023, <https://www.timesofisrael.com/israeli-owned-tanker-attacked-by-iranian-drones-in-arabian-sea-report/>; “yek naft-kesh mortebat ba milyardar-e Israeli dar darya-ye Arab hadaf-e hamleh gharar gereftah ast” [a tanker linked with Israeli billionaire was attacked in the Arabian Sea], *BBC Persian*, 28 Bahman 1401 [February 17, 2023], <https://www.bbc.com/persian/articles/ckdeedlnkdvo>; Arsalan Shahla, “Iran Strongly Denies Involvement in Arabian Sea Tanker Attack,” *Bloomberg News*, February 20, 2023, <https://www.bloomberg.com/news/articles/2023-02-20/iran-strongly-denies-involvement-in-arabian-sea-tanker-attack?leadSource=verify%20wall>.

¹⁶⁹ Permanent Mission of the Islamic Republic of Iran to the United Nations - New York, “Letter Dated 1 February to the President of the Security Council and UN Secretary General,” February 1, 2023, <https://newyork.mfa.ir/portal/product/10624/451/Letter-Dated-1-February-to-the-President-of-the-Security-Council-and-UN-Secretary-General>.

¹⁷⁰ Farnaz Fassih, Ronen Bergman, and Eric Schmitt, “U.S. Sends Attack Submarine to Middle East as Tensions Rise Between Iran and Israel,” *New York Times*, April 8, 2023, <https://www.nytimes.com/2023/04/08/world/middleeast/us-submarine-middle-east-iran.html>.

¹⁷¹ “hamleh-e nakam be mojteme-e vezarat-e defa dar Esfahan / sarneguni-e riz-parandeh” [failed attack on defense ministry complex in Esfahan / tiny UAV shot down], *Tasnim News*, 16 Farvardin 1402 [April 5, 2023], <https://www.tasnimnews.com/fa/news/1402/01/16/2875624/>; U.S. Department of the Treasury, “Treasury Sanctions Key Ballistic Missile Entities in Iran,” July 28, 2017, <https://home.treasury.gov/news/press-releases/sm0136>.

ballistic missiles and long-range rockets against Iraq as part of the “War of the Cities.” Despite Iran’s apparent aim to keep the recent ship attacks as covert or deniable, however, statements by IRGC officials provided hints of its involvement in the attacks. In November 2021, IRGC commander Hossein Salami stated that the IRGC had “ship-striking” (*keshti-zan*) UAVs that could hit any point on a ship.¹⁷² Later, in September 2022, IRGC deputy for operations Abbas Nilforushan noted that in the “battle of ships” (*nabard-e keshti-ha*), Israel was on its knees as Iran had reached the stage of deterrence and deterred Israel from further naval attacks.¹⁷³

According to one Israeli article, Iran’s motives for conducting these strikes were unclear but might include responding to Israeli military actions in Syria and Iranian territory in order to deter Israel from further actions. The article claimed that the attacks indicated Iran’s high confidence that it can get away with a “confrontational posture” in the face of perceived U.S. weakness.¹⁷⁴ Additional insights into Iran’s motives and approach may also be apparent in part in a set of April 2021 comments by deputy head of Iran’s Majles, in which he argued that, in response to Israel’s actions, Iran’s policy of “strategic patience” (*sabr-e esterezhik*) was no longer justified because the enemy would only take more provocative actions. He further indicated that Iran needed to retaliate, pursue active deterrence, and upset the enemy’s calculations through a suitable, quick, and shocking response from an area that it does not expect.¹⁷⁵

2022 Attack on Israeli Target in Erbil

Shifting from the naval to the air domain of the Iran-Israel “shadow war,” on March 13, 2022, the IRGC conducted a ballistic missile strike against what it claimed was an Israeli intelligence base in Erbil, Iraq.¹⁷⁶ In the attack, the IRGC-ASF reportedly fired 10-12 highly accurate Fateh-110-family ballistic missiles from the northwestern region of Iran,¹⁷⁷ and in sharp contrast to Iran’s covert and deniable attacks on Israel-linked ships outlined above, this attack was overt. A senior U.S. official indicated that the facility hit in Erbil was an Israeli intelligence base and training facility and confirmed that Israel conducted intelligence operations against Iran from Kurdistan.¹⁷⁸ Iranian press

¹⁷² Salami interview, November 2021, <https://www.youtube.com/watch?v=YXWTzTd5QmI> [removed].

¹⁷³ “moaven-e amaliyat-e sepah: mansha amaliyat alaieh keshvar-eman ra dar har noghteh-i mored-e esabat gharar midehim” [IRGC deputy for operations: we will hit the source of the operation against our country at any point], *Islamic Republic News Agency (IRNA)*, 5 Mehr 1401 [September 27, 2022], <https://www.irna.ir/news/84898834/>.

¹⁷⁴ Yoav Limor, “Attack on oil tanker should have Israel concerned, proves Iran’s sense of impunity,” *Israel Hayom*, November 17, 2022, <https://www.israelhayom.com/2022/11/17/irans-attack-on-oil-tanker-should-have-israel-concerned/>.

¹⁷⁵ “Ghazizadeh Hashemi: sabr-e esterezhik digar tojhi nadarad / ruikard-eman bazdarandegi-e fael bashad” [Ghazizadeh Hashemi: strategic patience is no longer justified / our approach should be active deterrence], *Mehr News*, 29 Farvardin 1400 [April 18, 2021], <https://www.mehrnews.com/news/5191745/>.

¹⁷⁶ Despite the target’s proximity to the U.S. consulate in Erbil, Iran was apparently not targeting U.S. interests.

¹⁷⁷ Amina Ismail and John Davison, “Iran attacks Iraq’s Erbil with missiles in warning to U.S., allies,” *Reuters*, March 13, 2022, <https://www.reuters.com/world/middle-east/multiple-rockets-fall-erbil-northern-iraq-state-media-2022-03-12/>; “joziyati az hamleh-ye mushaki-e sepah be maghar-e sehionist-ha / tamam-e mushak-ha be hadaf esabat kardeh ast” [details of the IRGC missile attack on Zionist headquarters / all of the missiles hit the target], *Tasnim News*, 22 Esfand 1400 [March 13, 2022], <https://www.tasnimnews.com/fa/news/1400/12/22/2681703/>; “maghar-e sehionist-ha dar Erbil ba mushak-ha-ye fateh 110 hadaf gharar gereft” [Zionist headquarters in Erbil targeted with fateh 110 missiles], *Islamic Republic News Agency (IRNA)*, 22 Esfand 1400 [March 13, 2022], <https://www.irna.ir/news/84682570/>.

¹⁷⁸ Farnaz Fassihi, Ronen Bergman, and Eric Schmitt, “Iran’s Attack Was Response to Secret Israeli Attack on Drone Site,” *New York Times*, March 16, 2022, <https://www.nytimes.com/2022/03/16/world/middleeast/iran-israel-attack-drone-site.html>.

reports claimed that several Israeli Mossad officials were killed or injured in the attack.¹⁷⁹ U.S. officials condemned Iran's attack as an "outrageous violation of Iraq's sovereignty" and called on Tehran to halt its attacks, respect Iraqi sovereignty, and stop interfering in Iraq's internal affairs.¹⁸⁰

According to one Western report, the strike reflected both "a more aggressive [Iranian] policy of responding to Israeli attacks and a more overt one," and its use of ballistic missiles was seen as a "serious escalation." While Iranian officials had stated that Tehran had been pursuing a strategy of "strategic patience" at least until the end of the Trump presidency, Gheis Ghoreishi, an Iranian analyst close to the Tehran government, indicated its strategic patience had ended and now it would answer attacks with attacks. According to Ghoreishi, the IRGC concluded that the most effective way to deal with Israel was to "increase the costs" and adopt an "eye for an eye" policy of strikes and counterstrikes.¹⁸¹

Press reports claimed that the attack was in retaliation for an Israeli UAV strike in mid-February on an Iranian UAV facility near Kermanshah, Iran, where the attack was reportedly launched from Kurdistan, Iraq.¹⁸² According to an IRGC statement, Iran's missile attack targeted the "strategic center of the Zionist conspiracy and evil" using point-strike missiles in response to Israel's "recent crimes"—possibly a reference to the strike on Iran's UAV facility. According to a "well-informed" Iranian source, the IRGC conducted the attack to punish Israel in the same Iraqi territory from which the Israelis had conducted actions against Iran.¹⁸³ The IRGC warned Israel that the repeat of "any evil" would face Iran's harsh, decisive, and destructive responses.¹⁸⁴ Iranian ambassador to Iraq Iraj Masjedi further noted that the attack on Erbil was against an Israeli "spy base" and not the Iraqi government, in the same way that Iran's strike against the U.S. Al Asad Air Base was against the United States and not Iraq. He claimed that Israel had established a base in Kurdistan which it used to work against the security of Iran.¹⁸⁵

¹⁷⁹ "Several Mossad forces killed, injured in Erbil missile attack," *Mebr News*, March 13, 2022, <https://en.mehrnews.com/news/184812/Several-Mossad-forces-killed-injured-in-Erbil-missile-attack>.

¹⁸⁰ U.S. Department of State, "Iran's Missile Strikes on the Kurdistan Region of Iraq," March 13, 2022, <https://www.state.gov/irans-missile-strikes-on-the-kurdistan-region-of-iraq/>; The White House, "Statement by National Security Advisor Jake Sullivan on Iran Missile Attack on Kurdistan Region of Iraq," March 13, 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/13/statement-by-national-security-advisor-jake-sullivan-on-iran-missile-attack-on-kurdistan-region-of-iraq/>.

¹⁸¹ Farnaz Fassih, Ronen Bergman, and Eric Schmitt, "Iran's Attack Was Response to Secret Israeli Attack on Drone Site," *New York Times*, March 16, 2022, <https://www.nytimes.com/2022/03/16/world/middleeast/iran-israel-attack-drone-site.html>.

¹⁸² Farnaz Fassih, Ronen Bergman, and Eric Schmitt, "Iran's Attack Was Response to Secret Israeli Attack on Drone Site," *New York Times*, March 16, 2022, <https://www.nytimes.com/2022/03/16/world/middleeast/iran-israel-attack-drone-site.html>; "Israel decimated Iranian drone fleet in February airstrike inside Iran - report," *Times of Israel*, March 15, 2022, <https://www.timesofisrael.com/israel-decimated-iranian-drone-fleet-in-february-airstrike-inside-iran-report/>.

¹⁸³ "joziyati az hamleh-ye mushaki-e sepah be maghar-e sehionist-ha / tamam-e mushak-ha be hadaf esabat kardeh ast" [details of the IRGC missile attack on Zionist headquarters / all of the missiles hit the target], *Tasnim News*, 22 Esfand 1400 [March 13, 2022], <https://www.tasnimnews.com/fa/news/1400/12/22/2681703/>.

¹⁸⁴ "etelayeh-ye sepah / tekrar-e harguneh-ye shariat-e sehionist-ha ba pasokh-ha-ye virangar movajeh mishavad" [IRGC notification / any repetition of Zionist evil will be met with devastating responses], *Fars News*, 22 Esfand 1400 [March 13, 2022], <https://www.farsnews.ir/news/14001222000560/>.

¹⁸⁵ "safir-e Iran: hamleh be Erbil na alaihak hakemiat-e Iraq balkeh zed-e payegah-e jasusi-e Israeli bud" [Iran's ambassador: attack on Erbil was not against the Iraqi government but was against Israeli espionage base], *Islamic Republic News Agency (IRNA)*, 23 Esfand 1400 [March 14, 2022], <https://www.irna.ir/news/84683681/>.

A spokesperson for Iran's Ministry of Foreign Affairs stated that it was unacceptable that one of Iran's neighbors was a "center of threat-creation" (*kanun-e ijad-e tabdid*) for Iran and claimed that Israel had repeatedly created insecurity involving Iraq-based opposition groups. He added that Iran did not tolerate having a center near its borders used to conduct sabotage and send terrorist groups into Iran, warning Israel that Tehran had intelligence about all the locations where it was present.¹⁸⁶ On this point, Ambassador Masjedi stated that Israel's Mossad had three other sites in Irbil that needed to be dealt with and expelled or they would be hit in the future.¹⁸⁷ Also, AFGS chief Mohammad Bagheri stated that Iraq should not allow armed counter-revolutionary groups to have training barracks, radio and television stations, and camps in that area, to hold congresses, to provide military training, to attack Iran's borders and regions, and assassinate Iranians.¹⁸⁸

It is also possible that the attack may have been carried out in response to a recent Israeli attack on Iranian forces in Syria. Indeed, according to an Iranian press report, the missile strike against the Israeli "center" in Irbil was in response to a recent Israeli attack against Iranian forces in Syria that killed two IRGC personnel. The report stated that Israel had crossed Iran's redlines of harming Iranian forces in Syria and would receive a definitive response. It added that Iran's missile attack was important for showing Israel that Tehran would respond to the crossing of its redlines.¹⁸⁹

According to Adam Lammon, the Iranian missile attack was an important event and shed light on several key indicators of Iran's capabilities and intentions to respond to threats. First, it showed that Iran's ballistic missile capabilities were "now so advanced that the IRGC can precisely destroy targets in close proximity to Americans without causing unwanted collateral damage or being reliably destroyed by U.S. missile defenses." Second, in addressing threats from Israel and others, Iran had demonstrated a high level of "restraint in responding to perceived aggression, creating space for both retaliation and subsequent de-escalation." Third, the attack indicated that Iran was "growing more emboldened and willing to directly retaliate with ballistic missiles against its adversaries." Lastly, the strike suggested that Iran would likely "continue relying on ballistic missiles in deterring and countering the most egregious threats to its security."¹⁹⁰

2022 Suspected Planned Attack on Irbil

In early November 2022, the Saudi government reportedly told Washington that Iran planned to conduct an unspecified attack against Irbil (as well as Saudi Arabia) within the next 48 hours, apparently in response to support for Iran's internal opposition.¹⁹¹ Although the precise details of

¹⁸⁶ "Khatibzadeh: alan dar noghteh-ye alam-e tavafogh gharar nadarim / Israel bedanad nesbat be tamam-e noghati keh hozur darad ashraf-e etelaati darim" [Khatibzadeh: we are not at the point of announcing an agreement now / Israel should know that we have intelligence capabilities about all the places where they are present], *Tasnim News*, 23 Esfand 1400 [March 14, 2022], <https://www.tasnimnews.com/fa/news/1400/12/23/2682097/>.

¹⁸⁷ "safir-e Iran dar Iraq: be Iraq va Amrika kari nadashtim; hoshdar-eman be maghamat aghlim bud" [we had nothing to do with Iraq and America; our warning was to the regional authorities], *Young Journalists Club (YJC)*, 23 Esfand 1400 [March 14, 2022], <https://www.yjc.ir/fa/news/8087259/>.

¹⁸⁸ Twitter account of AFGS chief Mohammad Bagheri, @baghery_ir, March 15, 2022, https://twitter.com/baghery_ir/status/1503747589749067778?s=27.

¹⁸⁹ "A missile attack with two messages," *Islamic Republic News Agency (IRNA)*, March 14, 2022, <https://en.irna.ir/news/84683771/A-missile-attack-with-two-messages>.

¹⁹⁰ Adam Lammon, "The Real Impact of Iran's Ballistic Missile Strike on Iraq," *National Interest*, March 14, 2022, <https://nationalinterest.org/feature/real-impact-iran%E2%80%99s-ballistic-missile-strike-iraq-201193>.

¹⁹¹ Dion Nissenbaum, "Saudi Arabia, U.S. on High Alert After Warning of Imminent Iranian Attack," *Wall Street Journal*, November 1, 2022; Barbara Starr, Alex Marquardt, and Natasha Bertrand, "US and Saudi Arabia concerned that Iran

the plan are unclear, it is possible that Iran may have intended to attack Israeli targets near Irbil like its missile attack earlier in March. For instance, as noted above, Iranian officials had claimed in March that Israel's Mossad had three other sites in Irbil that Iran could strike in the future.¹⁹² Of note is the fact that Iran, in mid-to-late November, did conduct multiple missile and UAV attacks against Iranian opposition groups in the area of Irbil. Thus, these may have been the intended targets of the planned early November attack, rather than Israeli targets.¹⁹³

Risks and Costs of Iranian Attacks

What risks or costs did Iran incur in conducting these attacks as part of the pattern break in question? The answer to this question matters because, according to Zachary Shore, changes in an adversary's behavior that imposes risks or costs on itself can be especially revealing of, for example, its underlying drivers.¹⁹⁴ Indeed, Shore writes that,

When routine trends are broken and individuals behave in unexpected ways, that information can reveal more about an opponent's root ambitions than his actions under normal conditions. This is primarily true when an opponent's actions impose costs upon himself.¹⁹⁵

Shore's observations in this regard are pertinent to this case because Iran's long-range strikes from Iranian territory against Saudi, U.S., and Israeli targets clearly meant a greater risk of consequential costs for Tehran both in the shorter and longer term. These included the possibility of military escalation, attacks on Iranian military or economic targets, or full-scale war with the United States and Israel. They also included potential economic costs resulting from additional sanctions or Israeli tit-for-tat attacks on Iranian shipping. Furthermore, Iran risked incurring diplomatic costs by inviting international condemnation and exacerbating already tense relations with regional countries.

In the view of Iranian leaders and military officials, however, the risks of responding forcefully may have been outweighed by the risks of *not* responding and thus inviting further actions from Tehran's adversaries. Judging from Iranian statements and actions about the attacks and the country's military strategy in general, it appears that Iran saw an opportunity—and indeed the need—to show its

may be planning attack on energy infrastructure in Middle East," *CNN*, November 1, 2022, <https://www.cnn.com/2022/11/01/politics/us-saudi-arabia-iran-energy-infrastructure-middle-east/index.html>; Dion Nissenbaum, "Threat of Iran Attack Has Eased, U.S. and Persian Gulf Officials Say," *Wall Street Journal*, November 3, 2022.

¹⁹² "safir-e Iran dar Iraq: be Iraq va Amrika kari nadashtim; hoshdar-eman be maghamat aghlim bud" [we had nothing to do with Iraq and America; our warning was to the regional authorities], *Young Journalists Club (YJC)*, 23 Esfand 1400 [March 14, 2022], <https://www.yjc.ir/fa/news/8087259/>.

¹⁹³ "Iran strikes dissident sites in Iraqi Kurdistan, two dead - officials," *Reuters*, November 14, 2022, <https://www.reuters.com/world/middle-east/rocket-attack-near-iraqs-erbil-kills-one-wounds-10-mayor-2022-11-14/>; "One dead after Iran strikes Kurdish groups in Iraq with missiles, drones," *Times of Israel*, November 21, 2022, <https://www.timesofisrael.com/one-dead-after-iran-strikes-kurdish-groups-in-iraq-with-missiles-drones/>.

¹⁹⁴ Author's discussion with Zachary Shore, November 8, 2022.

¹⁹⁵ Zachary Shore, *A Sense of the Enemy: The High Stakes History of Reading Your Rival's Mind* (Oxford: Oxford University Press, 2014), Kindle edition, location 3267. Similarly, Shore states that an enemy can expose its underlying drivers or constraints when it "behaves in a way that imposes genuine costs upon himself—costs with long-term implications." (H-Diplo Roundtable on A Sense of the Enemy: The High-Stakes History of Reading Your Rival's Mind, Volume XIX, No. 20 (2018), January 29, 2018, <https://networks.h-net.org/node/28443/discussions/1298592/h-diplo-roundtable-xix-20-sense-enemy-high-stakes-history-reading>.)

resolve, demonstrate its capabilities, and highlight and exploit its adversaries' vulnerabilities by means of its forceful responses. With Saudi Arabia, for instance, Iran considered it important to push back against "economic warfare" with kinetic action and to reveal Riyadh's military and economic vulnerabilities. With the United States, it was important to show Iran's resolve and capabilities, highlight U.S. vulnerabilities to attack, and signal to Washington that it could not "hit and run" without a forceful response. With Israel, it was important to show Iran's resolve and capabilities—both covert and overt—while also demonstrating Israeli vulnerabilities to Iranian kinetic action.

New Pattern: 2020s

Since this pattern break examined in this chapter runs through 2022-2023, we are currently witnessing the evolution of Iran's "new" pattern for the acquisition, threat, and use of strategic weapons in real time. Nevertheless, we can preliminarily identify some of its main features including, specifically, a continuation of key elements of the initial pattern of the 2010s in the areas of military strategy and weapons acquisition. In terms of strategy, the new pattern includes a continued focus on deterrence and asymmetric strategies, an emphasis on offensive elements of military strategy—especially by the IRGC, but also the Artesh—and the reliance on Iran's Axis of Resistance partners for deterrence and asymmetric warfare. In the area of acquisition, meanwhile, the new pattern clearly continues Iran's high priority devoted to expanding its capabilities in ballistic missiles, LACMs, and UAVs as the means to support these elements of its military strategy.

