Iran's Missile System: The Principal Means of Deterrence

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Iran has built up the largest arsenal of missiles in the Middle East. The majority are located in Iran, while the remainder are among Iranian proxies in Syria, Iraq, Yemen, and most of all in Lebanon, under Hezbollah. For Iran, this missile arsenal is currently its most important means of deterring its enemies and defending itself, and thus Tehran has adamantly and successfully refused to discuss the imposition of restrictions on its missile program. In recent years, Iran has worked to improve the quality of its missiles and rockets – expanding their range, and improving their precision. Thus far, it has only used its missiles on a few occasions against its adversaries – whether from Iran itself or by means of its proxies – and to a limited extent, including against IDF forces in the Golan Heights, in response to Israeli aerial attacks in Syria. This restraint may signify that Iran will not rush to launch missiles toward countries with significant retaliatory capability, such as the United States and even Israel, and that if it were to decide to do so, it would probably prefer that such launches – at least in the initial stage – be carried out by its proxies, especially Hezbollah.

Keywords: Iran, Hezbollah, missiles, rockets, deterrence

In September 1980, Iran's deterrence strategy failed. The major resources that the Shah's regime had invested in military buildup and high quality weapon systems, as well as Iran's geographical advantages, did not deter Saddam Hussein from dragging Iran into a full scale, prolonged, and painful war. This failure stemmed from the strategic weakness in Iran's military

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preparedness resulting from the Islamic Revolution – first and foremost the military severance from the United States, the weapons embargo that the Western governments imposed on Iran, and the extensive purges of Iranian officers – and the military advantage enjoyed by Iraq due to its large missile arsenal. This failure led the new Iranian leadership to build its post-war deterrence strategy on different foundations: a large missile arsenal, asymmetric warfare, Shiite militias, chief among them Hezbollah, and perhaps also nuclear weapons in the future.

The most significant of these foundations is the large and improving arsenal of missiles that Iran has amassed, bolstered by the arsenal of rockets and missiles that Iran has built for Hezbollah in Lebanon. This article surveys the nature and importance of this arsenal, the considerations that could drive Iran to use it, and its implications for Iran's adversaries.

Background to the Missile Program

The roots of Iran's missile program lie in the Iraq-Iran War. When the war broke out in September 1980, Iran did not have any surface-to-surface missiles. In contrast, before the war Iraq had built up a relatively large missile arsenal, which included mainly Scud-B missiles acquired in the Soviet Union, whose range was extended to 600 km. Iraq began firing Scud missiles toward Iran in October 1982, and by the end of the war in August 1988 had fired over 500 missiles – mainly toward urban centers and military areas. Iraq carried out its primary missile attack, some 190 missiles, in 1988, as part of the fighting known as the War of the Cities.

During the first years of the war, Iran had no ability to respond to the missiles fired by Iraq, and it made great efforts to acquire Scud missiles in Libya, Syria, and North Korea. These acquisitions allowed it to start launching missiles toward Iraq only in 1985, and by the end of the war it had fired some 120 missiles, most of them during the War of the Cities. Iran's missile inferiority stemmed mainly from the fact that its missile arsenal was depleted quickly in 1988, and served as an important factor in Iran being forced to agree to end the war at a time and under conditions that it did not want.[1]

A large missile arsenal will help Iran expand its influence in the region and achieve regional hegemony.

The War of the Cities convinced the Iranian leadership to invest its armament efforts mainly in the field of missiles. Iran reached the conclusion that missiles are the weapon that can win a war, and that its lack of a

missile arsenal in 1980 undermined its ability to deter Saddam Hussein from waging war against it. The Iranian population's fears of Iraqi missile strikes, and specifically the fear that Iraq could also arm its missiles with chemical warheads, contributed to this conclusion. The population's loss of morale had an important impact on the Iranian leadership's decision to end the war in an inferior position.

