Iran's Military Capability: The Structure and Strength of Forces

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ABSTRACT *Economic upheaval in the post-revolutionary period, its ideological concerns, the lessons of the war with Iraq and the drive to assert regional dominance have shaped Iran's emerging military doctrine. This research intends to determine Iran's military strength, relying on a particular formula that assesses a number of factors, including military budget, manpower, army assets, ballistic missile arsenal, proxy forces, and cyberwarfare capability. The research assumes that Iran's arsenal is very limited and somewhat antiquated, more suitable for defensive rather than offensive operations. The second objective of the research is to address the possible strategic consequences of Iran rebuilding its military capabilities on regional security. The article assumes that Iran will likely be judged by its intentions rather than its actions, meaning that if its rhetoric is offensive, then it is likely to be judged as a threat.*

Theoretical Framework

The realist theory of international relations defines the concept of 'power' in one connotation: military power. Traditionally, realism places a high value on states' reliance primarily on military force for maintaining their independence. It was based on this definition that the states with strong military power were labelled "Great Powers;" according to realism, these states are playing the game of international politics. Thucydides (460s-390s BCE), the intellectual forefather of realism, claimed that "the strong do what they can and the weak suffer what they must."[1] Similarly, John Mearsheimer, the prominent contemporary realist scholar notes, "Power is the currency of great power politics, and states compete for it among themselves. What money is to economics, power is to international relations."[2] Realists view power largely in military terms. Mearsheimer's emphasis on military force is relatively explicit: "In international politics… a state's effective power is ultimately a function of its military forces… The balance of power is largely synonymous with the balance of military power. I define power largely in military terms because offensive realism emphasizes that force is the ultima ratio of international politics."[3] Other real-

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ists refer to military capability as a "central force to international politics," "a capacity to wage war," and "the ultimate form of power." Even those who oppose this definition and criticize the emphasis on military power agree that military power dominates other forms of power.[4]

Kenneth Waltz, theorist and founding father of neo-realism, argues that international system is anarchic in the sense that no single player governs the system. Thus, the pursuit of power is necessary to preserve a state's self-security. According to Waltz, national actors do not trust each other and strive to make themselves strong and independent from all external constraints. Thus, maximizing military power is considered to be a "rational response" to the existential predicaments of an anarchic system. According to Waltz, "strategic interdependence and the absence of morality" in the anarchic system mean that each player, if it desires to be effective, must maximize its military power.[5]

Although some scholars argue that military power has a restricted utility and is not the ultimate measuring rod today as it was as in the 19th and 20th centuries, the size of the military budgets of the great powers indicates that military capability is still considered the ultimate form of power in world politics. As the Harvard scholar Joseph Nye notes, economic power "simply is not amenable to military force. It is increasingly important in this century, but it would be a mistake to write off the role of military power." According to Nye, it is true that there are situations in which military power is difficult to use, but it remains an essential component of power in world politics. As Nye metaphorically puts it, "military power provides a degree of security that is to order as oxygen is to breathing: little noticed until it becomes scarce, at which point its absence dominates all else."[6]

Iran, like any other player in the anarchical international system, strives to maximize its military power in order to preserve its survival. However, since the country has been under the arms embargo since 1979, it suffers from military disadvantages. To offset the weakness of Iran's military arsenal, the realists in its regime have embarked on different methods, including developing asymmetrical defense capability and relying on proxies dubbed "Forward Defense" to preserve its status as a major military player in the Middle East.

Iran's Military Doctrine

Iran's military capabilities reflect the military doctrine of the Islamic Republic, which has evolved since the 1979 Revolution. As a rule, this military doctrine

derives from theory, historical experience, ideology, and practice. Doctrine generates concepts and principles which form the strategies guiding the organization and the training of Iran's military forces to achieve national security objectives. In 1992, these principles were codified in the regulation of the Iranian Armed Forces, a document which, with some changes, still applies today.[7]

The Iranian military doctrine has two dimensions: ideological-political and military-technical. The ideological-political encompasses a belief in the principle of *velayt al faqih* as an ultimate spiritual-military guide, i.e. the notion of the Islamic Republic as a protector of Islam, notably the *mustazafeen* (the oppressed), and a sense of the duty to export the Islamist revolution. The military-technical part guides the formation of a military force and strategies which fulfill these political goals, and well as the more traditional tasks of safeguarding national independence and territorial integrity.