Military Strategy

As was the case in the 2010s, the main perceived threats informing Iran's new pattern are the United States, Israel, and Saudi Arabia.¹⁹⁶ Also similar to the previous decade, Iran's apparent strategic confidence in confronting those threats is high based on its stated views about its resolve and capabilities, as well as what it perceives to be the vulnerabilities of its adversaries. For instance, leaders in Tehran saw few if any actual U.S. military responses to its direct actions outlined above, including its missile and UAV attack on Saudi Arabia, its downing of the U.S. UAV, and its missile attack on the U.S. Al Asad Air Base in 2020. As a result, Iranian leaders appear to feel they have a free hand to take risky actions with little fear of reprisal.

In addition to its own perceptions, in recent years Iran has increasingly heard foreign adversaries (especially the United States) acknowledge its growing military capabilities and strategic confidence. In 2020-2021, for instance, U.S. military officials described the challenge of deterring Iran,

¹⁹⁶ With Iranian and Saudi efforts, brokered by China, in 2022-2023 to reduce tensions and normalize relations, the role of Saudi Arabia as a key perceived threat to Iran may decrease in the future. (Jon Gambrell, "Iran, Saudi Arabia agree to resume ties, with China's help," *AP News*, March 10, 2023, <https://apnews.com/article/saudi-arabia-iran-diplomatic-ties-2f80bb71a995910cb4b172e5dbec3526>.)

characterizing the situation as a state of “contested deterrence”¹⁹⁷ or “uneasy deterrence,”¹⁹⁸ and later in early 2023, officials concluded that Iran was “undeterred.”¹⁹⁹ Additionally, CENTCOM commander McKenzie noted the waning of U.S. military superiority in the region and the “expanding threat” of Iran’s ballistic missile, cruise missile, and UAV capabilities. He stated that Iran’s missile capabilities had enabled it to achieve “overmatch”—what he defined as the “ability to overwhelm”—and indicated that, due to Iran’s UAV capabilities, the U.S. military was “operating without complete air superiority” for the first time since the Korean War of the 1950s.²⁰⁰

Indeed, according to CENTCOM’s former commander for special operations, Iran had achieved its “strongest strategic position” since 1979.²⁰¹ Consistent with this view, in April 2023, Israeli defense minister Yoav Gallant stated that “Iran feels increasing self-confidence. In its view, the West is deterred and lacks effective tools against it.” He added that, “Iran is getting stronger economically and militarily and this gives it room for action. This is something that should keep the whole world, and Israel, awake at night.”²⁰² In this way, Iran’s strategic confidence appears to be validated by military officials of its main adversaries.

As was the case in the 2010s and during the pattern break, Iranian officials have also continued to highlight the importance of their country’s deterrence and asymmetric strategies, as well as the increasing role of offensive approaches and capabilities to support its military strategy. Iran continues to emphasize the central role of deterrence, within the overall framework of all-dimensional deterrence as before.²⁰³ Specifically, Iranian officials continue to highlight the concepts

¹⁹⁷ U.S. Central Command, “Posture Statement of General Kenneth F. McKenzie, Jr., Commander, United States Central Command, Before the Senate Armed Services Committee,” March 12, 2020, https://www.armed-services.senate.gov/imo/media/doc/McKenzie_03-12-20.pdf; Joyce Karam, “US general calls Iran the most challenging driver of instability in the Middle East,” *The National News*, February 8, 2021, <https://www.thenationalnews.com/world/the-americas/us-general-calls-iran-the-most-challenging-driver-of-instability-in-the-middle-east-1.1162360>.

¹⁹⁸ Jon Gambrell, “US Navy official says ‘uneasy deterrence’ reached with Iran,” *Associated Press*, December 6, 2020, <https://apnews.com/article/bahrain-dubai-iran-united-arab-emirates-persian-gulf-tensions-27e71b153a012c8a864bcff38550f5f8>.

¹⁹⁹ U.S. Central Command, “Statement of General Michael ‘Erik’ Kurilla on the Posture of the U.S. Central Command,” Senate Armed Services Committee, March 16, 2023, <https://www.centcom.mil/ABOUT-US/POSTURE-STATEMENT/>.

²⁰⁰ Robin Wright, “The Looming Threat of a Nuclear Crisis With Iran,” *New Yorker*, December 27, 2021; “Iran has taken air superiority from U.S., says CENTCOM,” *Tehran Times*, April 21, 2021, <https://www.tehrantimes.com/news/460117/Iran-has-taken-air-superiority-from-U-S-says-CENTCOM>.

²⁰¹ Jared Szuba, “Following Biden’s MidEast visit, Pentagon aims to do more with less,” *Al-Monitor*, July 27, 2022, <https://www.al-monitor.com/originals/2022/07/following-bidens-mideast-visit-pentagon-aims-do-more-less>.

²⁰² Emanuel Fabian, “Gallant warns multi-front war far more likely for Israel than limited conflicts,” *Times of Israel*, April 20, 2023, <https://www.timesofisrael.com/gallant-warns-multi-front-war-far-more-likely-for-israel-than-limited-conflicts/>.

²⁰³ According to Hamidreza Azizi, Iran’s various deterrence strategies, doctrines, and approaches were “defined within the framework” of all-dimensional deterrence. (Hamidreza Azizi, “The Concept of ‘Forward Defense’: How Has the Syrian Crisis Shaped the Evolution of Iran’s Military Strategy?” Syria Transition Challenges Project, Geneva Centre for Security Policy, February 2021, <https://dam.gcsp.ch/files/doc/iran-forward-defence-strategy-en>, p. 7.)

of “active deterrence,”²⁰⁴ “defensive deterrence,”²⁰⁵ and “offensive deterrence,”²⁰⁶ as well as the strategic principles of “threat against threat”²⁰⁷ and “the era of hit and run is over.”²⁰⁸ They additionally stress the importance of retaliation²⁰⁹—both threatened and actual—as part of Iran’s deterrence strategy, as was the case in the past.

Iran also continues to refine its asymmetric strategy and associated capabilities²¹⁰ and to rely on its Axis of Resistance partners in the region to support its deterrence and asymmetric strategies. These aspects of its pattern also enable Iran to expand its strategic depth.²¹¹ Lastly, Iran continues to conduct military exercises as a deterrence measure and to maintain and improve the capabilities and readiness of the military forces of the IRGC and Artesh. These exercises have included many instances of both IRGC and Artesh long-range strike operations using missiles and UAVs.²¹²

Weapons Acquisition

As was the case before the pattern break, Iran continues to place a high priority on expanding the qualitative and quantitative capabilities of its ballistic missiles, LACMs, and UAVs as important

²⁰⁴ Iranian Ministry of Defense and Armed Forces Logistics (MODAFL), “barnameh-ha-ye chahar-saleh-ye vazir-e defa va poshtibani-e niru-ha-ye mosalah” [four-year programs of the minister of defense and armed forces logistics], 1400-1404 [March 2021-March 2026], pp. 15, 19.

²⁰⁵ “runamayi az payegah-ha-ye pahpadi-e sepah / sarlashkar Salami: be andazeh-ye kafi selah-ha-ye moaser-e bumi darim” [unveiling of IRGC UAV bases / general Salami: we have enough effective domestic weapons], *Fars News*, 14 Esfand 1400 [March 3, 2022], <https://www.farsnews.ir/news/14001214000515/>.

²⁰⁶ “sarlashkar Rashid: ghodrat-e defai-e Iran ba ruikard-e bazdarandegi-e tahajomi samandehi shodeh ast” [general Rashid: Iran’s defense power is organized with an offensive deterrence approach], *Tasnim News*, 20 Mehr 1399 [October 20, 2020], <https://www.tasnimnews.com/fa/news/1399/07/29/2373090/>.

²⁰⁷ “farmandeh-ye niru-ye daryai-e sepah-e pasdaran: rahbord-e Iran solh va dusti hamrah ba amniyat-e hamegani ast” [IRGC navy commander: Iran’s strategy is peace and friendship along with public security], *Islamic Republic News Agency (IRNA)*, 29 Aban 1399 [November 19, 2020], <https://www.irna.ir/news/84116009/>.

²⁰⁸ “shahrekord maghsad-e bist-o-chaharomin safar-e dolat / Raisi: duran-e ‘bezan va dar ru’ tamam shodeh” [Shahrekord is the destination of the 24th visit of the government / Raisi: the era of “hit and run” is over], *Mehr News*, 19 Khordad 1401 [June 9, 2022], <https://www.mehrnews.com/news/5509922/>.

²⁰⁹ “rais-e setad-e kol-e niru-ha-ye mosalah ruz-e artesh ra tabrik goft” [AFGS chief stated congratulations for artesh day], *Mehr News*, 29 Farvardin 1398 [April 18, 2019], <https://www.mehrnews.com/news/4594709/>.

²¹⁰ “sarlashkar Bagheri: be raghm-e eghtedar-e niru-ha-ye mosalah bayad amadeh-ye jang-ha-ye na-hamtaraz bashim” [general Bagheri: despite the power of the armed forces, we must be ready for unequal wars], *Fars News*, 25 Khordad 1401 [June 15, 2022], <https://www.farsnews.ir/news/14010325000776/>.

²¹¹ See, for example: Kenneth M. Pollack, “The Evolution of the Revolution: The Changing Nature of Iran’s Axis of Resistance,” American Enterprise Institute, March 2020, pp. 1-2, 7-10. Pollack states, “in the past decade, cooperation among the Axis of Resistance has grown from largely *covert* terrorist collusion, funding, intelligence sharing, rhetorical support, and tacit diplomacy to increasingly *overt* force deployments, joint military operations, economic assistance, deterrence, and alliance solidarity.” (p. 2)

²¹² “marhaleh-ye nahai-e razmayesh-e peyambar azam 17 / az hoshdar-e farmandeh-ye kol-e sepah be sehionist-ha ta mushak-baran-e ahdaP” [final phase of great prophet 17 exercise / from warning of IRGC commander to zionists to raining of missiles on targets], *Fars News*, 3 Dey 1400 [December 24, 2021], <https://www.farsnews.ir/news/14001003000292/>; “payan-e razmayesh-e pahpadi-e artesh / ghodrat-e pahpadi-e Iran moshti-e ahanin bar sar-e doshmanan” [end of artesh UAV exercise / Iran’s UAV power is an iron fist on enemies’ heads], *Fars News*, 3 Shahrivar 1401 [August 25, 2022], <https://www.farsnews.ir/news/14010603000879/>; “baz-khani-e ‘razmayesh-e zolfaghar 1401-e artesh’ / az shelik-e talash, 15 khordad va velayat 5 ta ejra-ye movafagh-e pish az 200 senario-ye mokhtaleP” [review of “artesh zolfaghar 1401 exercise” / from firing of talash, 15 khordad and velayat 5 to successful execution of more than 200 different scenarios], *Fars News*, 12 Farvardin 1402 [April 1, 2023], <https://www.farsnews.ir/news/14020112000415/>.

means to support its military strategy. Iran's acquisition of these systems continues to be driven in particular by the increasingly offensive elements of IRGC and Artesh military strategy noted above.

Iran continues extensive work on ballistic missiles—liquid- and solid-propellant—including efforts to increase their accuracy against both land-based and naval targets. In 2020, MODAFL unveiled its 1,400-km-range “Shahid Haj Ghasem” MRBM, named after former IRGC-QF commander Ghasem Soleimani. This missile was touted as Iran's first “tactical” solid-propellant ballistic missile that could target Israel, since it had improved tactical and logistical capabilities over Iran's “strategic” MRBMs such as the Sejil, Ghadr, and Khorramshahr.²¹³ In 2022, Iran unveiled the 1,400-km-range Rezvan liquid-propellant MRBM, probably developed by MODAFL, which Iran claimed was capable of “point-strike” accuracy.²¹⁴ The following year in 2023 MODAFL unveiled the fourth version of its Khorramshahr MRBM, called the Khorramshahr-4 or Kheybar, with a claimed 2,000 km range, 1,500 kg warhead, and point-strike accuracy.²¹⁵ For its part, the IRGC-ASF unveiled its 1,450-km-range Kheybar Shekan MRBM in 2022,²¹⁶ reflecting the IRGC's increasing role in developing ballistic missiles in parallel to MODAFL, including the Raad-500 and Dezful missiles noted previously. In addition, in 2023, the IRGC-ASF unveiled the Fattah hypersonic ballistic missile—reportedly based on the Kheybar Shekan²¹⁷—which it claimed had a range of 1,400 km (which could be increased to 2,000 km²¹⁸), a speed of Mach 13, and the capability to maneuver and defeat missile defenses.²¹⁹

Iran also continues its efforts to develop anti-ship ballistic missiles (ASBMs) with increasing ranges, including the 700-km-range Zolfaghar Basir ASBM²²⁰ and anti-ship versions of its MRBMs. In 2021,

²¹³ “‘ghasem’ bord-e mushak-ha-ye taktiki-e Iran ra be Israel resanad / jadid-tarin mushak-e balestik-e Iran che mokhtasati darad?” [“‘ghasem’ brought the range of Iran's tactical missiles to Israel / what are the details of Iran's newest ballistic missile?”], *Tasnim News*, 1 Shahrivar 1399 [August 22, 2020], <https://www.tasnimnews.com/fa/news/1399/06/01/2332352/>.

²¹⁴ “mushak-e balestik-e ‘rezvan’ runamai shod / nemayesh-e mushak-e kheybar shekan baraye nakhostin bar” [“‘rezvan’ ballistic missile was unveiled / display of kheybar shekan missile for the first time”], *Tasnim News*, 31 Shahrivar 1401 [September 22, 2022], <https://www.tasnimnews.com/fa/news/1401/06/31/2777676/>.

²¹⁵ “ba hozur-e vazir-e defa surat gereft: runamai az mushak-e rahbordi-e bord-e boland va noqteha-zan-e khorramshahr 4 + aks” [in the presence of the defense minister: unveiling of khorramshahr 4 strategic, long-range, and point-strike missile + photos], *Mehr News*, 4 Khordad 1402 [May 25, 2023], <https://www.mehrnews.com/amp/5789868/>.

²¹⁶ “fanavari-e mushaki-e sepah takmil shod / ‘kheybar shekan’ chabok a taktiki ast” [IRGC's missile technology has been completed / “kheybar shekan” is agile and tactical], *Mehr News*, 20 Bahman 1400 [February 9, 2022], <https://www.mehrnews.com/news/5420882/>.

²¹⁷ “‘fattah’ va ‘kheybar shekan’: tir-ha-ye gheyb bar sar-e separ-ha-ye mushaki / gozaresh-e tahlili-e tasnim az mushak-e hypersonik-e Irani” [“‘fattah’ and ‘kheybar shekan’: invisible shots on missile shields / Tasnim's analytical report on Iranian hypersonic missiles”], *Tasnim News*, 20 Khordad 1402 [June 10, 2023], <https://www.tasnimnews.com/fa/news/1402/03/20/2908430/>.

²¹⁸ “sardar Hajizadeh: momken ast bord-e mushak-e hypersonik ra ta 2000 kilometr afzayesh dehim” [general Hajizadeh: it is possible we will increase the range of the hypersonic missile to 2000 kilometers], *Jamaran News*, 1 Tir 1402 [June 22, 2023], <https://www.jamaran.news/fa/tiny/news-1598398>.

²¹⁹ “sardar Hajizadeh: mushak-e kruz-e ‘paveh’ be sabad-e mushaki-e keshvar ezafeh shod / nav-ha-ye Amrikai ta 2 hezar kilometr dar tir-ras-e ma hastand” [general Hajizadeh: “paveh” cruise missile was added to the country's missile portfolio / American ships are in our crosshairs up to 2 thousand kilometers], *Iranian Students' News Agency (ISNA)*, 6 Esfand 1401 [February 25, 2023], <https://www.isna.ir/news/1401120603548/>; “Fattah: mushak-e hypersonik-e sepah runamai shod + moshakhasat” [Fattah: IRGC hypersonic missile was unveiled + details], *Tasnim News*, 16 Khordad 1402 [June 6, 2023], <https://www.tasnimnews.com/fa/news/1402/03/16/2906342/>.

²²⁰ “jadid-tarin mushak-e sepah ba nam-e ‘zolfaghar basir’ be nemayesh dar-amad” [the newest IRGC missile named ‘zolfaghar basir’ was displayed], *Islamic Republic News Agency (IRNA)*, 6 Mehr 1399 [September 27, 2020], <https://www.irna.ir/news/84056290/>.

IRGC commander Salami stated that one of the IRGC's goals was to be able to target enemy naval ships such as aircraft carriers with long-range ballistic missiles.²²¹ In 2023, AFGS chief Bagheri claimed Iran was developing a 1,500-km-range ballistic missile to attack moving naval targets,²²² and IRGC-ASF commander Hajizadeh claimed that Iran could target U.S. ships as far as 2,000 km.²²³

Also, both MODAFL and the IRGC continue their work on developing and launching space launch vehicles (SLVs), which has been accompanied by ongoing concerns on the part of the United States and Western countries about Iran's possible intentions for IRBMs and ICBMs. During 2019 to 2023, MODAFL launched its Safir, Simorgh, and Zoljanah SLVs, and the IRGC launched its Ghased and Ghaem SLVs.²²⁴ The Zoljanah, Ghased, and Ghaem SLVs have raised particular concerns relating to their long-range missile potential since they all use solid-propellant rocket motors—which require much less preparation than liquid-propellant rocket engines—and can be launched from mobile launchers. Also adding to missile concerns is the fact that, in 2022, an IRGC-ASF official referred to the Ghaem as an ICBM on live TV.²²⁵ That same year, a representative of Supreme Leader Khamenei stated that the Ghaem SLV could operate as a 12,000-km-range intercontinental missile that could target the United States.²²⁶

Like in the area of ballistic missiles, MODAFL and the IRGC continue their parallel development of LACMs with ranges of up to 2,000 km. In 2020, MODAFL unveiled its more than 1,000-km-range “Shahid Abu Mahdi” cruise missile, the latest variant of its Kh-55-based family of cruise missiles, and in 2023 delivered the missile to the IRGC and Artesh navies. Although an ASCM, the Abu

²²¹ “sarlashkar Salami: yeki az rahbord-ha-ye defai-e ma hadaf-e gharar-dadan-e nav-ha-ye doshman ba mushak-e balestik ast” [general Salami: one of our defense strategies is to target enemy ships with ballistic missiles], *Fars News*, 27 Dey 1399 [January 16, 2021], <https://www.farsnews.ir/news/13991027000423/>.

²²² “tolid-e mushak-e balestik alayeh ahdaf-e daryai-e moteharek ba bord-e 1500 kilometr” [production of ballistic missile for moving naval targets with range of 1500 kilometers], *Tasnim News*, 15 Esfand 1401 [March 6, 2023], <https://www.ghatreh.com/news/nn14011205242358865920/>.

²²³ “sardar Hajizadeh: mushak-e kruz-e ‘paveh’ be sabad-e mushaki-e keshvar ezafeh shod / nav-ha-ye Amrikiai ta 2 hezar kilometr dar tir-ras-e ma hastand” [general Hajizadeh: “paveh” cruise missile was added to the country’s missile portfolio / American ships are in our crosshairs up to 2 thousand kilometers], *Iranian Students’ News Agency (ISNA)*, 6 Esfand 1401 [February 25, 2023], <https://www.isna.ir/news/1401120603548/>.

²²⁴ “vezarat-e defa-e Iran: mahvareh-bar-e simorgh natavanest mahmuleh-ha-ye khod ra dar madar gharar dehad” [Iran’s defense ministry: simorgh SLV could not place its payload into orbit], *Radio Farda*, 10 Dey 1400 [December 31, 2021], <https://www.radiofarda.com/a/iran-simorgh-failed-test/31634805.html>; “dovomin partab-e tahghighati-e mahvareh-bar-e zoljanah” [second research launch of zoljanah SLV], *Fars News*, 5 Tir 1404 [June 26, 2022], <https://www.farsnews.ir/news/14010405000795/>; “mahvareh-ye noor-2-e sepah be faza partab shod” [IRGC noor-2 satellite launched to space], *Islamic Republic News Agency (IRNA)*, 17 Esfand 1400 [March 8, 2022], <https://www.irna.ir/news/84675620/>; “be hemat-e niru-ye havafaza-ye sepah anjam shod: partab-e movafaghiat-amiz-e zir-madari-e mahvareh-bar-e ghaem 100” [conducted with support of the IRGC aerospace force: successful suborbital launch of ghaem 100 SLV], *Mehr News*, 14 Aban 1401 [November 5, 2022], <https://www.mehrnews.com/news/5625128/>.