Since the late 1980s, Tehran's approach to missiles as a strategic weapon related mainly to the Iraqi threat. It was the Saddam Hussein regime that introduced missiles as a central weapon of war in the Middle East, attacked Iran, and left the Iraqi threat in place even after the war. Thus, once the war ended, Iran saw an urgent need to rebuild its forces in order to deter Saddam Hussein from another military campaign, and prevent another failure if Iraq were to attack. As part of this, Iran planned to build a modern air force, a large armored corps, and a state-of-the-art navy, based on an extensive weapons supply from Russia.

But the Gulf Wars brought about a significant change in the strategic balance of power with respect to Iran. In the 1991 Gulf War, the United States damaged Iraq's military capabilities significantly, and during the 2003 war and the occupation of Iraq by the United States, most of these capabilities were eliminated. Thus, Iraq's military threat toward Iran was removed, and Iraq lost its ability to counteract and block Iran's penetration and influence in the region. At the same time, since the early 1990s, the United States has constituted the most serious threat toward Iran – as a result of the occupation of Iran's neighbors, Iraq and Afghanistan, and the expansion of the US military presence near Iran; and as a result of the United States perceiving Iran as the main threat to its allies and interests.

Along with the rise of the American threat, in Iran's eyes another threat has appeared – the Israeli threat, which developed in response to the Iranian regime's extreme approach toward the Jewish state and threats to eradicate it. In addition to the religious-fundamentalist elements infusing the attitude toward Israel, the Iranian leadership believes that Israel incites the United States to attack Iran, damage its economy, and overthrow its regime. Israel is also seen by the Iranians as a formidable regional power that has significant military strength and seeks to block Iran's drive toward regional hegemony. The rise of the American and Israeli threats, and the reduction of the Iraqi threat, transferred the emphasis of the Iranian leadership's concept from nearby threats to distant threats, and required a response in the form of a long arm against new adversaries.

Joining these threats is a third, regional threat. The internal upheaval in Syria since 2011, and the intensification of the upheaval there and in Iraq since 2014 following the Islamic State's takeover of large portions of their territories, posed new challenges for Iran. These threats prompted Iran to operate military forces hundreds of kilometers from its territory, where its aged air force is of little assistance. The changes in Iran's map of threats have therefore influenced the goals of its military buildup. The decline of the Iraqi threat reduced the imperative to build a large and modern air force. In addition, Iran would not have been able to contend with the United States or Israeli air force, and even in the best case, achieving the ability to do so would take many years. Saudi Arabia and some of the Gulf states have built air forces that rely on high quality planes. In contrast, Iran's assessment seems to have been that investing in a large arsenal of ballistic missiles would quickly provide it with a long reach and deterrence toward Israel and other countries in the Middle East, and if necessary, perhaps even toward American targets in the Middle East and European targets.

The missile arsenals for proxies allow Iran to create another front against its adversaries, first and foremost Israel, far from its borders. Iran can then claim that it is neither involved in its proxies' actions nor responsible for them, and that they are engaged in their own defense. Such a front expands Iran's attack capabilities and strengthens its deterrence.

In Iran's eyes, there seems to be another consideration behind its missile program, namely missile and rocket arsenals for its regional allies. An enormous such arsenal has already been built for Hezbollah, and Iran is currently working on improving it, especially with respect to precision capability. Israeli intelligence estimates that Hezbollah's arsenal comprises 150,000 rockets and missiles, including Fajr-3 and Fajr-5 rockets with ranges of 45 and 75 km, respectively; Zelzal-3 missiles with a range of 300 km; and M-600 missiles, which are a Syrian version of the Iranian Fateh-110. Hezbollah's missile and rocket arsenal is the largest and most important that Iran has built for its proxies.