Impoverished by revolutionary upheaval and the Iran-Iraq war, the Islamic Republic was unable to create a strong conventional military force to project an offensive capability. As a result, the doctrine called for a radical deterrence posture. In other words, the aim was to increase an adversary's cost of attack rather than reducing its own risk through a conventional buildup. To maximize its deterrence capability, Iran has relied on a three-layered asymmetrical approach: the implicit threat of Weapons of Mass Destruction (WMD), irregular naval warfare, and terror attacks on opponents in the region and beyond. Exporting the revolution and projecting Iranian influence abroad was the only offensive component of the doctrine, to be achieved through proxies.

These doctrinal considerations generated a rather unique, bifurcated military structure which boasts a regular military, the *Artesh*, and an irregular military/militia, the Islamic Revolutionary Guard Corps (IRGC). Known in Persian as *Sepah-e Pasdaran-e Enghelab-e Islami*, the Revolutionary Guard is tasked with domestic and external defense. While the *Basij* militia helps to enforce domestic order, the Quds Force (QF), is the foreign operation branch of the Revolutionary Guard, occasionally helped by the *Artesh* and also in charge of several proxy forces established in neighboring countries. The division of labor among the three sections is not clear-cut since some offensive and deterrence functions are shared and some are rotated in an ad hoc manner.

Iran's Military Structure and Strength

In the following sections, we will review Iran's budget and its military assets one by one, employing a quantitative approach to gather both primary and secondary data and information with the objective of determining Iran's military strength.

Iran's Defense Budget and Allocations

Iran's proposed defense budget for fiscal year (FY) 2018-2019 (starting from March 2018) is $10.2 billion, approximately $2 billion less than the country's defense budget in FY 2016-2017. The numbers are based on each dollar equivalent to 40,000 Iranian Rials. (For more info about Iran's Military expenditure see, Graph 1). Of this amount, $2.427 billion is allocated to *Artesh*, $6.684 billion to the Revolutionary Guards, $442.724 million to the Defense Ministry, $424.380 million to the Armed Forces General Staff (AFGS) and $295.120 million to the *Basij* force.[8]

Graph 1: Iran's Military Expenditure per GDP Percentage (2006-2017)
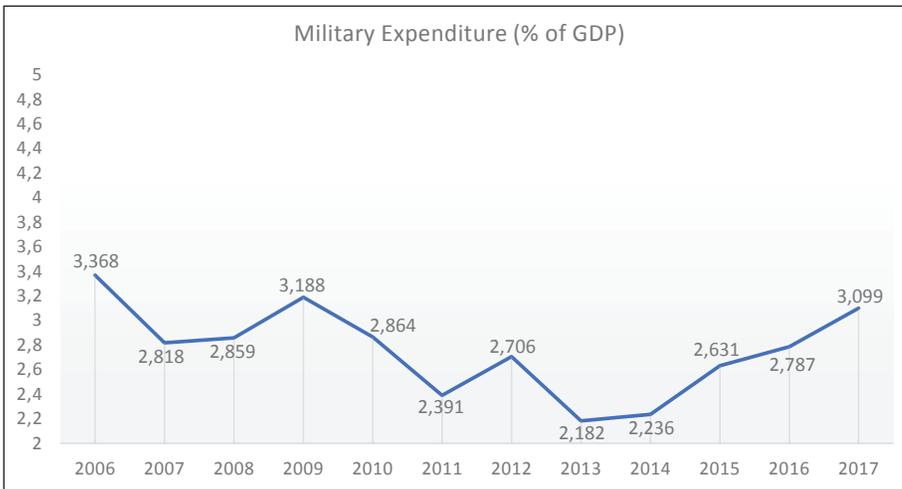
Source: World Bank

Since the 1979 Revolution, a significant portion of Iran's military investments has been in the Revolutionary Guards asymmetric-warfare capabilities, the ballistic-missile project, and an asymmetrical hybrid naval approach subsumed under the so-called Anti-Access/Anti-Denial (A2/AD) systems to address external threats, such as limiting U.S. power-projection and naval operations in the Persian Gulf and creating disruption in critical maritime chokepoints. According to various sources, the Revolutionary Guard also has considerable independent income from its economic holdings in Iran and foreign ventures in Iraq, Syria, and Lebanon.[9]