²²⁵ “mushak-e ghareh...vazeh-ye jenabali moshaver-e farmandeh-ye havafaza-ye sepah dar pakhsh-e zendeh!” [a [...]continental missile...the controversial word of the IRGC Aerospace commander’s adviser on live broadcast!], *Aparat*, November 2022, <https://www.aparat.com/v/H0yJV>.

²²⁶ Twitter account of MEMRI, @MEMRIReports, November 21, 2022, <https://twitter.com/memrireports/status/1594631072473812992?s=51&t=j0uf5iaTIYVmswjyJP3xhQ>; “emam-e jomeh-ye Yasuj: sakht-e mushak-e hypersonik-e sepah-e pasdaran javab-e yaveh-gui-ha-ye Amrikast” [Friday imam of Yasuj: manufacture of the IRGC’s hypersonic missile is the answer to America’s taunts], *Islamic Republic News Agency (IRNA)*, 20 Aban 1401 [November 11, 2022], <https://www.irna.ir/news/84938988/>.

Mahdi (also called the Talaiyeh) can be converted into a LACM.²²⁷ In 2023, Iran unveiled the Asef air-launched 2,000-km-range LACM—another missile based on MODAFL’s Kh-55 family—to be deployed on the IRIAF’s Sukhoi Su-24 fighter bombers.²²⁸ That same year, the IRGC announced its own new LACM, the 1,650-km-range Paveh,²²⁹ which experts assessed was probably based on the IRGC’s “351” LACM.²³⁰ In addition, the Artesh has entered into LACM development with its Heidar family of air-launched missiles with ranges up to 200 km,²³¹ reflecting the Artesh’s emerging role in both the development and deployment of long-range strike weapons.

Like with ballistic and cruise missiles, Iran continues to expand its qualitative and quantitative UAV capabilities for long-range strike missions. Multiple organizations within MODAFL as well as the IRGC and Artesh have developed and produced numerous families of UAVs for deployment by the IRGC and Artesh. This includes long-range armed UAVs to deliver missiles and bombs as well as an increasingly diverse mix of long-range suicide UAVs, several with ranges of 1,000-2,000 km.²³²

In addition, Iranian officials continue to emphasize the importance of improving Iran’s level of self-sufficiency in the development and production of these systems and their supporting defense industries.²³³ This emphasis on self-sufficiency, as well as the high priority placed on these systems, is reflected in the parallel development and production by both MODAFL and the IRGC—and in some cases, the Artesh—of these key weapon systems, which helps to increase Iran’s domestic capabilities and decrease its reliance on foreign systems. As in previous decades, however, Iranian

²²⁷ “gozaresh-e tasnim az jadid-tarin kruz-e Irani / aya mushak-e ‘abu mehdi’ haman mushak-e ‘hoveyzeh’ ast?” [tasnim report on the newest Iranian cruise missile / is the “abu mehdi” missile the same as the “hoveyzeh” missile?], *Tasnim News*, 31 Mordad 1399 [August 21, 2020], <https://www.tasnimnews.com/fa/news/1399/05/31/2332226/>; “mo’aven-e san’ati-e vezarat-e defa: mushak-e balestik-e haj ghasem tahvil-e sepah mishavad” [industrial deputy of defense ministry: haj ghasem ballistic missile will be delivered to the IRGC], *Tasnim News*, 3 Mordad 1402 [July 25, 2023], <https://www.tasnimnews.com/fa/news/1402/05/03/2931063/>.

²²⁸ “mushak-e kruz-e bord-e boland-e ‘asef’ selah-e jadid-e sukho 24” [long-range cruise missile “asef” new weapon of sukhoi 24], *Tasnim News*, 18 Bahman 1401 [February 7, 2023], <https://www.tasnimnews.com/fa/news/1401/11/18/2849760/>; “Iran Air Force pushing for enhancement, modernization,” *Islamic Republic News Agency (IRNA)*, May 4, 2023, <https://en.irna.ir/news/85101277/Iran-Air-Force-pushing-for-enhancement-modernization>.

²²⁹ “ashenai ba mushak-e kruz-e ‘paveh’ / bord-e kruz-ha-ye zamini-e Iran 22 darsad afzayesh yافت” [familiarization with the “paveh” cruise missile / range of ground cruise missiles of Iran increased 22 percent], *Tasnim News*, 14 Esfand 1401 [March 5, 2023], <https://www.tasnimnews.com/fa/news/1401/12/14/2861881/>.

²³⁰ “In Video: Iran’s Revolutionary Guards Unveil Long-Range Cruise Missile,” *South Front*, February 25, 2023, <https://southfront.org/in-video-irans-revolutionary-guards-unveil-long-range-cruise-missile/>.

²³¹ “mushak-e kruz-e ‘heidar’ che ghabeliyat-ha-i darad?” [what capabilities does the “heidar” cruise missile have?], *Iranian Students’ News Agency (ISNA)*, 21 Esfand 1401 [March 12, 2023], <https://www.isna.ir/news/1401122114782/>.

²³² “ertegha-ye jayegah-e sanat-e defai-e keshvar: zamen-e amniyat-e melli” [improving the position of the country’s defense industry; guarantor of national security], *Islamic Republic News Agency (IRNA)*, 31 Mordad 1400 [August 22, 2021], <https://www.irna.ir/news/84444198/>; “namayesh-e sad-ha farvand-e pahpad-e artesht ba hozur-e sarlashkar Bagheri” [exhibition of hundreds of artesht UAVs in the presence of general Bagheri], *Fars News*, 16 Dey 1399 [January 5, 2021], <https://www.farsnews.ir/news/13991016000410/>; “sabt-e bord-e 7000 kilometr baraye pahpad-ha-ye sepah; chalesh-e jadid-e Amrika dar mantegheh” [registering a range of 7,000 kilometers for IRGC UAVs; America’s new challenge in the region], *Tasnim News*, 6 Tir 1400 [June 27, 2021], <https://www.tasnimnews.com/fa/news/1400/04/06/2528637/>.

²³³ “vazir-e defa: Iran vared-e layeh-ha-ye omigh-tar-e khod-kafai shodeh ast” [defense minister: Iran has entered deeper layers of self-sufficiency], *Islamic Republic News Agency (IRNA)*, 15 Mehr 1399 [October 6, 2020], <https://www.irna.ir/news/84066446/>.

developers appear to continue to rely on the foreign supply of certain components and materials for these systems even as the country’s domestic capabilities increase.²³⁴

In view of the points above regarding Iran’s perceived threats, its high confidence in confronting them, the offensive elements of its military strategy, and the capabilities it has developed to support it, it may be said that the Iran we encounter 2023 is more confident, more hostile, and more capable than ever before.

Table 6: Iran’s New Pattern for Strategic Weapon Acquisition, Threat, and Use

Element of New Pattern	Key Organizations
Military Strategy	
Increased emphasis on offensive elements of military strategy	IRGC, Artesh
Retaliatory deterrence, including retaliatory operations	IRGC Aerospace Force
Asymmetric strategy for deterrence and warfighting	IRGC, Artesh
Military exercises to enhance readiness, deterrence, and asymmetric capabilities	IRGC, Artesh
Reliance on Axis of Resistance for deterrence and asymmetric strategies	IRGC
Acquisition	
Ballistic missiles: Expanding SRBM and MRBM programs, increasing accuracy, expanding ASBM programs, concerns about ICBM intentions	MODAFL, IRGC
LACMs: Expanding capabilities	MODAFL, IRGC
UAVs: Expanding armed and suicide UAVs	MODAFL, IRGC, Artesh

Conclusion

The third and final Iran-focused chapter of this report has examined Tehran’s pattern-breaking behavior of conducting long-range strikes against its state rivals from 2019 to 2023. In so doing, it has identified changes and consistencies in Iran’s pattern of policies and actions relating to the acquisition, threat, and use of strategic weapons. On one hand, and as summarized in Table 6 above, it has found that Iran has largely continued to build upon origins and foundations in this area that were established during the Iran-Iraq War and cemented over subsequent decades. On the other, however, it determines that, in the attacks that constituted the pattern break on which this chapter is focused, Iran attempted to use its strategic weapons to demonstrate its resolve and capabilities and to highlight and exploit the vulnerabilities of its adversaries in new ways. More specifically, this chapter has shown that, in its pre-and post-break pattern of strategic weapons acquisition, threat,

²³⁴ Michael Elleman, “Iran’s Ballistic Missile Program,” The Iran Primer, United States Institute of Peace, January 13, 2021, <https://iranprimer.usip.org/resource/irans-ballistic-missile-program>; Matthew Karnitschnig, “Iran in secret talks with China, Russia to acquire sanctioned missile fuel,” *Politico*, April 12, 2023, <https://www.politico.eu/article/vladimir-putin-ukraine-war-xi-jinping-china-russia-in-secret-talks-to-supply-iran-missile-propellant/>; U.S. Department of the Treasury, “Treasury Sanctions Suppliers of Iranian UAVs Used to Target Ukraine’s Civilian Infrastructure,” January 6, 2023, <https://home.treasury.gov/news/press-releases/jy1182>; U.S. Department of State, “Guidance to Industry on Iran’s UAV-Related Activities,” June 9, 2023, <https://www.state.gov/guidance-to-industry-on-irans-uav-related-activities/>.

and use, Iran continued to place a high priority on acquiring increasingly capable missiles and UAVs; to focus on retaliatory deterrence and asymmetric warfare; to increase its emphasis on offensive elements of military strategy; and to step up its reliance on its Axis of Resistance partners for deterrence and defense. Together, these findings show that—four decades after the establishment of the Islamic Republic of Iran, and after starting from scratch with strategic weapons—Tehran in 2023 appears to be more confident, more hostile, and more capable than ever before.

CHAPTER NINE

Identifying and Assessing Iran’s Patterns, Drivers, and Constraints Across Cases

Jim Lamson

Introduction

What do Iran’s statements, policies, and actions—examined in the three previous chapters—indicate about its patterns for acquiring, threatening, and using strategic weapons and the drivers and constraints that shape them? Answering this question is neither a simple nor a straightforward task. In general (as depicted below in Figure 1), an adversary can reveal—intentionally or otherwise—its patterns, drivers, and constraints in a number of different ways. These include direct communications, such as government-to-government or military-to-military channels; through indirect communications, such as through a mediator or third party, an international organization like the UN, Track 2 discussions, or engagement with its scientists;¹ or “from afar,” through its statements, policies, and actions. Additionally, observers can try to enhance their understanding of an adversary’s patterns, drivers, and constraints with information gleaned from external sources, such as government or intelligence reports. They can also derive important insights from unofficial sources, including outside experts and “inside-out” experts, who are former political, military, or weapons officials who served as advisors or are otherwise affiliated with the government or military.²

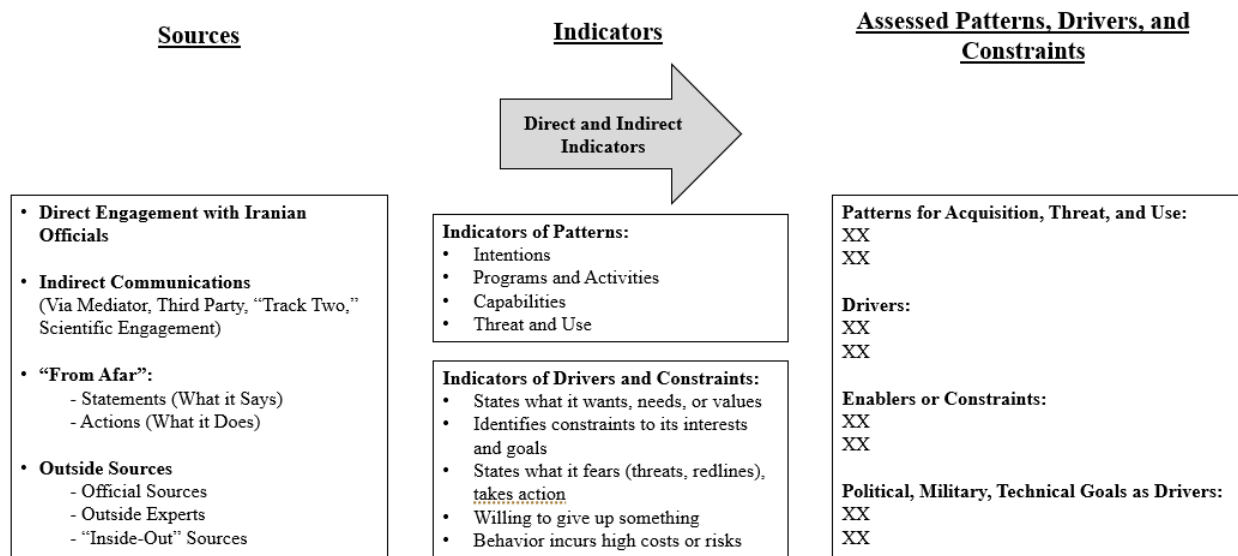
In the three Iran cases, the bulk of our understanding of Iran’s patterns, drivers, and constraints was derived “from afar”—that is, from Iran’s statements, policies, and actions—and from outside sources, especially foreign governments, international governmental organizations, and experts. In limited exceptions, we could derive some insights from direct Iranian communications, such as from the elements included in Iran’s “grand bargain” proposal to the United States in 2003. In that instance, Iran’s reported positions and proposals occurred in a time of perceived severe threat and crisis, so they provide useful (albeit limited) reflections at the time of what Tehran truly wanted, needed, valued, and feared as well as what it was willing to give up. But assessing Iran’s patterns, drivers, and constraints is an inherently difficult task, as described by Kenneth Pollack and Ray Takeyh:

¹ Official state-to-state engagement is typically known as “track one,” while “track two” engagement entails the unofficial, informal engagement by non-governmental experts. Also, some have defined “track one and a half” as engagement that both government officials and non-government officials. (Jennifer Staats, Johnny Walsh, and Rosarie Tucci, “A Primer on Multi-track Diplomacy: How Does it Work?” United States Institute of Peace, July 31, 2019, <https://www.usip.org/publications/2019/07/primer-multi-track-diplomacy-how-does-it-work>; Jeffrey Mapendere, “Track One and Half Diplomacy and the Complementarity of Tracks,” *Culture of Peace Online Journal*, Vol. 2, No. 1 (2006), pp. 67-69.)

² For Iran, limited examples of such “inside-out” experts include Seyed Hossein Mousavian, Mohsen Sazegara, Reza Kahlili, Seyed Mohammad Marandi, Gheis Ghoreishi, and Hossein Dalirian.

Iran is a land that revels in ambiguity, opacity, and complexity. Its regime has taken those traits to their illogical extreme, making it exceptionally difficult for outsiders to perceive Iranian motives and intentions clearly—especially in real time. Consequently, the best that outside observers can do is guess at Tehran’s motives, and they should be duly humble given our incomplete understanding of Iran’s politics or the policies which emerge from them.³

Figure 1: Identifying and Assessing Iranian Patterns, Drivers, and Constraints



Because of this “ambiguity, opacity, and complexity,” observers must rely on various direct and indirect indicators derived from various types of sources to identify Iran’s patterns for the acquisition, threat, and use of strategic weapons (see Figure 1 above). These include, in particular, indications from Iran’s statements, policies, and actions relating to its intentions, programs and activities, and capabilities in the area of strategic weapons, as well as insights from its military strategy for how it employs these weapons for the purposes of deterrence, compellence, or actual use. The preceding three chapters relied where possible on Persian-language primary and secondary sources, along with other sources, to glean these insights. These sources must be approached cautiously, however given that—as two prominent scholars have noted—Iranian official statements “are minefields where truth and myth are often intertwined.” However, they also note that such statements also “illustrate Iran’s views of key events and of itself. They therefore provide much-needed context and insight into Tehran’s strategic outlook.” They add, “when assessing these sources, scholars must exercise prudence and judgement, contrasting official accounts of specific events with other primary and secondary sources.”⁴ This is indeed the approach we attempted here.

The preceding three chapters also relied on the sources above to provide direct and indirect indicators of the drivers and constraints behind Iran’s acquisition, threat, and use of strategic weapons (see Figure 1 above). First, Tehran can convey something as a key value, goal, or otherwise something it truly wants, needs, or values. Examples include stated national interests, strategic goals,

³ Kenneth M. Pollack and Ray Takeyh, “Doubling Down on Iran,” *Washington Quarterly*, Vol. 34, No. 4 (2011), p. 9.

⁴ Ariane Tabatabai and Annie Tracy Samuel, “Avoiding the Translation Trap,” *The Iran Nuclear Deal: Commentary and Context*, Wilson Center, September 25, 2017, <https://www.wilsoncenter.org/blog-post/avoiding-the-translation-trap>.

or negotiating demands. Second, Iran can highlight important constraints to its interests or goals. This can include its own technical weaknesses or vulnerabilities as well as foreign embargoes, sanctions, export controls, or pressure. Third, Iran can highlight what it fears—that is, what it views as threats to its vital interests or goals. For instance, Iranian officials may highlight “redlines” that should not be crossed or identify important interests or goals that Tehran views as threatened, such as its system of governance or regional ambitions. Also, when Iran takes action, including military action, in response to perceived crossed redlines or threats, this can further validate the existence of such drivers. Fourth, if Iran is willing to give up something—for example, through negotiations—this may suggest something that it does *not* truly want or value. Finally, if Iran, through its behavior, is willing to incur significant costs or risks—whether political, diplomatic, military, or economic—this also may suggest underlying drivers.⁵

Despite the value of these sources for identifying drivers and constraints behind Iran’s pursuit of strategic weapons, however, researchers ultimately have to rely on “analytic leaps” of inference. These leaps are necessary to cross the gap between, on the one hand, the more concrete indications of Iran’s statements, policies, and actions and, on the other hand, what they assess to be the factors that are shaping them as well as their relative importance. This process can be a highly uncertain and qualitative endeavor.

Key Elements of Iran’s Patterns of Acquisition, Threat, and Use of Strategic Weapons⁶

As highlighted in the preceding three chapters, the Islamic Republic of Iran had no pattern for the acquisition, threat, and use of strategic weapons at the start of the Iran-Iraq War. That conflict, and Iran’s responses to its various elements, served to establish the origins and the strategic, technical, and organizational foundations—the new “baseline”—of its strategic weapons acquisition, threat, and use in the decades that followed. By the 1990s-2000s, Iran was focused on retaliatory deterrence and asymmetric strategies, as well as on acquiring the critical capabilities to support them. By the time it entered the 2010s, meanwhile, it had become more focused on offensive strategy and capabilities and was increasingly reliant upon on its “Axis of Resistance” partners for deterrence and defense. As a result of this evolution over the past four-plus decades, Iran in 2023 is more confident, more hostile, and more capable than ever.

Acquisition

As the preceding three chapters reveal, important elements of Iran’s pattern for the acquisition of strategic weapons over time have included:

- Acquiring strategic weapons in response to actions and perceived threats from its adversaries;

⁵ This is a point made by Zachary Shore in *Sense of the Enemy*, Kindle edition, location 3267; H-Diplo Roundtable on A Sense of the Enemy: The High-Stakes History of Reading Your Rival’s Mind, Volume XIX, No. 20 (2018), January 29, 2018, <https://networks.h-net.org/node/28443/discussions/1298592/h-diplo-roundtable-xix-20-sense-enemy-high-stakes-history-reading>; author’s discussion with Zachary Shore, November 8, 2022.

⁶ We define Iran’s strategic weapons “patterns” as its intentions, programs and activities, capabilities, threat of use, and use of strategic weapons.

- Pursuing multiple, parallel pathways for acquisition, in terms of using both foreign purchase⁷ and domestic development pathways⁸ as well as implementing multiple programs across multiple organizations;
- Developing not just single systems but “families” of increasingly capable systems, including ballistic missiles, long-range artillery rockets, cruise missiles, and UAVs;
- Maximizing self-sufficiency and self-reliance—and minimizing reliance on foreign suppliers—both for individual weapons programs as well as the supporting defense industries and domestic supply chains;
- Relying on illicit foreign procurement for acquisition (components, materials, equipment) to skirt export controls, sanctions, and embargoes; and
- Pursuing a “hedging,” “threshold,” or “on-demand” strategy for nuclear weapons⁹ and possibly also for ICBMs and CBW—that is, reportedly maintaining the necessary technical capabilities to produce such weapons if Tehran decides to do so.

Threat and Use

As these chapters also suggest, important elements of Iran’s pattern for the threat and use of strategic weapons include:

- Relying on retaliatory deterrence as a central element of its military strategy, including actual retaliatory operations in addition to verbal threats;
- Emphasizing an asymmetric strategy for both deterrence and defense;
- Conveying ambiguous threats, both in terms of its unclear stated triggers and “redlines” for when it would use strategic weapons as well as regarding what targets it would strike;
- Using both overt and covert—or at least semi-deniable—employment of strategic weapons;
- Increasing the role and importance of long-range conventional strike weapons for both deterrence and defense, including ballistic missiles, long-range artillery rockets, cruise missiles, and UAVs; and
- Increasing the emphasis on offensive elements of military strategy, including Iran’s “active” and “offensive” deterrence concepts and the strategic principle of “threat against threat.”