In addition, in 2018, several sources reported that Iran had transferred dozens of Fateh-110, Zelzal, and Zulfiqar missiles with ranges of 200 to 700 km to Iraqi Shiite militias that have ties with Iran. These missiles can hit targets in Israel and in Saudi Arabia and are meant to provide backup for Hezbollah's arsenal. Iran is also helping these militias assemble missiles in Iraq.[2] Furthermore, since early 2017, Iran has transferred a significant number of missiles and rockets to the Houthis in

Yemen and has transferred parts of missiles for assembly in Yemen as well as missile production technology. Since November 2017, the Houthis have fired missiles and rockets at targets in Saudi Arabia at least eight times, including at Riyadh and the major international airport next to the capital.[3]

From Iran's perspective, building missile arsenals for its proxies has an important advantage. These arsenals allow Iran to create another front against its adversaries, first and foremost Israel, far from its borders, claiming that it is neither involved in these actions nor responsible for them, and that its proxies are engaged in their own defense. Such a front expands Iran's attack capabilities and strengthens its deterrence. It is clear that Iran does not have any actual means of building airpower for its proxies, and has thus concluded that a large arsenal of missiles and rockets is the most suitable means of creating deterrence for both its proxies and for itself.

It seems that there were two additional reasons for Iran's decision to prioritize its missile program over conventional forces, especially a high quality air force. One is that a large missile arsenal will help Iran expand its influence in the region and achieve regional hegemony. The use of missiles and rockets will help deter and harm rivals and will boost allies, including in countries that do not border Iran. The other reason relates to Iran's nuclear program. Despite the 2015 nuclear deal, Iran has presumably not given up on its intention to achieve nuclear weapons. Ballistic missiles are the main launch mechanism for nuclear weapons, and if Iran achieves such weapons, its missiles will be ready.

Development of the Missile Program

At the outbreak of the Iraq-Iran War, not only did Iran not have a missile arsenal, it did not have the infrastructure or capability to produce missiles. Thus from the outset, when Iran decided to build up a large arsenal of missiles, it also decided to develop domestic production capability. This decision was the main reflection of a broader outlook whereby Iran would aspire to self-sufficiency in weapons acquisition. This goal stemmed from lessons learned in the Iraq-Iran War; before the war even began, Western governments imposed a complete embargo on weapons supply to Iran, and the Soviet Union also refrained from supplying it with significant amounts of weapons until the end of the war. Iran decided therefore to develop technological capabilities – first for assembling missiles, and later for producing and developing them. During the first years of this program, Iran received help mainly from China, North Korea, and Russia.

Along with production of short range rockets, the Iranian missile program entered a significant phase with the production of the Shahab-3 missile – a ballistic missile with a range of 1,300 km that was built on the basis of the North Korean Nodong missile, which was developed and improved by Iran starting in 1993, and became operational in 2003. From then on, Iran produced a long line of ballistic missiles whose performance seems to have gradually surpassed that of the North Korean missiles, and the Iranian missile program increasingly reduced its dependence on North Korea.[4]

The best known Iranian missiles fall into two groups. One group includes missiles with a range of 500 to 700 km. These missiles are intended for use against hostile organizations in Iraq and Syria, as well as in Saudi Arabia and the Gulf states, and they can be fired from Lebanon and Syria at targets in Israel. An example is the Qiam missile, which was first tested in 2010 and runs on liquid fuel; its range was increased from 700 to 1,000 km. The Qiam was transferred to the Houthis in Yemen, and since 2018 these missiles have occasionally been fired from there into Saudi Arabia. However, it seems that the most important missile in this group is the Fateh-110 – a missile that runs on solid fuel that was developed from the Zelzal non-precision rocket, but now has a significant degree of precision. Its original range was 250 km, but its modern version, called the Zulfiqar, reaches a range of 700 km. The Zulfiqar is considered the most precise missile in Iran's arsenal.[5]

The second group includes medium range missiles with a range of 1,000 to 2,000 km. These include the veteran Shahab-3, which is not a precise missile; the Ghadr missile with a range of 1,600 km, which in tests has reached a range of 1,900 km; the Emad missile with a range of 1,700 km; and the Sejjil-2 – a two-stage missile that runs on solid fuel, with a range of 2,000 km, that is undergoing tests and seems not to be operational yet.[6] In September 2017, Iran announced that it had successfully launched a missile called the Khorramshahr, which can carry several warheads to a range of 2,000 km, but American sources claimed that the launch failed.[7]