Yet, as assessed by military experts, by 2016 Iran's military strength was "very weak." Iran spent only $550 million on weapons procurement in 2015. According to Iranian military officials, a "refresh" of the country's military could cost approximately $40 billion. To understand how poor the 2018-2019 proposed defense budget is, it is useful to compare Iran's weapons procurement with its regional rivals equipped with a growing level of sophistication in weap-

ons technology. For example, the annual spending of the Gulf Cooperation Council (GCC) states on their military purchases is $98.5 billion, compared to Iran's $10.2 billion. According to the data provided by the U.S. Congressional Research Service (CRS), in the period of 2004 to 2011, the GCC countries purchased $38.5 billion worth of new weapons, roughly 35 times more than the Islamic Republic's of $1.1 billion for the same period. The data released by independent sources researching arms control and disarmament also shows that the GCC countries have a massive lead over the Islamic Republic in their military purchase. According to the Stockholm International Peace Research Institute (SIPRI), "the GCC countries led Iran by approximately 7:1 from 1997 to 2007, almost 10:1 during 2004-2008, nearly 33:1 from 2009 to 2013 and about 27.5:1 between 2007 and 2014."[10]

The arsenal of Iran's ground forces is limited and antiquated, and best suited for defensive war rather than offensive operations

In addition to significantly outspending Iran for decades, the GCC states have access to modern U.S. and EU military technology. According to the SIPRI, the military outlay of Saudi Arabia was twice larger than Iran's military expenditures, and the military outlays of the United Arab Emirates (UAE) was approximately seven times as large as of the Islamic Republic. This gap has widened even further from 2009 to 2014 when the UAE and Saudi Arabia increased their imports of weapons and military technology to 16 and 18 times larger than Iran respectively.[11]

Between October 2010 and October 2014, Saudis ordered $90.435 billion worth of military hardware from the United States. The data released by the SIPRI indicates that in 2015, the Kingdom spent $85.3 billion to advance its military arsenal. According to the same data, Iran's military import in the same period was $10 billion only. The Kingdom's willingness to exacerbate the regional arms race can be best understood by its 2011 decision to spend $30 billion on purchasing modern military jets and helicopters. Included in the deal were four large surface warships, six smaller corvette-class ships and undisclosed number of MH-60R Sikorsky helicopters which are part of an upgrade to the Kingdom's Navy in the Persian Gulf. In late 2015, Riyadh ordered 600 Patriot missiles from the United States worth $5 billion and planned to buy 10 more MH-60R Sikorsky helicopters.[12]

Saudi Arabia signed another multi-billion-dollar military aid package with the United States on May 19, 2017 during President Donald Trump's visit to Riyadh. The Trump Administration sold $1 billion worth the Lockheed Martin-produced Terminal High Altitude Arial Defense (THAAD) missile defense system, in addition to the Command and Control, Battle Management,

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and Communications (C2BMC) software system which the American Missile Defense Agency (MDA) uses to integrate ballistic missile defenses. Moreover, four multi-mission surface combatant ships worth $11.5 billion and an unspecified number of Bradley vehicles and M109 Paladin 155 m howitzers were added. The package also included $1 billion worth of munitions, including armor-piercing Penetrator warheads and Pave way laser-guided bombs. In 2015, the State Department approved the purchase, but President Obama had suspended out of concern for Iran.[13]

The Arab Gulf states also enjoy access to superior U.S. Command, Control, Communications, Computer, and Battle Management capabilities (C4I/BM) in addition to its training, Intelligence, Surveillance, and Reconnaissance (ISR) systems. Because of American C4I/BM, the GCC states face no technological risks when choosing combat systems, while Iran faces risks in performance, delivery delays, and unexpected costs in its self-produced systems.[14]

Iran's Army Assets (*Artesh* and the IRGC)

Manpower

With a total of 545,000 active and 650,000 reserved armed personnel, Iran is currently ranked the 21st most powerful country in the world (out of 133). According to Iran's military sources, the number of active personnel in the Iranian regular army (*Artesh*) is 420,000. As shown in Table 1, of this total, 350,000 personnel comprise the ground force (*Niroye Zamini Artesh*), 52,000 the air force (*Niroye Havai Artesh*), and 18,000 the navy (*Niroye Daryayi Artesh*). The Revolutionary Guard is about 125,000 strong and divided into five separate forces: the IRGC ground force (*Niroye Zamini Sepah*), the IRGC Air Force (*Niroye Havai Sepah*), the IRGC Navy (*Niroye Daryayi Sepah*), the Quds Force (*Sepah Ghods*), and the *Basij* paramilitary force.[15]

The exact number of armaments by force is hard to estimate, as different sources, including Iran's military statistics as well as global military institutions, namely SIPRI and Global Fire Power, provide different numbers. This research uses Iran's military sources, although most of the time, the data does not list separate numbers for *Artesh* and the Revolutionary Guard.