Iran’s Drivers and Constraints

The three preceding chapters also were helpful in identifying drivers and constraints that shaped Iran’s pattern relating to the acquisition, threat, and use of strategic weapons. These can be divided into higher-level drivers, many of which are “enduring” through the decades, and key factors that act as enablers or constraints. Also important are lower-level goals that flow from these drivers and enablers/constraints. These goals constitute their own set of drivers, which then shape Iran’s acquisition, threat, and use of strategic weapons.

⁷ For foreign purchase, Iran has pursued both the purchase of complete weapon systems as well as the transfer of production technology to enable Iran to domestically produce the systems.

⁸ For domestic development, Iran has pursued multiple pathways, including reverse engineering, improvement of existing systems, and its own design and development of new systems. For reverse engineering, Iran has applied this approach to systems (or key subsystems) that it purchased from states, illicitly procured, or recovered.

⁹ In addition to its reported dedicated nuclear weapons program from the late 1990s to 2003 under the AMAD Plan.

As discussed below, the key drivers, enablers and constraints, and lower-level goals that shape Iran's approach to strategic weapons are largely political, military, and/or technical in nature. Whereas the first case (Iran-Iraq War) in large part served as a useful initial baseline to identify and assess these factors, the second and third cases helped to show when they continued or evolved, or if new drivers or constraints emerged. In other words, as Iran faced its postwar strategic environment, this initial set of drivers and constraints—and key lower-level goals that flowed from them—provided a valuable baseline for assessing Iran into the following decades, as these factors continued to shape Iran's approach to its acquisition, threat, and use of strategic weapons.

Of note is the fact that the three Iran cases took place in very different international contexts. These contexts can be defined in line with the distinctions IRGC official Gholam Ali Rashid drew in 2010. According to Rashid, countries exist in conditions of either peace (*solb*), threat (*tabdid*), crisis (*bohran*), or war (*jang*).¹⁰ While the first case (Iran-Iraq War) took place in time of war, the second case (2001-2003) in a time of threat and crisis, and the third case (2019-2023) in a time of threat (including a limited crisis) for Iran, the set of drivers, enablers/constraints, and lower-level goals remained highly consistent over time.

*Drivers*¹¹

As outlined in the three cases and consistent with the literature on Iranian military and weapons issues, the following drivers appear to have been key to shaping Iran's acquisition, threat, and use of strategic weapons.¹²

External Threat Perceptions (political-military driver): In all three cases, external threat perceptions were a dominant and enduring driver overall in shaping Iran's acquisition, threat, and use of strategic weapons. Iran's external threat perceptions constitute an important, over-arching driver, both in terms of how they threaten the key Iranian drivers and lower-level goals below and also how Iran has relied on the acquisition, threat, and use of strategic weapons to deal with these threats. The main source of these perceived threats was states—Iraq, the United States, Israel, and later Saudi Arabia. To a lesser extent, Iran also perceived lower-level threats from non-state actors including the MeK, Iraq-based Kurdish groups, and ISIL. Iranian officials regularly refer to the threats emanating from these state and non-state actors as “hard” (*sakht*), “semi-hard” (*nimeh-sakht*), or “soft” (*narm*), where hard threats involve full-scale or limited war; semi-hard threats include short-of-war actions such as assassinations, sabotage, terrorism, sanctions and economic warfare, and limited military strikes; and soft threats include propaganda and psychological warfare. Officials also refer to threats as “hybrid” (*tarkibi*) if they combine two or more of the categories above.¹³

¹⁰ “sardar Rashid: Amrika dochar-e khata-ye estratezhik-e eghdam-e nezami alayeh Iran nakhahad shod” [general Rashid: America will not make the strategic mistake of military action against Iran], *Mehr News*, 27 Shahrivar 1389 [September 18, 2010], <https://www.mehrnews.com/news/1153438/>.

¹¹ We define “drivers” as factors that push or enable a state to acquire, threaten to use, and/or use strategic weapons. Drivers can include factors in one of two general categories: 1. Motivations, motives, incentives, pressures, determinants, imperatives, and enablers; 2. Strategic goals, ambitions, interests, and stated “redlines.”

¹² Outside sources and experts on Iran have identified other drivers, but this section focuses on those that appear to have the strongest influence—direct or indirect—on Iran's acquisition, threat, and use of strategic weapons. Other drivers identified in the literature include Iran's distrust of foreign powers and international law and institutions as well as Iran's perceived historical grievances and victimization by foreign powers.

¹³ For example: Ali Mohammad Nayeji, “bar-rasi-e tatbighi-e tahdid-ha-ye se-ganeh-ye sakht, nimeh sakht va narm” [a comparative study of the three threats of hard, semi-hard, and soft], *Rabbord-e Defai* [defense strategy], fall 1389 [fall

Regime Survival (political-military driver): The vital interest of Iranian leaders in protecting the security and stability of the Islamic Republic of Iran’s “system” (*nezam*) of clerical rule was an enduring driver across all three cases. Indeed, according to longtime Iranian diplomat Seyed Hossein Mousavian, the “biggest concern” for Iran’s leaders is the “security of the *nezam*.”¹⁴ This driver is reflected in Iranian statements and documents regarding the vital interest of defending the “system of the Islamic Republic” (*nezam-e jomhuri-e eslami*) and protecting the “Islamic revolution and its achievements” (*enghelab-e eslami va dastavard-ha-ye an*).

Iran’s Independence, Security, and Territorial Integrity (political-military driver): Another oft-cited driver reflected across the three cases is defending Iran’s independence (*esteghlal*), security (*amniyat*), and territorial integrity (*tamamiyat-e arz*).¹⁵ These are core missions of any country’s military, and they have been a particular focus of Iran’s since the 1980s. Indeed, Iranian officials have regularly highlighted Iranian security and territorial integrity as a “redline” (*khat-e ghermez*).¹⁶ Meanwhile, the defense of Iran’s independence and territorial integrity is captured in key Iranian official documents such as its five-year plans¹⁷ and the establishing laws of the IRGC and Artesh.¹⁸

Quest for Regional Power, Influence, and Reputation (political-military driver): Another enduring driver across the three cases is Iran’s longstanding goal of (re)establishing itself, and being recognized as, a dominant regional power for the purposes of deterring attack, defending its interests, and exerting influence. Indeed, Seyed Hossein Mousavian indicates that Iran historically and currently seeks to be “a regional power and respected as such, and this goal continues to drive its foreign policy.”¹⁹ Iranian official documents have also noted the country’s policy of becoming a regional power (*ghodrat-e mantegheb-i*) to ensure its national interests and security.²⁰ In 2017, the Iranian government’s policy program highlighted the efforts of Iran’s enemies to weaken its regional

2010], pp. 157-177; “jang-e tarkibi rahbord-e jadid-e doshman baraye moghabeleh ba nezam-e eslami” [hybrid warfare is a new strategy of the enemy for confronting the Islamic system], *Moj News*, 2 Shahrivar 1395 [August 23, 2016], <https://www.mojnews.com/n/XIG>.

¹⁴ Seyed Hossein Mousavian with Shahir ShahidSaless, *Iran and the United States: An Insider’s View on the Failed Past and the Road to Peace* (New York: Bloomsbury, 2014), Kindle edition, location 5454.

¹⁵ AFGS statement commemorating the 36th anniversary of the Iran-Iraq War, reported in “tadavom-e toolid-e samaneh-ha va tajhizat-e ‘defa-mehvar” [continuation of the production of ‘defense-oriented’ systems and equipment], *Dana Information Network*, 30 Shahrivar 1395 [September 20, 2016], <http://www.dana.ir/news/899790.html/share>.

¹⁶ For example: “sardar Hajizadeh: khat-e ghermez-e sepah amniyat-e mardom ast / tir-e Amrika va motahedan-esh be sang mikhord” [general Hajizadeh: the redline of the IRGC is the people’s security / the shot of America and its allies hits a stone], *Tasnim News*, 5 Tir 1398 [June 26, 2019], <https://www.tasnimnews.com/fa/news/1398/04/05/2041003/>.

¹⁷ “eblagh-e siyosat-ha-ye koli-e barnameh-ye panjom-e toseh” [statement of general policies of the fifth development plan], official website of the office of Supreme Leader Khamenei, 21 Dey 1387 [January 10, 2009], <https://farsi.khamenei.ir/news-content?id=5389>.

¹⁸ “asasnameh-ye sepah-e pasdaran-e enghelab-e eslami” [IRGC establishing law], 15 Shahrivar 1361 [September 6, 1982]; “ghanun-e artesh-e jomhuri-e eslami-e Iran” [law of the Artesh of the Islamic Republic of Iran], 7 Mehr 1366 [September 29, 1987].

¹⁹ Mousavian with ShahidSaless, *Iran and the United States*, Kindle edition, location 5264.

²⁰ “eblagh-e siyosat-ha-ye koli-e barnameh-ye sheshom-e toseh” [statement of general policies of the third development plan], Tir 1394 [June-July 2015], https://ui.ac.ir/Dorsapax/Data/Sub_56/File/%D8%B3%DB%8C%D8%A7%DB%8C%D8%AA_%D9%87%D8%A7%DB%8C_%DA%A9%D9%84%DB%8C_%D8%A8%D8%B1%D9%86%D8%A7%D9%85%D9%87_%D8%B4%D8%B4%D9%85.pdf.

power (*ghodrat*), influence (*nofuz*), and reputation (*etebar*) as a key threat to the country.²¹ Importantly, this driver is in large part about creating military power vis-à-vis Iran's adversaries. An oft-cited principle of Supreme Leader Khamenei is the importance of "confronting the savage enemy from a position of power" (*moghabeleh ba doshman-e vahshi az moze'-e ghodrat*),²² and Iranian military officials have indicated that any attempts to limit their country's military power are unacceptable to them.²³ Iran's emphasis on military power also involves creating an advantageous military balance (*mavazaneh-ye nezami*) or balance of power (*mavazaneh-ye ghova* or *tavazan-e ghova*) with its adversaries.

Strategic Isolation and Lack of Powerful Allies and Security Guarantees (political-military driver): Another enduring driver for Iran is its lack of powerful allies or membership in security alliances, and the resulting absence of security guarantees from states. This strategic isolation, combined with perceived threats from states, has resulted in the perceived need by Iranian leaders for self-reliance and self-sufficiency in its military strategy and weapons acquisition. These factors have also driven Iran to seek non-state allies as part of the Axis of Resistance for deterrence and defense.

Lead the Resistance Against Israel and the United States (political-military driver): Related to its external threat perceptions, ambition for regional status and influence, and its lack of powerful allies, Iranian leaders have aimed to lead the "resistance" (*moghavemat*) against Israel and the United States. This goal has included the longer-term Iranian aims of eliminating Israel as a political entity and expelling U.S. military forces from the region. Efforts to advance this goal have entailed leading and supporting the "Axis of Resistance" (*mehvar-e moghavemat*) or "Resistance Front" (*jebbeh-ye moghavemat*)—the network of state and non-state actors that Iran has supported and armed since the 1980s to support its strategic goals.²⁴ Iran has relied on its Axis of Resistance partners, including Syria, Lebanese Hezbollah, Iraqi militants, and the Yemeni Houthis as a key element of its deterrence and asymmetric strategies.

Iranian Nationalism and Culture of "Resistance" (political-military driver): Another important driver is the combination of Iranian nationalism and Iran's culture of "resistance" (*moghavemat*) against invasion, intervention, domination, and humiliation by foreign powers.²⁵ This strong mix of nationalism—including national honor or pride (*ezizat-e melli*)—and resistance culture has likely shaped Iran's acquisition, threat, and use of strategic weapons, as well as its national

²¹ "barnameh va khat-mashi-e dolat-e davazdahom" [program and policy of the twelfth administration], Office of the Iranian President, August 2017, <http://media.dolat.ir/uploads/org/150278587512971400.pdf>

²² "ghadrani-e vazir-e defa az tavajoh-e vizheh-ye rahbar-e moazam-e enghelab be tolidat-e defai" [appreciation of the defense minister for the supreme leader of the revolution's special attention to defense products], *Fars News*, 11 Mordad 1399 [August 1, 2020], <https://www.farsnews.ir/news/13990511000582/>.

²³ "farmandeh-ye arshad-e nezami-e artesh: eghtedar-e nezami va defai khat-e ghermez-e jomhuri-e eslami-e Iran ast" [senior artesh military commander: military and defense power is a redline of the Islamic republic of Iran], *Keyban*, 18 Farvardin 1395 [April 6, 2016], <http://kayhan.ir/fa/news/71697>.

²⁴ Kenneth M. Pollack, "The Evolution of the Revolution: The Changing Nature of Iran's Axis of Resistance," American Enterprise Institute, March 26, 2020, <https://www.aei.org/research-products/report/the-evolution-of-the-revolution-the-changing-nature-of-irans-axis-of-resistance/>; Brian Katz, "Axis Rising: Iran's Evolving Regional Strategy and Non-State Partnerships in the Middle East," Center for Strategic and International Studies, October 11, 2018, <https://www.csis.org/analysis/axis-rising-irans-evolving-regional-strategy-and-non-state-partnerships-middle-east>.

²⁵ W.A. Rivera, "The Strategic Culture of Resistance: Iranian Strategic Influence in Its Near Abroad," *Journal of Advanced Military Studies*, 2022, pp. 49-68; Michael Eisenstadt, "The Strategic Culture of the Islamic Republic of Iran: Religion, Expediency, and Soft Power in an Era of Disruptive Change," Middle East Studies, Marine Corps University, November 2015, pp. 22-23; Mousavian with ShahidSaless, *Iran and the United States*, Kindle edition, locations 1070, 3693-3697.

security and foreign policies more generally. According to Seyed Hossein Mousavian, the United States has failed to understand the importance of national pride/honor and Iran’s “traditional deep roots of resistance”—including to “bullying and outside force and pressure”—where Iranian “cost and benefit calculations and pragmatism fade in the face of coercion and a sense of humiliation.”²⁶

Increase Self-Sufficiency and Self-Reliance (political-military, technical driver): As highlighted in the three cases, an important enduring goal for Iran has been its pursuit of self-sufficiency (*kbod-kafai*) and self-reliance (*kbod-etekai*) in its military, weapons programs, and defense industries. This has been a driving force behind its efforts over the decades when it comes to (1) developing and producing its own families of strategic weapons—whether by relying on technology transfer, reverse engineering, or through its own domestic development; and (2) developing and producing its own technologies, components, and materials for weapons, including those related to key missile and UAV subsystems such as propulsion, guidance, and control. This emphasis on self-sufficiency is also reflected in Iran’s development and production in parallel—by both MODAFI and the IRGC—of key strategic weapons such as ballistic missiles, LACMs, and UAVs, with the likely aim of decreasing technical risks by having multiple developers and producers.

Conventional Military Weaknesses (military, technical driver): Across all three cases, the enduring weakness of Iran’s conventional military—its air force, air defenses, naval forces, and ground forces,²⁷ especially relative to the U.S. military and Iran’s regional rivals, helped to increase its reliance on deterrence and asymmetric strategies and capabilities for its security. In particular, the limits to the offensive capabilities of Iran’s air force pushed Iran to rely on missiles and UAVs for deterrence, retaliation, and warfighting.

Increased Power of Hardliners and the IRGC (political-military driver): Since the mid-2000s, as shown in the second and third cases, Tehran’s hardliners and the IRGC increased their power and influence in large part as a result of the U.S. invasion of Iraq and other U.S. policies and actions perceived as hostile to Iran, which “encouraged a revival of hardline power in Iran” and created a “boon” to the IRGC.²⁸ As noted elsewhere, this led to the rise of the IRGC as the “most important military-security organ capable of defending the country as well as the regime against external and internal threats.”²⁹ This increased power of the hardliners and the IRGC—combined with other drivers such as Iran’s enduring threat perceptions and increased strategic confidence—have probably helped shape Iran’s approach to strategic weapons in the last two decades. Especially significant in this regard is the increased importance of the IRGC in the deployment, threat, and use of strategic weapons as well as Iran’s growing emphasis on offensive elements of military strategy and capabilities.

Iran’s Stated Redlines as Reflection of Drivers (political-military, technical driver): As a reflection of its key drivers, Iranian officials have identified over the years various “redlines” (*kbhotut-e ghermez*) related to strategic weapons. These redlines have been articulated both in the form of deterrent threats to convey Iran’s thresholds or triggers for using military force and in negotiations as terms Iran is not willing to accept or issues it is not willing to discuss. What Iranian officials have

²⁶ Mousavian with ShahidSaless, *Iran and the United States*, Kindle edition, locations 1070, 2421, 5575.

²⁷ Ahmed Hashim, “Iran’s Military Situation,” in Patrick Clawson, ed., *Iran’s Strategic Intentions and Capabilities*, McNair Paper No. 29 (Washington, D.C.: National Defense University Press, 1994), pp. 178-199.

²⁸ Ostovar, *Vanguard of the Imam*, pp. 160, 169.

²⁹ Fathollah-Nejad, *Iran in an Emerging New World Order*, p. 260.

identified as Tehran's redlines in both of these contexts can act as useful indications of what they see as Iran's vital interests (*manafe-e hayati*). They can also highlight or validate the importance of other drivers identified in this study.

With respect to triggers for Iranian military action, officials have identified redlines related to the security of the "system" (*amniyat-e nezam*) and Iran's system of Islamic governance (*velayat-e faghib*) (guardianship of the Islamic jurist—*velayat-e faghib*)³⁰; national security (*amniyat-e melli*)³¹; security of the people³²; territorial integrity (*tamamiyat-e arzi*), borders (*marz-ha*), and airspace (*harim-e havai*)³³; national interests (*manafe-e melli*)³⁴; various types of attack (*tajavoz*) against Iran³⁵; cyber attacks that cause material damage against Iran's vital infrastructure³⁶; the security of the Persian Gulf and Strait of Hormuz³⁷; and any mistake (*khata* or *eshtebah*), miscalculation (*khata dar mohasebat*), or stupidity (*hamaghat*) by Iran's adversaries.³⁸ Most of Iran's stated redlines about the use of force are ambiguous—perhaps intentionally so—in two key respects which, according to Glenn Snyder, make

³⁰ "farmandeh-ye mantegheh-ye padafand-e havai-e shomal: amniyat va aramesh-e mardom-e Iran khat-e ghermez-e niru-ha-ye mosalah ast" [commander of north air defense region: security and peace of Iran's people is a redline of the armed forces], *Mebr News*, 19 Aban 1399 [November 9, 2020], <https://www.mehrnews.com/news/5067546/>; "khat-e ghermez-e nezam va enghelab, amniyat va velayat-e faghib ast" [redline of the system and revolution is security and guardianship of the jurist], *Islamic Republic News Agency (IRNA)*, 22 Azar 1398 [December 13, 2019], <https://www.irna.ir/news/83592485/>.

³¹ "sarlashkar Bagheri: amniyat-e keshvar khat-e ghermez ast / tajhizat-e novin-e havai dar hal-e pishraft ast" [general Bagheri: security of the country is a redline / modern aviation equipment is advancing], *Mebr News*, 17 Mehr 1397 [October 9, 2018], <https://www.mehrnews.com/news/4425614/>.

³² "sardar Hajizadeh: khat-e ghermez-e sepah amniyat-e mardom ast / tir-e Amrika va motehedan-esh be sang mikhord" [general Hajizadeh: redline of IRGC is security of the people / the shot of America and its allies hit a stone], *Tasnim News*, 5 Tir 1398 [June 26, 2019], <https://www.tasnimnews.com/fa/news/1398/04/05/2041003/>.

³³ "sardar Hajizadeh: khat-e ghermez-e sepah amniyat-e mardom ast / tir-e Amrika va motehedan-esh be sang mikhord" [general Hajizadeh: redline of IRGC is security of the people / the shot of America and its allies hit a stone], *Tasnim News*, 5 Tir 1398 [June 26, 2019], <https://www.tasnimnews.com/fa/news/1398/04/05/2041003/>; "Shamkhani: tajavoz-e havai be marz-ha-ye Iran khat-e ghermez-e mast" [Shamkhani: air attack against Iran's borders is our redline], *Tabnak News*, 30 Khordad 1398 [June 20, 2019], <https://www.tabnak.ir/fa/news/906759/>.

³⁴ "farmandeh-ye niru-ye zamini-e sepah: amniyat-e mardom va manafe-e melli khat-e ghermez-e Iran ast" [IRGC ground force commander: security of the people and national interests is Iran's redline], *Islamic Republic News Agency (IRNA)*, 4 Aban 1399 [October 25, 2020], <https://www.irna.ir/news/84087593/>.