Iran has built up the largest arsenal of missiles in the Middle East. It includes rockets, ballistic missiles, cruise missiles for surface attacks, and various kinds of satellite launchers, including over 1,000 short and medium range missiles, and over 10 kinds of ballistic missiles. Some of these missiles, such as the Khorramshahr, can carry nuclear weapons, and some of the "smart" rockets and missiles have a high degree of precision – especially the short range missiles, such as the Fateh-110 and the Zulfiqar,

but also the Emad and the Qiam. At this stage, the medium range missiles are mainly effective against large targets, including population centers.[8] The short range missiles can be used by Iran for hitting nearby targets, particularly enemy targets and hostile organizations in Saudi Arabia, the Gulf states, Yemen, and Iraq. As long as Iranian/Shiite forces are in Syria, they can fire missiles toward Israel or opposition targets in Syria itself. In addition, Iran can operate its medium range missiles from within its territory against targets in Israel, which is 1,200 km away, not only from western Iran, but also from deep within Iran's territory.

In the current situation, short range missiles launched from western Iran can hit targets in the Gulf itself, in Gulf states, in the eastern part of Saudi Arabia, including its oil facilities, in most of Iraq, and in part of Turkey. Israel is outside of the range of these missiles. Medium range missiles launched from Iran can hit targets not only throughout Israel, but also in Iraq, Syria, Jordan, and Turkey, all of the Arabian Peninsula, and around half of Egypt, as well as parts of Eastern Europe.

Currently Iran does not have an intercontinental ballistic missile, that is, a missile with a range of over 5,500 km, nor, apparently, is it close to developing such a missile. This means that it does not have the ability to threaten missile fire against targets in Western Europe, not to mention the United States. Nonetheless, Western governments are concerned that if restrictions are not imposed on Iran's missile program, Iran will eventually succeed in developing an intercontinental missile too. This concern stems in part from the fact that since 2008, Iran has launched satellites into space, for intelligence purposes and for scientific and other purposes, and to this end it has built at least two kinds of vehicles for launching satellites into space. That said, Iran's level of success is not clear, and its activity in this field seems to have encountered difficulties. Some believe that the space launch efforts are connected to developing an intercontinental missile, since developing this missile and developing a space vehicle use similar technologies, and developing a space vehicle can provide the Iranians with the experience and knowledge for building an intercontinental missile. Thus, some in the American intelligence community believe that Iran does seek to develop an intercontinental missile, for the purpose of strengthening its deterrence toward the United States.[9]

Restrictions on the Missile Program?

From the beginning, Iran's missile program was not included in the talks that led to the nuclear deal that was achieved in 2015, and therefore no agreement on it was reached. Exclusion of the missile issue from the agreement stemmed from Iran's firm opposition, claiming that it has no connection to the nuclear issue, and from the willingness of the other partners to sidestep an agreement on the missile issue, fearing that insistence on the missile program would sabotage the nuclear deal. The only limitation that was imposed on Iran's missile program was Security Council Resolution 2231, which was passed immediately after the nuclear deal was reached, and calls on Iran not to carry out tests with ballistic missiles that can carry nuclear warheads. The wording of the resolution, which went only so far as to "call upon" Iran, seemed flimsy and not decisive enough, and enabled Iran to interpret the decision as non-binding. Indeed, since the approval of the nuclear deal, Iran has carried out a series of tests with medium range ballistic missiles, satellite launchers, and cruise missiles, following which the Trump administration stated that these tests are a violation of the Security Council resolution.

Iran's stance on its missile arsenal is unequivocal. The ability to carry out massive missile fire against its adversaries is the most important element of Iran's deterrence and defense capabilities, especially toward the United States and Israel – at least as long as it does not have nuclear weapons. The need to maintain and develop this element prompts its refusal to discuss the imposition of any restrictions on its missile program. Thus, former Iranian Defense Minister Hossein Dehghani announced in August 2015 that Iran will develop any missile that it deems appropriate in order to strengthen its deterrence capability, and will not agree to any limitations on the range or performance of its missiles. To this end, Iran also built systems of tunnels and underground production, storage, and launch facilities in different areas of Iran, some of which were displayed to the media, in order to strengthen Iran's deterrence capability. These underground structures, the largest of their kind in the Middle East, are meant to protect and conceal elements of the missile program.[10]

Iran's overt efforts to improve the quality and range of its missiles have led to a certain change in the stances of European governments toward restrictions on Iran's missile program. While the governments of the UK, France, and Germany disagree with the Trump administration's position regarding the nuclear deal, they too understand, more than in the past, that

it is important to impose certain restrictions on Iran's missile program, which already creates risks for Middle East countries, and theoretically for several European countries as well.