³⁵ "janeshin-e vazir-e defa-e Iran: khat-e ghermez-e ma, tajavoz be marz-ha-ye keshvar ast" [Iran's deputy defense minister: our redline is attack on the country's borders], *Sputnik Iran*, June 27, 2019, <https://spnfa.ir/20190627/4909131.html>.

³⁶ "banyeh-ye setad-e kol-e niru-ha-ye mosalah: tahdidat-e sayberi ra ba ghodrat-e pasokh midehim" [statement by AFGS: we will respond with power to cyber threats], *Tasnim News*, 27 Mordad 1399 [August 17, 2020], <https://www.tasnimnews.com/fa/news/1399/05/27/2329302/>.

³⁷ "Khatibzadeh dar neshasteh-ye khabari: amniyat-e khaliy-e fars khat-e ghermez-e mast / vazir-e kharejeh-e Iraq be Tehran safar mikonad" [Khatibzadeh in news conference: security of the Persian Gulf is our redline / Iraqi foreign minister travels to Tehran], *Mebr News*, 18 Mordad 1400 [August 9, 2021], <https://www.mehrnews.com/news/5277072/>; "Strait of Hormuz is Iran's redline: Jahangiri," *Tebran Times*, August 12, 2019, <https://www.tehrantimes.com/news/439177/Strait-of-Hormuz-is-Iran-s-redline-Jahangiri>.

³⁸ "forupashi-e rezhim-e sehionisti dar dastur-e kar ast / khata konand Haifa va Tel Aviv ra mizanim" [the collapse of the Zionist regime is on the agenda / if they make a mistake, we will strike Haifa and Tel Aviv], *Fars News*, 8 Bahman 1399 [January 27, 2021], <https://www.farsnews.ir/news/13991108000882/>; "khat va neshan-e Iran baraye Amrika va Israel" [Iran's signature for America and Israel], *Sputnik Iran*, February 24, 2021, <https://spnfa.ir/20210224/--7554332.html>; "hoshdar-e sarh-e moshaver-e farmandeh-ye kol-e sepah be Israel: kuchektarin khatai konid az haman Lebnan Tel Aviv ra ba khak yeksan mikonim / be farman-e rahbari, dasteman ruye masheh ast" [advisor of IRGC commander's explicit warning to Israel: make the slightest mistake, we will raze Tel Aviv to the ground from Lebanon / by the command of the leadership, our hand is on the trigger], *Khabar Online*, 18 Azar 1398 [December 9, 2019], <https://www.khabaronline.ir/news/1329520/>.

them useful for conveying deterrent threats: First, they do not define the specific “contingency or enemy move” that will trigger a military response, and second, they do not describe the specific “sanction or response” that will occur,³⁹ apart from typical ambiguous Iranian terms such as “severe response” (*pasokh-e sakht*).

With respect to diplomatic redlines, meanwhile, Iranian officials have identified the following issues, among others, as non-negotiable: Recognition of the legitimacy of the Islamic system (*nezam*) and recognition of Iran’s right to a regional role⁴⁰; Iran’s military and defense power⁴¹; Iran’s combat capability (*tavan-e razmi*)⁴²; Iran’s regional power (*ghodrat-e mantegheb-i*)⁴³; the IRGC⁴⁴; Iran’s nuclear program and capabilities; Iran’s missile and UAV programs and capabilities⁴⁵; and Iran’s defense industries.⁴⁶

*Enablers or Constraints*⁴⁷

In addition to the drivers outline above, the previous chapters point to three important factors which have served as either enablers or constraints—“tailwinds” or “headwinds”—to drive or limit Iran’s acquisition, threat, and use of strategic weapons.

Technical and Industrial Capabilities (technical factor): As noted in the first case, Iran in 1979 essentially started from scratch in the development and production of strategic weapons. After experiencing severe weaknesses in its technical and industrial base during the 1980s, and after working to improve its domestic defense industries, however, it was progressively able to rely on its emerging capabilities to develop and improve new weapons. Although Iran still experienced limits and weaknesses and continued to rely on certain foreign technologies, its capabilities, especially in the area of missiles and UAVs, have improved with every decade. This has included its increasing ability to produce ever-improving families of missiles, rockets, and UAVs and to enhance their

³⁹ Glenn H. Snyder, *Deterrence and Defense: Toward a Theory of National Security* (Princeton: Princeton University Press, 1961), p. 241.

⁴⁰ John H. Richardson, “The Secret History of the Impending War with Iran That the White House Doesn’t Want You to Know,” *Esquire*, October 18, 2007, <https://www.esquire.com/news-politics/a3574/iranbriefing1107/>.

⁴¹ “farmandeh-ye arshad-e nezami-e artesh: eghtedar-e nezami va defai khat-e ghermez-e jomhuri-e eslami-e Iran ast” [artesh senior military commander: military and defense power is a redline of the Islamic Republic of Iran], *Kayhan*, 18 Farvardin 1395 [April 6, 2016], <https://kayhan.ir/fa/news/71697/>.

⁴² “moaven-e amaliyati-e sepah: mansha-e amaliyat alaieh keshvar-eman ra dar har noghteh-i mored-e esabat gharar midehim” [IRGC deputy for operations: we will strike the source of the operation against our country at any point], *Islamic Republic News Agency (IRNA)*, 5 Mehr 1401 [September 27, 2022], <https://www.irna.ir/news/84898834/>.

⁴³ “moaven-e amaliyati-e sepah: mansha-e amaliyat alaieh keshvar-eman ra dar har noghteh-i mored-e esabat gharar midehim” [IRGC deputy for operations: we will strike the source of the operation against our country at any point], *Islamic Republic News Agency (IRNA)*, 5 Mehr 1401 [September 27, 2022], <https://www.irna.ir/news/84898834/>.

⁴⁴ “Amir-Abdollahian: Iran considers IRGC red line as country’s security protector,” *Mebr News*, May 12, 2023, <https://en.mehrnews.com/news/200631/Iran-considers-IRGC-red-line-as-country-s-security-protector>.

⁴⁵ “moaven-e amaliyati-e sepah: mansha-e amaliyat alaieh keshvar-eman ra dar har noghteh-i mored-e esabat gharar midehim” [IRGC deputy for operations: we will strike the source of the operation against our country at any point], *Islamic Republic News Agency (IRNA)*, 5 Mehr 1401 [September 27, 2022], <https://www.irna.ir/news/84898834/>.

⁴⁶ “Missile, defense industries Iran's redline in negotiations,” *Young Journalists Club*, August 19, 2014, <https://www.yjc.ir/en/news/4877/>.

⁴⁷ We define “enablers” as a type of driver that enables, facilitates, or supports a state’s acquisition, threat of use, and/or use of strategic weapons. In contrast, we define “constraints” as factors that limit or hinder a state’s acquisition, threat of use, and/or use of strategic weapons. These can include factors in one of two categories: 1. Disincentives; 2. Limitations or controls.

range, accuracy, and destructive power. Thus, over the decades, Iran has been increasingly able to convert what was a key technical weakness into an important enabler of its military strategy and weapons capabilities.

Access to Foreign Technology (technical factor): An important enduring enabler and constraint on Iran’s acquisition, threat, and use of strategic weapons since the 1980s has been Iran’s varied access to foreign technologies. In some cases, Iran’s access to foreign technology allowed it to acquire strategic weapons, including ballistic missiles and cruise missiles. In others, however, Iran’s access to foreign technology was limited both by foreign technology controls and a lack of suppliers. Technology control policies such as embargoes, sanctions, national and multilateral export controls,⁴⁸ and foreign pressure on Iran’s suppliers have served to limit Iran’s access to key foreign weapons and technologies. Iran has also been challenged by a lack of foreign suppliers—with the partial exceptions of North Korea, China, and Russia—willing to provide Iran with advanced weapons and technologies.

Iran’s Level of Strategic Confidence (political-military factor): Another important enabler and constraint on Iran’s acquisition, threat, and use of strategic weapons has been its level of strategic confidence, especially in terms of the nature and credibility of the threats it faces, its perceived capabilities to address them, and the perceived vulnerabilities of its adversaries.⁴⁹ As shown in the first two cases, when Iran’s strategic confidence was low, it was willing to accommodate, whereas when Iran’s confidence was high, as shown in the second and third cases, it was more willing to risk confrontation, including military conflict. As these insights suggest, strategic confidence has been an important factor in shaping Iran’s approach to strategic weapons. This is true both in terms of acquisition—for example, driving Iran to acquire strategic weapons for deterrence and defense—and in terms of their threat and use, including increasing offensive elements of military strategy and Iran’s willingness to conduct long-range strikes from Iranian territory.

*Political, Military, and Technical Goals as Drivers*⁵⁰

In the three Iran-focused pattern breaks examined in this report, the combination of higher-level drivers, enablers, and constraints outlined above motivated important lower-level political, military, and technical goals. These lower-level goals have served as key drivers themselves to shape Iran’s acquisition, threat, and use of strategic weapons. These goals can be viewed as “instrumental” drivers that support or operationalize the higher-level “intrinsic” drivers. In other words, these goals

⁴⁸ Multilateral export controls included the Nuclear Suppliers Group (NSG), Australia Group (AG), Missile Technology Control Regime (MTCR), and Wassenaar Arrangement (WA), that—collectively—limited exports of nuclear, CBW, missile, and conventional weapons-related technologies to Iran and other countries.

⁴⁹ For instance, a RAND report asserts that when Tehran’s “sense of strategic confidence” is high, like in the mid-to-late 2000s, it is less willing to negotiate or compromise. This is especially the case if Iran perceives “diminished U.S. credibility and maneuverability” or views the United States as “unable to present a credible threat” to the survival of the Iranian regime. (Jerrold D. Green, Frederic Wehrey, and Charles Wolf, Jr., *Understanding Iran* (Santa Monica: RAND Corporation, 2009), pp. x, xv, 9, 40.)

⁵⁰ One way to think about these lower level goals is as goals that are “nested” within, and support, the higher level drivers above. In other words, if the drivers represent what Iranian leaders truly want, value, or fear, then these lower-level goals relate to how Iran can protect, advance, or otherwise operationalize those drivers.

serve as “means to an end,” with the “ends” being the protection or achievement of Iran’s higher-level drivers such as regime survival, security of Iran’s territory, or regional power and influence.⁵¹

Maintain Readiness, Avoid Strategic Surprise, and Surprise the Enemy (political-military driver): A painful lesson Iran learned from the Iran-Iraq War was the critical importance of military readiness (*amadegi*) to avoid strategic surprise and to strengthen both deterrence and defense. According to IRGC officials, the war drove home the need to increase Iran’s defense and deterrent power and its comprehensive readiness (*amadegi-ha-ye hameh-janebeh*) to prevent strategic surprise (*ghafelgiri-e rahbord*) against enemy threats.⁵² Correspondingly, in 1995, Supreme Leader Khamenei emphasized the importance of military readiness in both defense and deterrence, in terms of its role in “neutralizing aggression” by enemies and as a deterrent to prevent enemies from “entertaining thoughts of attacking Iran.”⁵³ Decades later, Iranian officials emphasized not only the need to avoid surprise but the importance of surprising the enemy. In 2014, for instance, defense minister Hossein Dehghan stated that Iran must act in a way that it is never surprised by technology or strategy, and to instead surprise the enemy.⁵⁴ Subsequently, in a 2021 statement, MODAFL highlighted its approach of both preventing surprise and focusing on surprising the enemy.⁵⁵

Strengthen Strategic Deterrence (political-military, technical driver): Iranian leaders also learned from the Iran-Iraq War that they needed to establish effective deterrence power (*ghodrat-e bazdarandegi*) against invasion or attack and to ensure Iran had the capability to respond in kind. According to one IRGC expert, the Iran-Iraq War showed that Iran lacked both pre-war deterrence—in the failure to deter Iraq’s initial invasion—and also intra-war deterrence to prevent the escalation of Iraqi actions during the war.⁵⁶ As seen in the three preceding chapters, in the decades since, deterrence has played a central role in Iran’s military strategy and has acted as a critical driver for its acquisition of strategic weapons.

Strengthen Asymmetric Capabilities (political-military, technical driver): As noted in all three cases, since the 1980s Iranian leaders and military organizations have emphasized the importance of

⁵¹ As just one example, Iran’s goal of strengthening strategic deterrence can be seen not as an end in itself, but as a means to addressing external threat perceptions or defending the survival of the regime or Iran’s independence, security, and territorial integrity.

⁵² IRGC official Gholam Ali Rashid, in Mohammad Dorudian, *Naghbi Bar Dars-ha va Dastavard-ha-ye Jang: Goftegu ba Farmandeban va Masulan-e Jang* [going through war lessons and achievements: discussions with war commanders and officials] (Tehran: IRGC markaz-e asnad va tahghighat-e defa-e moghadas [IRGC center of documents and research of holy defense], 1401 [March 2021-March 2022]), p. 127; IRGC statement commemorating the 38th anniversary of the Iran-Iraq War, reported in “sepah-e pasdaran: doshman dar mohasebat-e khod nesbat be mardom-e Iran hamchenan-e dochar-e khata-ye rahbord ast” [IRGC: the enemy still has a strategic error in his calculations towards the people of Iran], *Iranian Students’ News Agency (ISNA)*, 3 Mehr 1397 [September 25, 2018], isna.ir/xd3wy.

⁵³ “Radio on Reasons for Readiness of Armed Forces,” Tehran Voice of the Islamic Republic of Iran First Program Network, April 20, 1995, FBIS-NES-95-077, April 21, 1995.

⁵⁴ “sardar Dehghan: pasokh-e Iran be har tajavozi kubandeh khahad bud / bord-e mushak-e kruz-e ghadir 2 barabar khahad shod” [general Dehghan: Iran’s response to any aggression will be crushing / the range of ghadir cruise missile will be doubled], *Mehr News*, 3 Shahrivar 1393 [August 25, 2014], <https://www.mehrnews.com/news/2356873/>.

⁵⁵ “ghodrat-afzai bartar-saz-e defai rahbord-e ghati-e sanaye defai va niru-ha-ye mosalah ast” [increasing the power of defense superiority is the definitive strategy of defense industries and armed forces], *Fars News*, 30 Mordad 1400 [August 21, 2021], <https://www.farsnews.ir/news/14000530000162/>.

⁵⁶ Mohammad Hossein Ghanbari Jahromi, “farayand-e tarahi-e rahnameh-ye bazdarandegi-e hameh-janebeh-ye J. I. Iran dar cheshm-andaz-e bist-saleh-ye keshvar” [the process of designing comprehensive deterrence doctrine of the Islamic Republic of Iran in the country’s twenty-year vision], *Rahbord-e Defai* [defense strategy], Vol. 13, No. 2, Tir 1394 [June-July 2015], pp. 20-21.

creating and improving the country's asymmetric capabilities, both to deter and fight against superior adversaries. Iran's asymmetric military strategy has thus acted as a key driver to shape Iran's procurement, development, and production of strategic weapons and also to influence its approach to their threat and use.

Convert Threats and Challenges into Opportunities (military, technical driver): Across all three cases, and especially since the 2000s, Iranian officials have stressed the importance of converting threats and challenges into opportunities.⁵⁷ This strategic principle has been guided by Supreme Leader Khamenei's statement that "we can turn every threat into an opportunity" (*mitavanim az har tahdidi yek forsati besazim*).⁵⁸ This objective has informed several aspects of military strategy and weapons acquisition. First, Iranian officials have stated that the threats to the Islamic Republic in its early years provided it with the opportunity to decrease its military weaknesses.⁵⁹ Second, they have claimed that Iran's lack of alliances—an important driver noted above—spurred it to develop regional influence (*nofuz-e mantegheb-i*) to support its military power to create fear in its enemies.⁶⁰ Third, they have highlighted the importance of transforming the threat of U.S. forces and bases in the region into vulnerable targets for Iran's increasing long-range strike capabilities. Fourth, they have emphasized how Iran since the 1980s has been able to convert the challenge of foreign sanctions and pressure limiting its access to technologies into an opportunity to increase its domestic capabilities and self-sufficiency in developing weapons and its defense industries. Lastly, Iran has converted the threat of U.S. and Israeli weapons deployed against Iran into an opportunity by obtaining and exploiting those technologies—including captured U.S. and Israeli UAVs—to develop Iranian weapons based on them. Thus, over the years, according to Iranian officials, the country has been able to convert various threats and challenges into opportunities to improve its military strategy and weapons capabilities.

Avoid Full-Scale War with the United States and Israel (political-military driver): As an important strategic goal shaped by the various drivers and constraints above, Iran has sought to avoid a direct, full-scale military conflict with the United States and Israel. Iranian leaders recognize U.S. and Israeli military superiority and have thus focused on deterring large-scale U.S. or Israeli military attacks and pursuing short-of-war actions, including limited long-range strikes, to confront perceived threats from state actors.

Hedge With Nuclear, Missile, and Possibly Chemical and Biological Technologies (political-military, technical driver): Iran appears to be pursuing a hedging strategy in its development of nuclear and missile technologies, and possibly also with chemical and biological technologies. This hedging strategy is probably intended to create leverage and influence diplomacy and also possibly to deter the United States and regional rivals. For instance, Iran is suspected of

⁵⁷ As stated by Supreme Leader Khamenei, and regularly referenced by Iranian officials: "Transformation of threat into opportunity" (*tabdil-e tahdid be forsat*). ("tabdil-e tahdid be forsat" [transformation of threat to opportunity], official website of the office of Supreme Leader Khamenei, undated, <https://farsi.khamenei.ir/newspart-index?tid=5136>.)

⁵⁸ "bayanat dar haram-e motahar-e Razavi" [statements in the holy shrine of Razavi], official website of Supreme Leader Khamenei, 1 Farvardin 1392 [March 21, 2013], <https://farsi.khamenei.ir/speech-content?id=22233>.

⁵⁹ "Rezai: tahkim-e rabateh-ye mardom ba nezam-e eslami yek zarurat ast" [Rezai: consolidation of the people's relationship with the Islamic system is a necessity], *Zaman Daily*, 3 Khordad 1395 [May 23, 2016], p. 3, <http://archive.zamandaily.ir/attachments/article/626/3244.pdf>.

⁶⁰ "sarlashkar Rashid: ma ra az jang natarsanid baraye har vaziyati amadeh-im" [general Rashid: you don't scare us from war, we are ready for any situation], *Tasnim News*, 4 Khordad 1398 [May 25, 2019], <https://www.tasnimnews.com/fa/news/1398/03/04/2018742/>.

developing the key capabilities—related to fissile material, weapons design, and delivery systems—to enable it to produce missile-deliverable nuclear weapons if Tehran makes the decision to do so. With missile technology, both MODAFL and the IRGC are developing space launch vehicles (SLVs)—including those that use solid rocket motors—which would enable Iran’s development of ICBMs if Tehran decided to do so. In addition, the U.S. Government reports have raised suspicions that Tehran is pursuing a CBW hedge as well, by maintaining capabilities to enable its production of CW or BW if it decided it needed to do so.

Iran’s hedging strategy is also evident in activities it conducts in the track of the “battlefield” (*meidan*) that runs parallel to, and supports, the track of diplomacy or negotiations (*diplomasi/mozakerat*). Indeed, Iranian officials often refer to the importance of pursuing both a diplomatic track and a “battlefield” track in military and other national security matters to protect and advance the country’s interests. According to former foreign minister Mohammad Javad Zarif, for instance, it is important to effectively combine “battlefield” power and diplomacy and not rely solely on one or the other. Zarif argues that diplomacy and negotiations should be supported by battlefield power—including concrete achievements in military and nuclear capabilities—and conversely battlefield power without diplomacy will not achieve results.⁶¹

Demonstrate Resolve, Capabilities, and Adversary Vulnerabilities (political-military driver): In their statements and actions—including military exercises and actual strikes—Iranian leaders have attempted to demonstrate Iran’s resolve and capabilities, as well as the vulnerabilities of its adversaries. Statements of Iranian officials regularly emphasize Iran’s resolve to use military force, its increasing military capabilities, and vulnerability of Iran’s adversaries, especially Israel and the United States, to Iranian attack.

Defeat Regional Air and Missile Defenses (military, technical driver): Iran has increased its reliance on long-range strike, using missiles and UAVs to demonstrate its resolve, capabilities, and adversary vulnerabilities. As a result, the need to defeat ever-improving air and missile defenses in the region—by Israel, the United States, and U.S. allies and partners—has become an important driver for Iran’s military strategy and weapons programs. This has been reflected, for instance, in the stated importance Iran places on developing maneuverable missile warheads and anti-radar missiles and UAVs, launching large numbers and mixes of different missiles and UAVs, firing missiles and UAVs from multiple locations, and using varied routes to their targets.

Enable Low-Level, Tailored, and Deniable Long-Range Strikes with Precision (military, technical driver): With Iran’s improving missile and UAV capabilities and its ongoing threat perceptions vis-à-vis the United States and Israel, Iranian leaders have seen the importance of having the capability to conduct covert, deniable long-range strikes with precision at levels that will not trigger full-scale war. Conducting such low-level attacks can enable Iran to demonstrate its resolve, capabilities, and adversary vulnerabilities, while also allowing “tailoring” for multiple levels of escalation, from limited covert attacks, to limited overt attacks, to large-scale overt attacks if needed.

Protect and Advance Organizational Relevance and Resources (political-military driver): Another driver to which the Iran cases point is that of organizational interests. Indeed, since the

⁶¹ “siyasat-e khareji-e Iran az duran-e mozakereh mobtani bar ghodrat: mosahebeh ba doktor Mohammad Javad Zarif” [Iran’s foreign policy from the era of negotiation based on power: interview with doctor Mohammad Javad Zarif], *Siyasat-e Khareji* [foreign policy], winter 1397 [winter 2018-2019], pp. 5-26.

1980s, multiple organizations have been important to both Iran's acquisition as well as its threat and use of strategic weapons. For instance, multiple organizations under MODAFI, the IRGC, and Artesh have been involved in acquiring ballistic missiles, cruise missiles, and UAVs, and both the IRGC and Artesh—and multiple services under each—have been involved in deploying and using these weapons. Tehran's handing of such roles and responsibilities to multiple organizations may reflect top-level strategic leadership decisions to decrease technical risk, foster competition and innovation, and distribute capabilities widely throughout the forces. However, it may also reflect the interest of Iran's military and weapons developers in increasing their relevance—in terms of their importance in key roles and missions—and resources relating to capabilities, funding, and personnel.

Conclusion

The preceding three chapters show that Iran's patterns for the acquisition, threat, and use of strategic weapons originated in the 1980s from basically a "zero" baseline and continued to evolve over the following decades based on those early foundations. They indicate that Iran's emphasis on retaliatory deterrence and asymmetric strategies, efforts to acquire the necessary capabilities to support them, and focus on self-sufficiency all comprised core elements of these patterns. With regard to the forces shaping these patterns, the three cases, supplemented by other research, revealed no real surprises in terms of the higher level, enduring drivers identified by Iranian and Western sources and instead served to validate previous findings about Iran's key underlying drivers. Similarly, the cases supported conclusions about important technical enablers or constraints that have been presented in the existing literature. The results of this analysis did, however, help to shed new light on the importance of Iran's level of strategic confidence/vulnerability as both an enabler and a constraint and to specify several important political, military, and technical goals that themselves constitute drivers for shaping Iran's approach to strategic weapons. They also revealed a high degree of continuity with respect to drivers, enablers and constraints, and lower-level goals, showing that many of these forces had an enduring influence on Iran's acquisition, threat, and use of strategic weapons from the 1980s to the present.

CONCLUSIONS AND RECOMMENDATIONS

Sarah Bidgood and Jim Lamson

Introduction

This report has presented eight case studies focused on the acquisition, threat, and use of strategic weapons in Russia, North Korea, and Iran. Each has examined a different pattern break—either Category 1 (event) or Category 2 (behavior)—and what it indicates about the patterns and key drivers and constraints that shape decisions around strategic weapons in these adversary countries. A summary of findings revealed by this analysis, presented below, highlights a diverse range of policies and actions relating to the acquisition, threat, and use of strategic weapons in these states, as well as the diverse forces that influence them. Together, they speak to the utility of strategic empathy for deriving policy-relevant insights beyond those afforded by more traditional analytical approaches.

Russia

The first Russia case study in this report analyzed Moscow's response to the U.S. withdrawal from the Anti-ballistic Missile Treaty in 2001-2002. It sought specifically to understand whether or how this event had affected Russia's acquisition, threat, and use of long-range ballistic missiles and maneuverable nuclear-capable delivery systems. Although this pattern break occurred more than two decades ago, it continues to hold contemporary relevance because Russian officials, and especially President Vladimir Putin, often frame their pursuit of these strategic weapons as a reaction to the U.S. exit from the accord. With this in mind, a secondary question on which this case study focused was: to what degree is the Russian narrative about the impact of the U.S. withdrawal from ABM on its acquisition of strategic weapons borne out by empirical evidence? The results of this analysis showed that Russia's reliance upon its Cold War strategic arsenal for deterrence and escalation management increased prior to collapse of the ABM treaty amidst the financially austere environment that followed the breakup of the USSR. They also demonstrated that, in contrast with today, Putin's response to the U.S. exit from the treaty was initially low-key and prioritized reviving once promising but abandoned maneuverable delivery systems over expensive new innovation efforts. While Russia did initiate a limited modernization effort of its strategic capabilities shortly after Washington left the agreement, it was not until the mid-2000s—amidst growing frustration over what Russia viewed as the Bush administration's broader disregard for Moscow's security concerns—that it began to pursue so-called next-generation, MIRVed intercontinental ballistic missiles (ICBMs) capable of circumventing, evading, and overwhelming ballistic missile interceptors. On this basis, this case study concluded that Russia's acquisition of long-range ballistic missiles and maneuverable nuclear-capable delivery systems should be understood *not only* as a reaction to perceived threats resulting from the U.S. pursuit of ballistic missile defense *but also* to what Washington's withdrawal from the treaty appeared to signify about its attitude toward Moscow and the world.

The second Russia case study examined Moscow's combat use of long-range precision-guided missiles in the Syrian conflict between 2015-17. It showed that the pattern break was preceded by Russia's years-long quest to close the "precision gap" with the United States, reflected in efforts to

speed up the acquisition of long-range missiles. Russia's acquisition drive was rooted in its desire (1) to be able to wage a conventional war with NATO and limited conflict with other parties; (2) specifically, to strike aircraft carriers and land targets from sea (a particular interest of the Russian navy), and (3) to penetrate (theater) missile defenses. The chapter chronicled Russian and U.S. reactions to Russia's pattern-breaking employment of *Kalibr* cruise missiles and other long-range missiles in the Syrian campaign. It argued that the employment of the costly weapons—which added little for Russia operationally on the Syrian battlefield—was predominantly intended as a signal toward the United States and players in the Middle East and to display and test Russian capabilities for other military contingencies. The chapter concluded with a comparison of the drivers and constraints shaping Russia's acquisition and use of long-range precision-guided weapons before and after their first combat employment in Syria. It found that the most significant constraints related to both acquisition and use would not fully come to light until 2022, when Russia launched a full-scale invasion of Ukraine. In doing so, it hinted at some limitations in the practice of strategic empathy, showing that constraints regarding the use of strategic weaponry in one operational context need not be instructive for their use elsewhere, but can—in fact—lead to erroneous assessments and unrealistic expectations.

The third Russia case study examined Moscow's pattern-breaking acquisition and use of Iranian combat drones in the context of its full-scale invasion of Ukraine since February 2022. It situated the pattern break in the context of the evolution of Russia's indigenous UAV industry, as well as Russian efforts to procure stockpiles of precision-guided munitions (PGMs), prior to the Ukraine war. It showed that a combination of Russia's inability to mass-produce combat UAVs at low cost, the Russian air force's failure to achieve air superiority over Ukrainian skies, and Russian shortages in PGMs led to the pattern break—which came at a cost to Moscow in that it shifted bargaining power in the bilateral relationship with Iran to Russia's detriment. The chapter then chronicled Russian and U.S./Ukrainian reactions to Russia's pattern-breaking employment of the Shahed drones in the Ukraine campaign. It concluded by reflecting on the challenges in analyzing an ongoing pattern-break—and its implications for the practice of strategic empathy—in real time. Specifically, uncertainties regarding the “boundedness” of the pattern break (i.e., the question of how far Russian-Iranian military cooperation will develop) and the adaptability of Russia's defense industry to sanctions and export controls make firm predictions about Russia's future behavior regarding the acquisition, threat of use, and use of strategic weaponry difficult.

North Korea

The first North Korea case study examined North Korean leader Kim Il Sung's strategic decision in 1990 to normalize relations with the United States, and that decision's consequences for the North's nuclear weapons program. Seeking normalization with the United States was a major pattern break from Pyongyang's adversarial relations with Washington during the nearly four decades of the cold war following the Korean War armistice. After describing how events on the Korean Peninsula and the greater geopolitical changes wrought by the end of the cold war shaped Kim's decision, the case study examines how the fundamentally new approach toward the U.S. transformed North Korea's drivers for the acquisition of nuclear weapons from a nascent covert program into a dual-track strategy to pursue both diplomacy toward normalization with Washington and nuclear weapons development. That strategy led directly to the Clinton administration's 1994 Agreed Framework, which imposed serious constraints on the North's acquisition of nuclear weapons. Yet, Pyongyang kept the nuclear weapon option alive and exercised it to build and test the bomb after the Bush

administration shattered the framework. During the next two decades, both Kim Jong Il and Kim Jong Un followed the dual-track strategy, at times prioritizing one over the other, but never fully abandoning either.

The second North Korea case study, a follow on to the first, examined how for thirty years—from 1990 to 2020—Pyongyang stuck to the dual-track strategy of diplomacy and nuclear weapons development, seeking numerous times without success to achieve normalization of relations with the United States while apparently prepared to slow or even stop development of its nuclear program to achieve that goal. By contrast, after the Clinton administration, Washington stuck to the singular objective of denuclearizing North Korea. From 2001, each U.S. administration convinced itself that Pyongyang was not serious about diplomacy. As a result, Washington was never prepared to engage long enough and deep enough to prevent the North's buildup of a threatening nuclear arsenal. Soon after Kim Jong Un left the failed Hanoi summit with President Trump in February 2019 in shock and disappointed, Pyongyang began an extended period of policy reevaluation. It did not immediately abandon the core policy of attempting to normalize relations with the United States, but seemed slowly to conclude that the goal of using the United States as a buffer against China was no longer feasible. More importantly, from Pyongyang's standpoint, it no longer even seemed desirable given changes in the geopolitical landscape in northeast Asia and China's rise. In what was neither a feint nor an effort to gain "leverage" with Washington, Kim Jong Un moved cautiously toward a fundamental break with his previous policy. That process accelerated in the summer of 2021, and by January 2022, Pyongyang completed the transition from its dual-track strategy to developing fully as a state with nuclear weapons that was aligned with China and Russia.

Iran

The three case studies on Iran examined the following pattern breaks and their influence on Tehran's approach to strategic weapons over the years: (1) the Iran-Iraq War (1980-1988); (2) the threats and opportunities Iran faced in 2001-2003; and (3) Iran's long-range conventional strikes against its state adversaries from 2019-2023. Together, they found that Iran's policies and actions during these pattern breaks aimed to counter perceived threats, exploit opportunities, and convert threats into opportunities, shedding light on enduring themes, drivers, and constraints that have influenced Iran's strategic weapons approach over the past 40 years.

Among the specific findings derived from these cases was the fact that, after starting with a zero baseline for strategic weapons capabilities in 1980, the Islamic Republic of Iran implemented policies and actions over the decade that followed that established the origins and the strategic, technical, and organizational foundations for its future acquisition, threat, and use of strategic weapons. During this period and subsequently, Iran's acquisition of strategic weapons was driven by both perceived threats and opportunities: It responded to threats from adversaries by developing retaliatory deterrent and asymmetric capabilities, and in some cases, attempting to cooperate with or accommodate the United States. Tehran also exploited opportunities such as access to foreign technology, the perceived vulnerabilities of its adversaries, and its own technological achievements such as enhancements in range and accuracy that enabled a shift to increase the offensive elements of strategy.

In addition to its efforts at nuclear hedging—and a brief episode in which it had a dedicated nuclear weapons program—and suspected CBW-relevant work, these chapters showed that Iran has also

emphasized long-range conventional strike capabilities. These include, in particular, ballistic missiles, long-range artillery rockets, cruise missiles, and UAVs, all with increasing range and accuracy. They found that Tehran has pursued multiple pathways for the acquisition of these weapons, combining foreign purchases with domestic development to minimize the risk of failure. At the same time, they determined that Iran has focused on developing families of increasingly capable systems, aiming for self-sufficiency and self-reliance in both its weapon systems and defense industries.

Regarding the threat and use of strategic weapons—Iran’s military strategy—these chapters showed that Tehran has developed a retaliatory deterrence strategy to deter initial attacks, follow-on attacks, and escalation. This strategy relies on threatened and actual retaliation—both overt and deniable—depending on the scenario, as well as ambiguity, both with respect to the triggers and redlines for the use of strategic weapons and the intended targets. They also determined that Iran has emphasized an asymmetric strategy both for deterrence and warfighting. Since the 2010s, Iran has increased its focus on the offensive elements of military strategy and its reliance on the Axis of Resistance. With respect to the use of strategic weapons, they showed that Iran has demonstrated its willingness to take risks by employing long-range conventional strikes against non-state and state adversaries alike, both overtly and covertly. Overall, they determined that the role and importance of strategic conventional strike weapons to Iran’s national security and military strategy have increased, raising questions about whether Iran even needs nuclear weapons for deterrence.

As the Iran-focused chapters of this report concluded, several drivers and constraints have shaped Tehran’s acquisition, threat, and use of strategic weapons over time. Factors such as external threat perceptions, regime survival, independence, security, territorial integrity, the quest for regional power, and leading the “Axis of Resistance” have served as enduring, higher-level drivers. At the same time, however, they also found that lower-level goals including increasing strategic deterrence and asymmetric capabilities, demonstrating resolve, and exploiting adversary vulnerabilities have also pushed Tehran’s acquisition, threat, and use of strategic weapons. Access to foreign technology, Iranian technical capabilities, and Iran’s level of strategic confidence have served as both enablers and constraints over time.

These case studies underscored Iran’s willingness to accommodate—but not submit or surrender—in response to severe threats and pressure, as seen in 1988 and 2003. They also showed, however, that increases in Iran’s strategic confidence and capabilities, as well as the perceived vulnerabilities of its adversaries since the late 2010s have resulted in an Iran that is now more confident, more capable, and more hostile than ever before—a trend that is supported by the acknowledgment of Iranian capabilities by U.S. and Western officials. Overall, these cases highlighted the value of taking a broader view of “strategic weapons” when addressing Iran, especially since it does not possess nuclear weapons, unlike the cases of Russia and North Korea. They further underscored the importance of examining weapons acquisition in tandem with military strategy (threat and use of military force) to view how these elements shape each other.

Analysis

As demonstrated in the summaries above, the diversity of cases that this report examines is a “feature” and not a “bug.” This diversity can be seen in terms of:

- *Diversity of strategic weapon types addressed:* The cases include those that focus on nuclear weapons as well as those that include a broader scope of strategic weapons, including long-range conventional strike weapons;
- *Diversity in the scope of pattern breaks:* The pattern breaks include ones with a single element as well as ones with multiple, cumulative elements;
- *Diversity of time:* The timeframes of the cases range from the 1980s and 2000s to cases that are still occurring, but all are relevant to understanding the adversary today;
- *Diversity in research approach:* The Russia and Iran cases take more of a “scholarly” approach in contrast with the North Korea cases that rely on a valuable “experiential” approach;
- *Diversity of sources and perspectives:* Each case relies on a different mix of sources and perspectives that include direct or indirect engagement, “from afar,” and/or outside sources. For instance, the North Korea cases rely on the authors’ unique experiences and engagement with North Korean officials as a key source of insight; and
- *Diversity of strategic contexts:* While some cases focus on periods in which U.S.-adversary relations are characterized by peaceful competition, others take place during periods of heightened tension, crisis, or military conflict.

As this report reveals, by applying strategic empathy to a range of pattern breaking events or behaviors with these different characteristics, analysts can generate a valuable set of both smaller and larger insights on adversary patterns, drivers, and constraints. Together, these insights support a deeper and more holistic understanding of the adversary than could be derived from a single pattern break analysis or more homogeneous set of cases.

In the context of this study, this diversity of cases reveals both similarities and differences in the patterns of policies and actions that define Russian, North Korean, and Iranian acquisition, threat, and use of strategic weapons, as well as the drivers and constraints that shape them. The results may be useful for analysts and policymakers with a range of goals and priorities. For instance, the case study focused on the U.S. withdrawal from the ABM treaty finds that the impact of this event on Russian military innovation has been retroactively reassessed in Moscow, challenging the narrative that Russian policymakers have actively sought to promote with respect to the drivers behind its pursuit of new strategic weapons. The case studies on North Korea’s pursuit of nuclear weapons, meanwhile, point to past policy missteps on the part of the U.S. government which, if addressed, could have resulted in different, and more desirable, outcomes.

Another case in this report, namely that which focuses on Russia’s procurement and use of drones from Iran in its war against Ukraine, may even have predictive value for observers hoping to anticipate next steps in Russian military innovation. Indeed, by identifying the drivers and constraints that are prompting Russia to engage in this unprecedented behavior now, this case can form the basis for informed guesses about Russia’s acquisition and use of other strategic weapons in the future. What is more, these guesses can be further informed and shaped when combined with insights derived from other cases. For example, Pyongyang’s pivot toward Russia and China, described in the second of the two case studies on the DPRK’s pursuit of nuclear weapons, raises questions about whether Russia might seek to acquire strategic weapons—such as ballistic or cruise missiles—from Kim Jong Un as the war in Ukraine grinds on.

For their part, the Iran cases help to show the value of broadening the scope of “strategic weapons” beyond the traditional focus on nuclear weapons and ICBMs, especially for smaller U.S. adversaries. They point to important enduring themes in the patterns, drivers, and constraints in the past 40-plus years of Iran’s approach to the acquisition, threat, and use of strategic weapons. The cases also highlight the emergence of important themes in Iran’s policies and actions as they relate to these areas over the past decade. Finally, the cases show that after more than four decades of mostly coercive approaches by the United States and West toward Iran—interrupted by moments of accommodation—Tehran today is more confident, more capable, and more hostile than ever before in the area of strategic weapons.

Conclusions and Recommendations

Building upon these observations, the following section of this report presents a series of conclusions about the advantages strategic empathy affords both analysts and policymakers. It offers a series of tailored best practices that both of these communities can use to get the most out of this approach in line with their different objectives. In so doing, however, it also outlines potential challenges and pitfalls that scholars and practitioners may encounter in applying strategic empathy and recommendations to avoid them. It concludes by highlighting the connections between this work and conflict transformation and outlining avenues for further exploration.

Strategic Empathy for the Analyst: Understanding Adversary Acquisition, Threat, and Use of Strategic Weapons

Advantages

Although strategic empathy as we conceive of it—with our focus on pattern breaks—was developed by an historian, it offers a number of clear advantages for the policy-oriented nonproliferation analyst. Among the most significant of these is the fact that it enables those who use it to go beyond what they assume to be the most important drivers and constraints behind adversary acquisition, threat, and use of strategic weapons to understand what factors inform these decisions and behaviors in reality. In this regard, and as demonstrated by the case study on the U.S. withdrawal from the ABM treaty, strategic empathy can be used to test, validate, challenge, or refine the conventional wisdom about the influence of specific events, drivers, or constraints on the innovation and deployment of strategic weapons in adversary countries. For analysts in particular who may seek to generate findings that can inform the policymaking process, these insights are of paramount importance.

Another benefit strategic empathy affords the analyst is the ability to “speak the same language” as the adversary without necessarily agreeing with what is being said. Developing this fluency through the application of strategic empathy affords a deeper awareness of how the adversary uses specific terms, concepts, and frameworks relating to security and to the acquisition, threat, and use of strategic weapons. In so doing, strategic empathy helps analysts to avoid interpreting adversary statements, policies, and actions solely from U.S. or Western perspectives that may obscure their true significance. The results can help to reveal areas of shared interest, perceived threats, or unique vulnerabilities that can inform cooperative or coercive policy approaches.

In sum, the pattern break approach applied in the cases of this study—including its emphasis on including the adversaries’ perceptions and viewpoints of themselves, their enemies, and their security environments—offers a holistic way to better understand these adversaries while at the same time avoiding sympathy or agreement with them. As such, this approach can be used as a standalone method, but is best used as a complement to other approaches, including well-established theoretical frameworks, to gain a richer and more nuanced understanding of the adversaries’ acquisition, threat, and use of strategic weapons.

Challenges

Nevertheless, and despite these benefits, there are challenges to applying strategic empathy in practice that can limit its value or applicability as an effective analytical approach. For the analyst or scholar, these can be broadly divided into cognitive challenges, or challenges in understanding adversaries; cultural challenges, or challenges related to understanding the strategic culture of the adversary; and sourcing challenges, or challenges stemming from gaps, uncertainty, or ambiguity of information about adversaries and how they might respond to various policies.