Against this backdrop, in one respect, Iran has shown some flexibility in its position on the missile issue – in setting a maximum range for its missiles. Since the end of the first stage of talks on the nuclear deal in November 2013, senior Iranian officials have reported limiting the range of Iran's ballistic missiles to 2,000 km. Thus, in December 2013, before the approval of the nuclear deal, Revolutionary Guards commander Mohammad Ali Jafari said that Iran can develop missiles to a range of over 2,000 km, and the Guards wish to do so, but Supreme Leader Ali Khamenei has directed that the range of missiles be limited to 2,000 km. Jafari explained that this range is sufficient for Iran for now, since it includes Israel and the American bases near Iran.[11]

It is clear that setting this range is a voluntary limitation and is not binding for Iran if not stipulated in an international agreement. The restriction stated by senior Iranian officials during the negotiations over the nuclear deal was presumably intended to deflect the pressure on Iran to include the missile issue in the nuclear deal. Indeed, after the approval of the nuclear deal, senior Iranian officials hardened their approach toward the 2,000 km range. Iranian Defense Minister Dehghani said in August 2016 that Iran had not set a limit on the range of its missiles, and in November 2018 the deputy commander of the Revolutionary Guards warned that if the European countries were to pose a threat toward Iran by intervening in its nuclear program, Iran would increase the range of its missiles, whereby they would cover Europe.[12]

Implications

In the current situation, there is no genuine external limitation on Iran's missile program, and Iran continues to carry out tests with various kinds of missiles. Iran rejects any agreement outright that would impose restrictions on the program, and any negotiations that are meant to lead to such an agreement. However, it is possible that if its difficult economic situation continues, Iran would be willing to consider the imposition of restrictions on the range of its missiles – for example to a distance of 2,000 km – if the US administration would agree to the framework of the nuclear agreement, including canceling the sanctions that have been reinstated. Iran would have two main considerations: one is that Iran's main targets are within this

range in any case – Israel, the American bases in the region, Saudi Arabia, and other Arab states; and the other is that improving the precision of its missiles is currently more important to Iran than extending their range. However, even if Iran were willing to make such a concession, it is very doubtful whether it would lead to the restoration of the nuclear agreement, since the Trump administration has additional stringent demands regarding the nuclear issue and Iran's actions in the region that would be very difficult for Iran to accept.

If no way is found to negotiate restrictions on the missile program, Iran will likely continue to develop it in the coming years, quantitatively and qualitatively. The expected improvement in the precision of missiles could enable Iran to hit military and infrastructure targets in the coming decade. And if Iran decides to work toward nuclear weapons, especially after the expiration of the nuclear deal, it will have an arsenal of missiles that can be used for launching such weapons. This change would pose a significant challenge for Iran's adversaries, and especially for Israel, Saudi Arabia, and the United States, which would need to develop or acquire improved missile defense systems, if they have not yet developed them.[13]

The heightened threat from Iran's missile program is not the end of the story. In addition to Iran's missile arsenal, the large arsenal of missiles and rockets under the responsibility of Hezbollah in Iran, the Iranian effort to improve and expand the deployment into Syria and Iraq, and to a lesser extent Iranian activity toward a missile arsenal in Yemen that will threaten Saudi Arabia are all important examples of Iran striving to establish fronts that rely in part on missile arsenals, as part of its attempt to expand its regional influence and deterrence capability.