More specifically, within these general categories, analysts may encounter the following stumbling blocks in applying strategic empathy in practice:

- **Selecting and categorizing the cases:** The authors of this study are nonproliferation specialists with deep regional expertise. They used this combination of competencies to select pattern breaks for analysis that represented either a shock to the adversary (Category 1) or a surprising change of behavior by the adversary (Category 2). And yet, even among the authors of this report, there was extended discussion over how to categorize some of the pattern breaks in question, including whether it was more useful to frame or structure the break as an event influencing the adversary or as a change in behavior exhibited by the adversary. Because the successful application of strategic empathy is, on some level, dependent upon choosing the right cases for analysis and distinguishing between Category 1 and Category 2 pattern breaks, it may be a less accessible or less useful approach for some analysts than for others.
- **Scoping cases appropriately:** Although strategic empathy as it is used in this report entails a focus on pattern breaks, it can be extremely difficult to, first, assign what element or elements constitute a pattern break and, second, to determine when a pattern break begins and ends. On the first point, some of the cases presented here focus on a discrete pattern break while others address a cumulative pattern break containing multiple elements. Indeed, while the Russia and North Korea cases examine very focused pattern breaks, the Iran cases include pattern breaks with multiple elements. On the second point, in many respects, two of the Russia case studies presented in this volume are a continuation of the same pattern break; this is also true of the cases focused on Iran and North Korea. Furthermore, because the kinds of grievances, beliefs, perceived threats, and patterns of thought that strategic empathy seeks to tease out develop over time, it can be difficult to identify changes and constants in what drives the acquisition, threat, and use of strategic weapons. These challenges become more pronounced when practicing strategic empathy toward autocracies or dictatorships, where many of the same elites remain in positions of power for long periods of time.

- **Assessing key drivers and constraints:** As even a casual observer could infer, a host of factors influence adversary decisions and actions around the acquisition, threat, and use of strategic weapons. As is well-established in the literature on military innovation and proliferation, these can include bureaucratic political considerations, security concerns, and perceptions of prestige and national pride, among numerous others. They can also include lower-level factors such as specific military and technical goals—in many cases driven by the considerations above—that shape military strategy and weapons programs. One challenge that strategic empathy presents is that it surfaces many other drivers—which may be overlapping or contradictory, or which may be more or less important to specific decisionmakers. While this is also its strength as an approach, analysts who use it may be hard pressed to strike a balance between over-simplification and “laundry listing” when it comes to determining which of these factors have the greatest influence. Relatedly, analysts may face difficulties in distinguishing between genuine drivers—what the adversary truly wants, values, and fears—and factors that are exaggerated or fabricated by the adversary to justify or excuse its policies and actions. These challenges can have implications both for accurate understanding of the adversary and also for crafting effective policies that focus on addressing the former and not being distracted by the latter.
- **Conducting research without contact with the adversary.** It is an irony of strategic empathy that some of the scenarios where it is most necessary are also those in which it is the most difficult to conduct. One major challenge facing analysts in this regard, then, is how to derive the kinds of empirical evidence necessary to apply strategic empathy when engagement with adversaries is severely limited. Indeed, as the case studies on North Korea presented here showcase, in-country visits and direct contact with informed individuals are often key to understanding the adversary’s policies and actions relating to its acquisition, threat, and use of strategic weapons, as well as the drivers and constraints that shape them. Absent these sources, analysts are often limited to interpreting an adversary’s official statements and actions or consulting outside official sources, outside experts, or individuals who were formerly on the inside and have since left.
- **Analyzing a pattern break as it unfolds.** As the case studies in this report demonstrate, it is very challenging to identify and analyze pattern breaks as they are unfolding, especially in the “fog of war.” Indeed, to take the example of Russia’s war in Ukraine and its purchase and use of Iranian drones, it is not yet clear whether this behavior will expand in scope—for example, to include ballistic missiles—or whether it will continue once this conflict ends.

Recommendations and Best Practices

While not all of these challenges have an easy solution, the experience of compiling this report points to a number of approaches analysts can employ in order to get better results from the use of strategic empathy. Among these are the following best practices:

- **Take time to establish the pattern.** Because it can be difficult to determine the key elements, start, and end of a pattern break, it is crucial that analysts take time at the outset to establish the pattern of an adversary’s acquisition, threat, and use of strategic weapons prior to the break in question. Somewhat counterintuitively, doing so may take more effort than

the subsequent analysis of what is driving and constraining adversary acquisition, threat, and use of strategic weapons in the aftermath. While establishing this baseline is painstaking and difficult work, it is necessary to understand on a nuanced level what changed and remained consistent across either a Category 1 or 2 pattern break. Particularly in the case of Category 2 behaviors, the results may reveal that what at first appeared to be a radical shift in behavior was, in fact, more or less consistent with the status quo ante, which is itself valuable information.

- **Employ multiple methodologies.** While strategic empathy can afford the analyst unique benefits, it can and should be used to complement other tools for understanding the adversary. Methodologically, and as showcased in the pattern break analyses presented in this report, this means applying diverse approaches from process-tracing to discourse analysis to comparative case study analysis. Conceptually, and as described in the introduction to this report, it may also entail cultivating what Nicholas Wheeler calls a security dilemma sensibility, or an understanding of what Ken Booth and others refer to as “strategic culture.”¹ Together, these approaches enhance the analyst’s ability to compare rhetoric and reality when it comes to understanding an adversary, and to assess its statements, policies, and actions in a way that yields deeper and more policy-relevant insights.
- **Employ multiple types of sources and perspectives to gain insights.** Relying on different types of sources and perspectives, when possible, will generate better insights about the adversary. These types of sources include: (1) Direct engagement with adversary officials, (2) Indirect engagement, including via mediators, Track 2 discussions, or scientific engagement; (3) The adversary’s statements, policies, and actions analyzed “from afar”; and (4) Outside sources such as official government reports, outside experts, and “inside-out” sources (former adversary officials or experts that have close links to adversary officials).
- **Seize available opportunities to conduct in-country visits.** While it is not always possible to visit adversary countries in person, the kinds of insights that can be derived from these experiences are invaluable for the practice of strategic empathy. These relate in particular to the culture and history of the country in question, as well as the current events, political dynamics, and economic issues that influence its decision-making at all levels. In the two case studies on North Korea presented here, for instance, the authors benefitted in particular from engagement with scientists and trips not just to sites designed for visitors, such as museums, but also to schools, factories, housing projects, and agricultural projects, among others. These kinds of experiences are especially important for moving beyond preconceived assumptions about drivers and constraints to a more nuanced understanding that is informed by empirical evidence.
- **Engage as frequently and extensively as possible with contacts from the country in question.** Analysts who are not in government do not necessarily have the same kinds of opportunities as government practitioners to engage with counterparts in adversary countries. Nevertheless, seizing these chances where they present themselves is important for applying strategic empathy effectively because direct engagement (1) affords insights into

¹ See for instance Kenneth Booth, “Strategic Culture: Validity and Validation,” *Oxford Journal on Good Governance*, Vol. 2, No. 27 (2005).

an adversary's perspectives and decision-making processes; (2) helps to minimize misunderstandings that can lead to conflict; and (3) contributes to “de-mystification” on both sides.² Particularly valuable for nongovernmental analysts in this regard are Track 1.5 or 2-level discussions and events, which may bring together officials, outside experts, and even “inside-out” sources—or those who were well placed in an adversary country but have since departed. Because these meetings and discussions can be held outside of the country in question and may be convened by national governments, international organizations, or NGOs, they are often more accessible to scholars or researchers who seek to better understand the drivers and constraints behind adversary behavior.

- **Incorporate other methodologies and theoretical frameworks into strategic empathy.** Strategic empathy is a mindset, a lens, and an approach to deriving insights into an adversary's way of thinking. To be deployed successfully, however, it requires a subset of methodologies and frameworks that are familiar to the IR scholar or social science researcher. Although, as demonstrated in the cases that comprise this report, there is no “one size fits all” method to applying strategic empathy in the nonproliferation space, among the tools a strategically empathic analyst may use could include discourse analysis, process-tracing, and elite interviews, among numerous others. Similarly, the analysis of pattern breaks through a strategically empathic lens can—formally or informally—incorporate elements of other frameworks, theories, and even disciplines, including historical institutionalism,³ path dependency, perspective taking,⁴ decision theory, strategic culture, political psychology, and behavioral economics, among numerous others.
- **Work in teams.** As described above, strategic empathy requires a wide variety of competencies to practice effectively. In the case of this report, for instance, all of the authors had both nonproliferation and regional expertise, which allowed them to examine the drivers and constraints on adversary acquisition, threat, and use from a variety of angles. Even still, it is almost certain that they inadvertently overlooked certain factors that fell outside their scope of knowledge but may nevertheless influence Russia, North Korea, and Iran's decision-making in this area. In order to compensate for these blind spots, analysts can benefit from working collaboratively with others who have diverse but complementary expertise.⁵
- **Look at many pattern breaks.** As outlined previously, it can be challenging to determine the elements, start, and end of pattern breaks in applying strategic empathy. This is because, as shown here, a “pattern” with respect to the acquisition, threat, and use of strategic weapons might come on the heels of a previous break and precede a future break. With this in mind, analysts who want to apply strategic empathy effectively can benefit from

² Jerrold D. Green, Frederic Wehrey, and Charles Wolf, Jr., *Understanding Iran* (Santa Monica: RAND Corporation, 2009), p. xv.

³ Historical institutionalism examines reasons for continuity or stasis (e.g., path dependence) and change (e.g., critical junctures). A related approach is punctuated equilibrium theory (PET), which examines reasons for change, including both incremental and large change (e.g., focusing events, shocks).

⁴ Perspective taking as a key element/concept of strategic empathy (the cognitive element) can be defined as: “the attempt to understand the thoughts, feelings, and motives of a target without judgment or agreement.” (Allison Abbe, “Understanding the Adversary: Strategic Empathy and Perspective Taking in National Security,” *Parameters*, Vol. 53, No. 2 (2023), p. 23.)

⁵ A point raised, for example in Abbe, “Understanding the Adversary,” p. 34.

examining as many pattern breaks as possible relating to the same country and then assessing how and where they fit together. Because of the labor-intensive nature of this work, this is another argument for conducting strategic empathy research in a team setting, which can have the added benefit of minimizing the influence of prior assumptions on the analytical product.

- **Refrain from politically or emotionally charged language.** As an important element of the aim of analytic objectivity, analysts should avoid using politically or emotionally charged descriptions of the adversary and its strategic weapons policies and actions. This includes refraining from using terms that either demonize the adversary and its actions—such as “evil,” “rogue,” or “malign”—as well as those that might be viewed as defending or excusing them.

Pitfalls to Avoid

In addition to applying the best practices identified above, analysts who seek to apply strategic empathy in their work should be aware of, and avoid—to the extent possible—pitfalls common to this approach. These include, among others:

- **Overreliance upon one type of source.** Building upon the recommendations above, analysts should be careful not to rely too heavily on one type of source, which may distort the insights they glean and, therefore, their conclusions. In so doing, however, they should also be cautious about making use only of sources that represent one perspective. These could include, on the one hand, sources that capture only U.S./Western views, especially those that are politically motivated and advocative rather than objective, or, on the other, statements from the adversary, which may obscure patterns, drivers, or constraints that it does not wish to reveal. Instead, to the extent possible, analysts should try to “triangulate” among diverse sources and perspectives in applying strategic empathy to get as close as possible to the objective truth.
- **Being seen as sympathetic to the adversary (or just naïve).** Because the concept of empathy is widely conflated with the concept of sympathy, analysts who apply strategic empathy risk being seen as aligning with adversaries, justifying or excusing their behavior, or simply naïve. Although this misperception may be difficult to combat, analysts can attempt to do so by explaining to their interlocutors the value of knowing one’s adversary by trying to understand its motives, goals, values, and fears—even if one doesn’t agree with them. These efforts are likely to be more successful if an analyst is working under a supervisor or director who appreciates the utility of strategic empathy. A well-positioned advocate for this approach can deflect criticism from the analyst and ensure that she can reap the benefits it affords.
- **Misinterpreting the rhetoric/statements of the adversary.** Related to the first bullet point above, analysts who are applying strategic empathy must be careful not to fall for false narratives that the adversary is deliberately promoting to serve its own purposes. Doing so could lead the analyst to excuse or defend its behavior in situations where this is not warranted or to be blinded to dangerous and consequential developments. To avoid this outcome, analysts should examine both the rhetoric and actions of adversary and

complement their analysis of the adversary's stated views with other sources and perspectives. In so doing, it can be helpful to apply the LATTE method of propaganda analysis⁶ which encourages critical discourse analysis of adversary propaganda by evaluating the Level, Audience, Timing, Tone, and Everything Else of this material.

- **Avoid the dual dangers of mirror imaging and the “myth of uniqueness.”** Zachary Shore and other scholars have highlighted the importance of refraining from mirror imaging in applying strategic empathy, or what Richards Heuer has described as “filling gaps in the analyst’s own knowledge by assuming that the other side is likely to act in a certain way because that is how the US would act under similar circumstances.”⁷ Doing so requires “understand[ing] that others perceive their national interests differently from the way we perceive those interests.”⁸ According to Dima Adamsky, the tendency toward mirror imaging comes from insufficient interest in the adversary’s way of thinking.⁹ To Shore, it constitutes “the worst approach to empathy because it assumes that others will think and act as we do, and too often they don’t.”¹⁰ At the same time, however, Scott Sagan has also cautioned that analysts should avoid moving too far into the other direction by embracing the “myth of uniqueness,” or the assumption that because a state has “different internal characteristics and faces different external challenges, no important patterns exist” across states.¹¹ In sum, to apply strategic empathy effectively, analysts should seek to avoid both the assumption that the adversary will act or respond like the United States would in similar circumstances and the conclusion that we cannot apply lessons from other states to assess a pattern for the adversary’s actions.
- **Avoid assuming the fixed nature of an adversary and its behavior.** Another best practice Shore recommends in his work on strategic empathy is to avoid the assumptions that adversaries have a “rigid, aggressive nature”¹² with “unchanging, aggressive traits”¹³ and that their “future behavior will mirror past behavior.”¹⁴ He argues that relying on these assumptions “can lead to the belief that the enemy only understands force and that it views compromise as a sign of weakness, and can create a self-fulfilling prophecy.”¹⁵ According to Stephen Walt, by relying on such assumptions, analysts end up “demonizing the enemy as irredeemably evil, untrustworthy, and incapable of change or compromise.” The result is that

⁶ See, for example: Rachel Minyoung Lee, “Understanding North Korea’s Public Messaging: An Introduction,” The National Committee on North Korea, Hyundai Motor-Korea Foundation Center for Korean History and Public Policy, undated, <https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/FINAL-NCNK-WWC-RMLee-Understanding%20North%20Korea%27s%20Messaging.pdf>.

⁷ Richards J. Heuer, Jr., *Psychology of Intelligence Analysis* (Central Intelligence Agency: Center for the Study of Intelligence, 1999), p. 70.

⁸ Heuer, Jr., *Psychology of Intelligence Analysis*, pp. 70-71.

⁹ Dima Adamsky, *The Culture of Military Innovation: The Impact of Cultural Factors on the Revolution in Military Affairs in Russia, the US, and Israel* (Stanford: Stanford University Press, 2010), Kindle edition, location 3545.

¹⁰ Shore, *A Sense of the Enemy*, locations 1438-1439.

¹¹ Scott D. Sagan, “The Origins of Military Doctrine and Command and Control Systems,” in Peter R. Lavoy, Scott D. Sagan, and James J. Wirtz, eds., *Planning the Unthinkable: How New Powers Will Use Nuclear, Biological, and Chemical Weapons* (New York: Cornell University Press, 2000), p. 17.

¹² Shore, *A Sense of the Enemy*, locations 2910-2911.

¹³ Shore, *A Sense of the Enemy*, location 2665.

¹⁴ Shore, *A Sense of the Enemy*, location 2571.

¹⁵ Shore, *A Sense of the Enemy*, location 2665.

conflicts become “more intense, harder to resolve, and more prone to violence.”¹⁶

- **Avoid assuming the adversary will view U.S. actions as non-threatening.** A related tendency for analysts to avoid in applying strategic empathy is assuming that the adversary could not possibly interpret certain U.S. policies or actions as anything but “benign” or non-threatening. On the contrary, just as the United States often criticizes adversary actions as “provocative,” “destabilizing,” or “threatening,” the adversary may see some U.S. policies and actions in the same way, even if Washington does not intend them to be understood as such. Indeed, as Waldman observes, “decision-makers often attribute an adversary’s behavior to intrinsic hostility rather than to situational factors, and typically underestimate their own role in provoking the adversary’s response.”¹⁷ By being aware of and resisting this tendency, analysts can derive better insights from the application of strategic empathy that will support more effective policies and actions in the future.

Strategic Empathy for the Policymaker: Crafting Policy to Address Adversary Acquisition, Threat, and Use of Strategic Weapons

Advantages

As the preceding section highlights, strategic empathy can afford analysts a valuable window into the drivers and constraints that shape adversary behavior, provided they follow a number of key best practices and avoid certain pitfalls in the process. As this section outlines, the same can be said for policymakers as well. Indeed, this specific community of practitioners may find the insights strategic empathy offers to be beneficial for crafting policies that advance U.S. interests while avoiding unintended or undesirable consequences. In particular, strategic empathy can prove advantageous in the areas identified below:

- **Assessing potential adversary responses to policy initiatives.** Applying strategic empathy can be valuable in terms of evaluating, analyzing, and anticipating potential adversary responses to policy initiatives. Indeed, Claire Yorke observes that strategic empathy can help countries “exert influence and achieve their objective more effectively *by accounting for how others may perceive and engage with them, and their impact*” (emphasis ours).¹⁸ As Yorke’s research suggests, strategic empathy is therefore useful for policymakers because it can give them a clearer view of how the adversary will react or respond to various policies that may be ginned up.

The importance of anticipating the impact of policymaking on adversaries is reinforced by the work of John Dale Grover. As he has found, a lack of information and consideration of actions from the adversary’s point of view means that states will make less informed decisions as a result and may misperceive the drivers of their opponents’ actions.¹⁹ As demonstrated in this study, the insights offered by strategic empathy in this regard, with its

¹⁶ Walt, “The Geopolitics of Empathy.”

¹⁷ Waldman, “Strategic Empathy.”

¹⁸ Claire Yorke, “Is empathy a strategic imperative? A review essay,” *Journal of Strategic Studies* (December 2022), pp. 14-15.

¹⁹ John Dale Grover, “Strategic Empathy as a Tool of Statecraft,” Center for the National Interest, October 2016, <http://cfni.org/wp-content/uploads/2016/10/Grover-John-Official.pdf>.

focus on previous pattern breaks and what they reveal about adversary policies and actions and the forces that drive or inhibit them, may have better, or at least complementary, predictive value relative to those that political scientist and IR scholars are able to offer from a purely theoretical perspective. Thus, while applying a strategically empathic lens will not necessarily lead to a change in policy, it can help policymakers identify actions that will enhance their country's national interests while avoiding unintended consequences that could cut against them.

- **Pushing back against an adversary's false justifications or excuses.** Because strategic empathy offers a window into the underlying drivers and constraints behind an adversary's behavior, it can be used to counter false narratives the adversary may promote to explain or justify its policies or actions. While these narratives may serve the adversary's own purposes, as shown by the case studies presented here, they do not always align with reality and may, in fact, undermine U.S. interests. In this respect, this advantage strategic empathy offers policymakers is similar to the advantage it affords an analyst; that is, it can be used to distinguish between genuine drivers and "stalking horses" or those which may serve as a cover or front for actual intentions, false excuses, or pretexts that are not genuine drivers. The implications are somewhat different for these two communities, however, because unlike most analysts, policymakers can operationalize these insights to publicly counter narratives promoted by the adversary or to call its bluff when appropriate.
- **Tailor U.S. deterrence and/or reassurance of adversaries.** Closely related, strategic empathy can also be particularly useful for policymakers in either tailoring deterrence options or identifying ways to reassure adversaries where appropriate. Indeed, by affording a means to separate the "wheat" from the "chaff" of drivers—e.g., distinguishing between genuine and false drivers or between the most important versus less important—strategic empathy can empower policymakers to more reliably elicit the outcomes they seek while avoiding those that are counterproductive. For example, if an adversary's aggressive actions are—contrary to what it might state publicly—driven by deep insecurity, policymakers can better avoid actions it may perceive as threatening, which could exacerbate the very behaviors they are designed to deter. By the same token, if strategic empathy reveals that an adversary's aggressive actions are, instead, a response to a perceived weakness on the part of the United States, then policymakers can modify how they signal, coerce, or deter as needed to change this perception.
- **Enhance direct dialogue/negotiations or Track 2 discussions.** Insights generated by strategic empathy can also help to ensure that direct dialogue/negotiations or Track 1.5/2 discussions between adversaries are as productive as possible. Not only will diplomats and negotiators who apply strategic empathy in advance come to talks with a better "baseline" understanding of the other side before their deliberations begin, but those who apply strategic empathy during their discussions will be able to update, tweak, confirm, or modify their understanding of one another in real time. This kind of understanding is key to reaching a negotiated outcome that both sides can accept. Indeed, as former diplomat Bill Richardson observed, "In my dealings with North Korea, and with other hard-line

governments around the world, I have learned that a basic level of respect for—and understanding of—your adversary is crucial for agreements to be reached.”²⁰

- **Improve supply-side measures.** Strategic empathy can generate insights that enhance understanding of the key technological, military, economic, or other constraints faced by the adversary in its acquisition, threat, or use of strategic weapons. This can help policymakers increase the effectiveness of supply-side measures such as export controls, sanctions, or efforts to disrupt procurement networks and supply chains. In doing so, policymakers can focus on the most important constraints that affect the adversary while spending less time and resources on measures that are more political, symbolic, or otherwise less effective.

Challenges

As these observations suggest, a strength of strategic empathy from a policymaking perspective is its ability to support a wide range of complementary, but diverse, policy solutions. Indeed, whether conceived of as a mindset, lens, or explicit approach, strategic empathy does not presuppose whether the policies it informs will be cooperative, coercive, or a mix of both. It is instead “agnostic:” it is a means of enhancing understanding, the results of which then lend themselves to different forms of operationalization. From this standpoint, while somewhat labor-intensive to implement than other means of analysis, strategic empathy offers a high return on investment for the practitioner community because it can support a robust menu of policy approaches.

Nevertheless, and is the case for analysts, there are numerous challenges policymakers may face in implementing a strategic empathy approach. These include:

- **Domestic political constraints and challenges.** It is likely to be especially difficult for policymakers to strike the balance between being perceived as either demonizing an adversary or defending/excusing its behavior that is at the core of strategic empathy. This is because this community of practitioners may face significant domestic political pressure to align with either one extreme or the other from constituencies whose interests fall at various points along this spectrum. They may likewise face criticism or even outright hostility for simply attempting to understand an adversary, particularly from those who conflate empathy with sympathy, as these terms are used colloquially as synonyms. Therefore, practicing strategic empathy may feel risky—particularly to elected officials—who may fear political backlash, especially if they are considering cooperative, rather than coercive, approaches to addressing an adversary’s strategic weapons.

A related challenge has to do with bureaucratic-political barriers policymakers may face in attempting to implement policies that are informed by strategic empathy, particularly those involving diplomatic engagement, transparency and confidence-building, and/or reassurance. Indeed, at least within the United States, certain individual or institutional “spoilers”—including those who seek regime change rather than a change in adversary behavior—will always oppose engagement with adversaries even when these approaches serve U.S. interests.

²⁰ “Richardson Campaign Press Release - Governor Bill Richardson Lays Out Bold New Vision for US Engagement with Iran and Foreign Policy in the Middle East,” The American Presidency Project, University of California, Santa Barbara, 27 June 2007, <https://www.presidency.ucsb.edu/documents/richardson-campaign-press-release-governor-bill-richardson-lays-out-bold-new-vision-for-us>.

As a result, those policymakers who are prepared to embrace strategic empathy may find themselves unable to implement certain policies informed by this approach. It is important to note, however, that these challenges are not unique to strategic empathy and would manifest in any situation in which policymakers attempted to implement cooperative, rather than coercive, policies vis-à-vis adversaries.

- **Crafting policy as a pattern break is unfolding.** As noted above, it can be challenging to analyze a pattern break in “real-time” as it unfolds. As a result, even though one of the primary benefits of strategic empathy is that it may be useful for designing effective policies with fewer unintended consequences, the focus on pattern breaks as a unit of analysis means that it is an inherently retrospective methodology. A particular challenge in this regard, as demonstrated by the analysis of Russia’s acquisition and use of Iranian drones in the war in Ukraine, is anticipating what the impact of a pattern break may be on adversary behavior long-term. Correspondingly, decisionmakers may find strategic empathy to be less useful as an approach for informing policy in some instances—such as crises—that require an immediate response based on available information.
- **Different parties will want to employ key findings from strategic empathy differently.** Because of the “agnostic” nature of strategic empathy, described above, different decisionmakers within government may reach different conclusions about how to treat an adversary’s “vital interests” on the basis of the same set of insights or findings. Indeed, one party may seek to avoid threatening adversary’s vital interests in order to find agreement or resolve conflict, while another party may advocate intentionally threatening or attacking an adversary’s vital interests in order to coerce. While these differences may be lessened to some degree by applying reflexive approaches to policymaking, about which more is said below, they may make deciding on a cohesive course of action challenging. Although this problem is not unique to strategic empathy, it may be exacerbated by the range of insights this approach generates and the complex picture it paints of the patterns, drivers, and constraints behind adversary behavior.
- **Applying strategic empathy to craft policy approaches from the mindset of defensive vs. offensive realism.** A related challenge to the one identified above is the fact that policymakers may reach fundamentally different conclusions about whether an adversary’s drivers and intentions are “defensive” or “offensive” from the same dataset based on their mindsets. Indeed, while policymakers who view adversary behavior through the lens of defensive realism may perceive that an adversary is responding to perceived threats, those who see adversary behavior through the lens of offensive realism may conclude that the adversary has aggressive, offensive intentions. These different lenses may affect how the policymaker (or analyst) interprets insights into the adversary’s underlying drivers—what it really wants, values, and fears—and resulting intentions generated by strategic empathy. As a result, strategic empathy may not lead inherently to different or more effective policies because the insights it offers up must still be operationalized by policymakers whose intrinsic qualities may have a significant influence on how they are interpreted.
- **Applying strategic empathy in different strategic contexts.** Strategic empathy may be more or less difficult for policymakers to implement effectively depending on the strategic context in which it is applied. Indeed, while there may be relatively little resistance and few

institutional barriers to its use under conditions of peacetime competition or rivalry, the same cannot be said of periods of heightened tension. Crises and the outbreak of military conflict/war are likely to create even less hospitable policymaking environments for approaches like strategic empathy. Ironically, however, it is during these periods when strategic empathy may be all the more necessary and valuable given its importance to conflict transformation, about which more is said below.

- **What factors and actors can be influenced vs. those that are “untouchable.”** While policymakers may face domestic political challenges associated with the implementation of policies based on strategic empathy, they may be similarly constrained by their ability to influence certain drivers or actors behind undesirable adversary behaviors. For instance, if an adversary’s acquisition of certain strategic weapons is being driven in part by the parochial interests of its military-industrial complex or competition for funding among weapons design bureaus, it may be impossible for U.S. or Western policymakers to influence those internal considerations. Policymakers must therefore sift through the findings generated by a strategic empathy approach carefully to determine what factors and actors can be effectively targeted. While this challenge is another that is not unique to strategic empathy, it may require more time and effort to address because of the plethora of insights this approach can offer into the drivers and constraints on adversary behavior.

Recommendations and Best Practices

In the interest of reaping the rewards described above, policymakers should implement a series of best practices that will enhance strategic empathy’s utility in practical terms. These include:

- **Conduct “auditing” of adversary responses to policies.** Auditing entails examining existing policies, actions, behaviors, and postures critically with the goal of determining how they have influenced an adversary in practice. The utility of “auditing” in this regard has been explored most extensively by Kristin ven Bruusgaard, who has used it to analyze the intended and unintended consequences of the deterrence policies of Russia and NATO and recommend modifications that would enhance their efficacy.²¹ Strategic empathy is the natural complement to auditing because of the light it sheds on the underlying and often difficult-to-discern drivers and constraints behind adversary patterns of policies and actions that may manifest in ways that U.S. or Western policymakers did not anticipate.
- **Practice “reflexivity” in viewing U.S. policies and actions.** In order to use strategic empathy effectively, policymakers should practice reflexivity to determine how U.S. policies and actions may inadvertently influence adversary drivers/constraints. Reflexivity entails questioning and reflecting upon one’s own prior assumptions, beliefs, and biases and how these may affect one’s understanding of others. Applying reflexivity to strategic empathy thus entails not only understanding how the adversary sees itself—including its key drivers—but also how the adversary sees the United States (and other adversaries), perhaps in ways that differ from what American policymakers assume. As Matt Waldman observes, empathy

²¹ For example, see Kristin Ven Bruusgaard, “Auditing Deterrence Strategies: NATO, Russia and European Security,” virtual seminar, Freeman Spogli Institute for International Studies, Stanford University, June 9, 2020, <https://fsi.stanford.edu/events/deterring-or-racing-against-adversary-russia-and-nato-europe>.

and reflexivity are both critical to crafting effective policy because, “empathy can provide insights into how other actors are likely to perceive and react to what the United States does, and expose false assumptions that sometimes underpin strategic mistakes.”²²

- **Develop a security dilemma sensibility.** In addition to practicing reflexivity as part of a strategically empathic approach to understanding the adversary, policymakers should seek to develop a security dilemma sensibility (SDS). According to Kenneth Booth and Nicholas Wheeler, this sensibility connotes “the ability to understand the role that fear might play in [the adversary’s] attitudes and behavior, including, crucially, the role that one’s own actions may play in provoking that fear.”²³ Following Stephen Walt, policymakers who have cultivated an SDS will ask if it is possible that “some of our actions are making the other side’s sense of necessity more acute and unintentionally reinforcing the behavior that is bothering us?”²⁴ As he argues elsewhere,

It would be a more secure and peaceful world if more leaders considered whether a policy they believed was benign was unintentionally making others nervous, then considered whether the action in question could be modified in ways that alleviated (some of) those fears. This approach won’t always work, but it should be tried a more often than it is.²⁵

- **Use “red teaming.”**²⁶ Red teaming, or “the practice of viewing a problem from an adversary or competitor’s perspective,”²⁷ can be useful to help policymakers think about adversary perspectives. Red teaming can help to cultivate both reflexivity and a security dilemma sensibility, for example by producing “red papers” or “red hat analysis”—such as policy or strategy documents written from the adversary’s perspective—that are designed to put policymakers in the shoes of the adversary by “perceiv[ing] threats and opportunities as others see them.”²⁸ Such red teaming can be used, for instance, as part of the recommendation provided above, i.e., as a way to assess potential adversary responses to policy initiatives.

Pitfalls to Avoid

While the best practices above will enhance strategic empathy’s utility for policymakers, this community of practitioners must also be aware of, and seek to avoid, certain pitfalls in its

²² Waldman, “Strategic Empathy.”

²³ Booth and Wheeler, 2008, p. 7, quoted in Baker, “The Empathic Foundations of Security Dilemma De-escalation,” p. 1253.

²⁴ Stephen M. Walt, “The Geopolitics of Empathy,” *Foreign Policy*, June 27, 2021, <https://foreignpolicy-com.ezproxy-miis.middlebury.edu/2021/06/27/the-geopolitics-of-empathy/>.

²⁵ Stephen M. Walt, “Does Anyone Still Understand the ‘Security Dilemma,’” *Foreign Policy*, July 26, 2022, <https://foreignpolicy-com.ezproxy-miis.middlebury.edu/2022/07/26/misperception-security-dilemma-ir-theory-russia-ukraine/>.

²⁶ For details on red teaming, see Micah Zenko, *Red Team: How to Succeed By Thinking Like the Enemy* (New York: Basic Books, 2015); “Red Team Analysis,” in U.S. Government, “A Tradecraft Primer: Structured Analytic Techniques for Improving Intelligence Analysis,” March 2009, pp. 31-33; *Red Team Journal*, <https://redteamjournal.com/>.

²⁷ Richards J. Heuer, Jr. and Randolph H. Pherson, *Structured Analytic Techniques for Intelligence Analysis*, second edition (Los Angeles: Sage, 2015), p. 263.

²⁸ *Ibid.*, p. 223.

application. These include engaging in self-righteousness, moral outrage, righteous anger, or contempt in crafting policies toward the adversary. Indeed, Anatol Lieven has argued that, in applying strategic empathy it is important to “eschew self-righteousness,” because “the greatest enemy of an open mind and a capacity for empathy is self-righteousness.”²⁹ Similarly, another source argues that one should “Never regard your adversary with contempt. No good can come from it. The superiority you feel is not worth the surprise that inevitably follows.”³⁰ This insight, while critical, may be especially challenging to put into practice at moments of heightened tension, crisis, or even outright conflict with adversaries when, as noted previously, strategic empathy is more necessary than ever.

Another pitfall for policymakers to avoid is the practice of “strategic narcissism.” Former national security advisor H.R. McMaster, who borrows this term from Hans Morgenthau in his work, describes strategic narcissism as “the tendency to view the world only in relation to the United States and to assume that the future course of events depends primarily on U.S. decisions or plans.”³¹ While, according to McMaster, applying strategic empathy can help to act as a “corrective to strategic narcissism,”³² this will not necessarily happen of its own accord. Instead, policymakers who seek to apply strategic empathy must actively attempt to avoid strategic narcissism from the outset in order not to overlook or miss crucial insights into adversary policies and actions and the drivers and constraints that shape them.

Strategic Empathy and Conflict Transformation

As this report has demonstrated, strategic empathy—when correctly applied—can help analysts better understand an adversary’s patterns for the acquisition, threat, and use of strategic weapons and the key factors that shape them. These insights can then help decisionmakers to identify and implement policies that will advance their national interests vis-à-vis their adversaries in this regard. But can strategic empathy actually help to *transform conflict* in this way? While the results of this project suggest that the answer may, on some levels, be yes, it is also important to acknowledge its limitations when it comes to eliminating incompatibilities between the security interests of rival states, which are often at the root of conflict.

With this in mind, perhaps the most valuable contribution strategic empathy can make to conflict transformation is to reduce or eliminate sources of misunderstandings and mistrust that can lead to “unhealthy” or destructive forms of conflict between adversaries.³³ Unhealthy forms of conflict—such as that which currently characterizes U.S.-Iran and Israel-Iran relations—may feature a lack of diplomatic contact and direct communication channels, so-called “shadow war,” highly militarized communications that rely primarily on threats and use of force, entrenched and longstanding grievances on both sides that generate negative emotions, narratives, and myths, and an overall absence of guardrails for constraining conflict. In their place, the insights strategic empathy offers into the drivers behind adversary behavior can help to usher in “healthy” (or “healthier”) and

²⁹ Lieven, “US strategists lost empathy, along with their wars.”

³⁰ “The Need for Genuine Empathy in Modern Adversarial Red Teaming,” *Red Team Journal*, November 28, 2016, <https://redteamjournal.com/archive/will-to-win-jn7c7>.

³¹ H.R. McMaster, *Battlegrounds: The Fight to Defend the Free World* (New York: Harper, 2021), p. 15.

³² McMaster, *Battlegrounds*, p. 16.

³³ Based on Middlebury Conflict Transformation discussions, “Transforming Conflict: An Interdisciplinary Conversation,” May 5, 2023.

constructive forms of conflict, or as one expert put it, “managed enmity.”³⁴ As exemplified by U.S.-Soviet relations during much of the 1980s, for instance, “healthy” or constructive conflict does not mean an absence of tension but rather tension accompanied by regular engagement in the form of Track 1 and Track 2 dialogue, negotiations on confidence-building and arms control measures, and the presence of politically binding “rules of the road” to encourage restraint, among others. Relatedly, because strategic empathy can reveal less obvious and unintended sources of adversary insecurity, mistrust, and fear, it can support policies that will lessen the likelihood for miscalculations or misinterpretations that could escalate dangerously. In this regard, strategic empathy can help transform conflict by increasing crisis stability and reducing the risk of strategic weapons use.

More broadly, the sponsor of this report has highlighted a number of components of conflict transformation where strategic empathy may be applicable.³⁵

The first of these relates to **contextual knowledge**, or a deep understanding of the important underlying historical, geopolitical, social, and other factors that shape conflict. The strategic empathy approach can enhance the contextual knowledge of analysts and policymakers about the important historical, political, military, technological, organizational, and other key patterns, dynamics, and factors that shape an adversary’s approach to the acquisition, threat, and use of strategic weapons.

The second of these relates to **intercultural competence**, or how to talk across differences. Because strategic empathy is fundamentally an approach that enables analysts and policymakers to better understand their adversaries, it can likewise contribute to the development of intercultural competence. Indeed, because strategic empathy offers insights into how adversaries view themselves, how they view the United States, and how they understand concepts and terms in their own language and context, it can facilitate better and more productive communication with adversaries.

The third of these relates to **critical self-awareness** or an understanding of one’s own biases and perspectives. This aspect of conflict transformation maps nicely onto the concept of reflexivity which, as described previously, entails questioning and reflecting upon one’s own prior assumptions, beliefs, and biases and how these may affect one’s understanding of others. For the American policymaker or analyst, reflexivity is enhanced by strategic empathy because it offers insights into how U.S. policies and actions may have unintended, or inadvertent, impacts on adversaries of which policymakers and analysts may have been unaware. For the same reasons, strategic empathy can likewise contribute to conflict transformation by helping practitioner communities practice critical self-awareness.

The fourth and final of these relates to **dialogue and deliberation**. As described above, strategic empathy can contribute to transforming unhealthy conflicts into healthy (or healthier) conflicts. One characteristic of healthy conflict is regular interaction between adversaries, whether at a government-

³⁴ Nasser Hadian, “Iran & China: An Iranian View,” *The Iran Primer*, United States Institute of Peace, June 28, 2023, <https://iranprimer.usip.org/blog/2023/jun/27/iran-china-iranian-view>.

³⁵ See Middlebury elements of Conflict Transformation in “Conflict Transformation at Middlebury, Resource Library,” updated October 7, 2022, https://docs.google.com/document/d/19zsqGS2Azd_kBeWy-zd14cLKu4TGZpE9wWYiQt46jgI/edit; “What is Conflict Transformation,” undated, <https://www.middlebury.edu/conflict-transformation/what-conflict-transformation>; “Projects for Peace Presents First Alumni Award,” May 8, 2023, <https://www.middlebury.edu/announcements/announcements/2023/05/projects-peace-presents-first-alumni-award>.

to-government level, a military-to-military level, a Track 1.5/2 level, or in the context of scientific exchanges, to name but a few. Strategic empathy can increase opportunities for such dialogue and engagement by helping to reduce or eliminate sources of tension in U.S.-adversary relations. In this manner, it can contribute to conflict transformation by creating environments where dialogue and deliberation are more feasible.

Avenues for Further Research

This report has shown how strategic empathy can be applied to enhance understanding of Russian, North Korean, and Iranian policies and actions relating to the acquisition, threat, and use of strategic weapons, as well as the drivers and constraints that shape them. It has examined eight diverse pattern breaks that illustrate the insights that can be derived from this approach, exploring the challenges to, and best practices for, reaping these rewards. Yet there are numerous other pattern breaks where strategic empathy could also enhance our understanding of the forces that shape adversary behaviors, policies, and actions relating to strategic weapons. Furthermore, there are questions that this study has raised which merit further investigation.

Among the many additional case studies where strategic empathy may be usefully applied are those relating to Iran's suspected pursuit of nuclear weapons. An analysis of Tehran's willingness to negotiate and agree to the 2013 Joint Plan of Action and its follow-on, the 2015 Joint Comprehensive Plan of Action (JCPOA), for instance, could offer particularly valuable insights into the forces that not only drive but constrain its goals with respect to the acquisition of strategic weapons.³⁶ Another case study that would usefully complement this could look more deeply at the AMAD Plan (late 1990s-2003) and Iran's move from a hedging posture to a dedicated nuclear weapons program and back to hedging. The insights these analyses would offer together would be particularly timely for policymakers as they attempt to contain Iran's nuclear ambitions and bring it back to the negotiating table.

With regard to Russia, another area of future research might include the area of future Russian military innovation against the backdrop of the war in Ukraine. This would include a focus on both Russian innovation in nuclear weapons—with its shifting threat perceptions of the West and NATO—as well as long-range conventional weapons.

Another set of case studies where strategic empathy could yield useful insights have to do with pattern-breaking events or behaviors regarding China and its pursuit of nuclear weapons and delivery systems. From an historical perspective, for instance, it would be enlightening to examine Chinese behavior during the 1995-1996 Taiwan Strait Crisis and what it reveals about the way Beijing threatens strategic weapons use and why. For similar reasons, an examination of China's decision to halt nuclear testing and sign the Comprehensive Nuclear Test Ban Treaty in the 1990s through the lens of strategic empathy could shed light on the circumstances under which the PRC practices nuclear forbearance. Also, examining China's transition—for example, during the Xi presidency—from a policy of minimum deterrence to one of moving toward being on par in nuclear force structure with the United States would lend itself well to strategically empathic pattern break

³⁶ Indeed, various sources have highlighted the JCPOA negotiations as an example of the effective use by U.S. officials in applying strategic empathy towards Iran to advance U.S. national security goals. See for example: "The Empathic Foundations of Security Dilemma De-escalation," *Political Psychology*, Vol. 40, No. 6 (2019), pp. 1251-1266.

analysis. This could include China's recent construction of missile silos and expansion of its ICBM arsenal at a time when these developments are precipitating a redrafting of U.S. deterrence strategy.