Since the end of the Iraq-Iran War, Iran has used its domestic missile arsenal against its adversaries only on a few occasions. Iran has never launched missiles from within its territory against American, Israeli, or Saudi targets. In contrast, in April 2001 Iran launched dozens of missiles and rockets toward bases of the Iranian opposition group People's Mujahedin in Iraq; in June 2017, it launched six Zulfiqar missiles from Iranian territory toward Islamic State bases in eastern Syria; and in October 2018, six Zulfiqar and Qiam missiles were launched toward Islamic State targets in southeastern Syria, in response to a serious attack by the Islamic State in Iran. In September 2018, missiles were fired from Iran toward Iranian Kurdish rebel targets active in northern Iraq.[14] In addition, Shiite militias stationed in Syria have fired missiles/rockets toward targets belonging

to organizations that oppose the Assad regime, and Iraqi Shiite militias connected to Iran have fired missiles/rockets received from Iran toward their adversaries in Iraq. Iran has also responded to Israeli Air Force attacks in Syria by firing rockets toward IDF forces on the Golan Heights – in May 2018 Iranian forces in Syria fired 32 rockets at IDF outposts, and in January 2019 Quds Forces in Syria fired a "smart" rocket toward an IDF force on the Hermon; in both cases the rocket fire was ineffective.[15]

Conclusion

There are thus several considerations guiding Iran regarding the use of its missile arsenal and those of its proxies. First, Iran has no interest in deteriorating into a missile war like the costly War of the Cities. Thus, if Iran were to decide to begin a confrontation by launching missiles or respond in this way to an adversary opening fire, it might carry out limited missile fire for the purpose of deterrence. If Iran were to see it necessary to carry out extensive missile fire toward its adversaries, in most cases it might prefer that the missiles be fired by its proxies, at least in the initial stages of the confrontation. Missile fire by its proxies would provide Iran with greater freedom of action, enable it to try to absolve itself of responsibility for the missile fire, and might reduce the risk of retaliation against Iranian targets.

Second, Iran has no interest in becoming entangled in a confrontation that includes missile fire with an adversary that has significant retaliatory capabilities. Above all, Iran is expected to continue to refrain from massive missile fire on American targets in the Middle East, considering the military and economic retaliatory capabilities of a superpower like the United States, including an American effort to topple the Iranian regime. Iran might also refrain from extensive missile fire against Israel for several reasons. Israel has a multilayer defense system against missiles that would reduce their damage. The United States might aid Israel in a confrontation with Iran. Iran does not have a sufficient response to the use of the Israeli Air Force in response to missile fire. Israel might carry out a full scale aerial attack on Iranian/Shiite forces if they are still operating in Syria. Above all, Israel could see an Iranian missile attack as an opportunity and justification for attacking Iran's nuclear sites.

This does not mean that the US retaliatory capability would deter Iran from challenging the United States in every situation. Despite the large strategic advantage that the United States has over Iran, Iran also has a deterrent effect on the United States, especially its missile arsenal – partly in

light of Iran's ability to threaten Saudi Arabia and the Gulf states, including its threats to their oil facilities and the flow of oil in the Gulf, and the concern that a confrontation in the Gulf could deteriorate into a regional war. Indeed, the Obama administration was deterred from attacking Iran's nuclear sites in part due to concerns that the Iranian response to an attack would include harming United States allies and deteriorate into a regional war.

In Israel's case as well, there is no doubt that the Iranian regime is impressed by its capabilities in central fields, including technological developments, aerial warfare, intelligence, and the missile defense systems that it has developed. This impression has caused Iran to refrain in most cases from responding to Israel's attacks against Iranian and Shiite targets in Syria. At the same time, Iran likely understands that Israel is also careful to avoid entanglement in an extensive confrontation with Hezbollah and Hamas, which could develop into rocket and missile salvos toward population centers, and perhaps also toward strategic targets. Thus far, this mutual deterrence has had an important role in preventing deterioration into a missile war.

Therefore, Iran would prefer not to be the first to open fire with missiles from within its territory toward American targets, and perhaps also Israeli targets. However, it could instruct its proxies, especially Hezbollah, to fire missiles toward targets in Israel, and perhaps even American targets, if these were to strike first against Iranian targets. In the case of extensive fire by them, it might also launch missiles from within its territory toward Israeli targets, or even American targets.

Notes

1 Ephraim Kam, *From Terror to Nuclear Bombs: The Significance of the Iranian Threat* (Tel Aviv: Ministry of Defense publishers and Jaffee Center for Strategic Studies, 2004), chapter 5; Anthony Cordesman and Avraham Wagner, *The Iran-Iraq War* (Tel Aviv: Ministry of Defense publishers, 1998), pp. 525-38.

2 John Irish and Ahmed Rasheed, "Exclusive: Iran Moves Missiles to Iraq in Warning to Enemies," *Reuters*, August 31, 2018, https://reut.rs/2N2J5NU.

3 Brian Hook, "Transcript: Iran's Missile Proliferation: A Conversation with Special Envoy Brian Hook," Hudson Institute, September 19, 2018, https://bit.ly/2zyzres; Uzi Rubin, "Hezbollah and the Yemeni Missiles," *BESA Center Perspective Paper* No. 662, November 29, 2017, https://besacenter.org/perspectives-papers/hezbollah-yemen-missiles/.

4 Kam, *From Terrorito Nuclear Bombs*, pp. 154-61; Uzi Rubin, "Iran's Missiles as an Expression of its Global Ambition," Jerusalem Institute for Strategy and Security, December 18, 2018, https://bit.ly/2IlpW7J/.

5 Rubin, "Iran's Missiles as an Expression of its Global Ambition"; Michael Eisenstadt, "Testing the Limits: Iran's Ballistic Missile Program, Sanctions, and the IRGC," *Policy Analysis*, Washington Institute for Near East Policy, March 20, 2017, https://bit.ly/2UkCPRb; Farzin Nadimi, "Iran's Continued Push for a Nuclear-Ready Missile Capability," *Policy Watch* 3062, Washington Institute for Near East Policy, January 4, 2019, https://bit.ly/2FeXIdi; "Iran's Ballistic Missile and Space Launch Programs," Congressional Research Service, August 1, 2018, https://fas.org/sgp/crs/nuke/IF10938.pdf.

6 Rubin, "Iran's Missiles as an Expression of its Global Ambition"; Eisenstadt, "Testing the Limits"; "Iran's Ballistic Missile and Space Launch Programs."

7 Yasser Okbi, "Iran Presents New Ballistic Missile," *Maariv*, September 22, 2017, https://www.maariv.co.il/news/world/Article-600116.

8 Eisenstadt, "Testing the Limits."

9 "Iran's Ballistic Missile and Space Launch Programs."

10 Hook, "Transcript: Iran's Missile Proliferation: A Conversation with Special Envoy Brian Hook"; Farzin Nadimi, "Iran Seeks to Strengthen Its Deterrence by Showing Its Missile Force," *Policy Watch* 2512, Washington Institute for Near East Policy, October 18, 2015, https://bit.ly/2UEnSyo.

11 "Commander of Revolutionary Guard: A Range of 2,000 km, which Covers the Deployment of American Forces, is Currently Sufficient for Us," November 5, 2017, MEMRI, http://www.memri.org.il/cgi-webaxy/item?4548.

12 Eisenstadt, "Testing the Limits"; Nadimi, "Iran Seeks to Strengthen Its Deterrence by Showing Its Missile Force"; Nadimi, "Iran's Continued Push for a Nuclear-Ready Missile Capability."

13 Eisenstadt, "Testing the Limits."

14 *A Look at Iran*, Israel Intelligence Heritage & Commemoration Center, September 20, 2018 – October 7, 2018, https://bit.ly/2UHbnCj.

15 "Commander of the Air Force: Iranians Fired 32 Rockets at Golan," *Haaretz*, May 22, 2018, https://www.haaretz.co.il/news/politics/1.6110664; "After Rocket Fire toward Israel: IDF Attacks Iranian Targets in Syria," *Walla News*, January 21, 2019, https://news.walla.co.il/item/3214357.