The arsenal of Iran's ground forces is limited and antiquated, and best suited for defensive war (i.e. invasion) rather than offensive operations. It lacks large numbers of modern tanks and infantry fighting vehicles, relying mostly on outdated systems. According to Iran's military sources, Iran's ground forces

have 1,616 combat tanks and 1,315 armored fighting vehicles, 320 self-pro-
pelled artillery, 2,078 towed artillery and 1,474 rocket projectors (for more
detail see Table 2 of the appendix).[16]

Proxy Groups

Having failed to project its influence abroad using its own military forces –an
offensive component of its military doctrine– due to its weak conventional
military force, Iran decided to achieve this goal through proxies.

Iran's support of non-state proxy groups in the Middle East is not only a matter
of revolutionary ideology, they are an essential part of Iran's security. Relations
with proxy groups provide Tehran with security benefits including assistance
with countering foreign intelligence threats, intelligence sharing, and count-
er-terrorism, in addition to enabling the country to project its power beyond
its borders.[17]

As the oldest and key among Iran's proxy groups, Hezbollah is the strongest
political actor in Lebanon and the most powerful military force in the Levant,
with approximately 45,000 fighters taking orders directly from Tehran. Iran's
relationship with Hezbollah has enabled it to gain intelligence and to deter
Israel and the United States. Since its inception, the group has been fighting
Israel on behalf of the Islamic Republic, and since September 30, 2012, it has
been fighting in Syria to protect the Bashar al-Assad regime. The group is ded-
icated to implementing Iran's ideological system.[18]

The U.S. invasion of Iraq in 2003 gave Iran an opportunity to expand its influ-
ence. The post-Saddam political disorder enabled Iran to increase its efforts to
recruit more Shia militias and to strengthen reliable, pro-Iran Shia militants in
Iraq in order to further its strategic interests. The Ramadan base of the Quds
Force located in Kermanshah province in the west of Iran provides training,
weapons, and logistical as well as financial support to the Iraqi proxies.[19]

Among the prominent Iraqi groups which act as Iran's proxies are al-Hashd
al-Shaabi (The Popular Mobilization Forces or PMF), the Badr Organization,
Asa'ib Ahl al-Haq (AAH), Kata'ib Hezbollah (KH), Harakat Hezbollah al-Nu-
jaba (HHN), and Kata'ib Sayyid al-Shuhada (KSS). The PMF, formed on June
15, 2014, is composed of some 40 militia groups, with approximately 100,000-
120,000 mainly Shia fighters. The second major Iranian-backed paramilitary
group in Iraq is the Badr Organization, which was formed in 1982 by Ayatollah
Sayyed Mohammed Baqir al-Hakim and currently has approximately 20,000
fighters headed by Hadi al-Amiri.[20]

The AAH, also known as the Khazali Network, was founded in Iraq in January
2006 by Qais al-Khazali, who was recruited by Iranian Major General Qassem

Full-size replicas of each of Iran's space rockets and ballistic missiles, i.e. Shahab-3, are displayed in the grounds of the Museum of Holy Defense and Spreading the Culture of Resistance on February 6, 2014, in Tehran, Iran.

SCOTT PETERSON / Getty Images

Suleimani to form the group; it currently has 10,000 fighters. Kata'ib Hezbollah or the Hezbollah Brigades, with its front group Saraya al-Difa' ash-Sha'abi, is another Iraqi Shia paramilitary group supported by Iran. The group is an offshoot of the Mahdi Army backed by radical Iraqi cleric Muqtada al-Sadr, though it is now an entirely separate entity.[21]

The HHN, also known as the Movement of the Noble Ones, formed in 2013 and is headed by Akram al-Kaabi. The group has approximately 10,000 fighters and some military units including Liwa al-Hamad (al-Hamad Brigade), Liwa Ammar ibn Yasir (Ammar ibn Yasir Brigade) and Liwa al-Imam al-Hasan al-Mojtaba. The group formed the "Golan Liberation Brigade" in 2017, with the objective of taking control of the Israeli-held Syrian Golan Heights. KSS, another Iraqi paramilitary group fighting in Iraq and Syria on behalf of the Revolutionary Guards, was formed in May 2013 and consists of approximately 1,000 Iraqi Shia fighters headed by Abu Mustafa al-Sheibani.[22]

Just as it had done in Lebanon and Iraq, the Revolutionary Guard created proxy groups in Syria to carry out offensive operations in order to defeat rebel groups fighting against Bashar al-Assad's regime and to create another stronghold on Israel's borders.[23] These include the Syrian Basij and the New Syrian Force (NSF) known as Popular Defense, the National Defense Forces (NDF), Liwa al-Quds or the Jerusalem Brigade, the Syrian Resistance (Al Moghavemat Al Soriah), the Baath Battalions (aka the Ba'ath Battalions), the Syrian Social Nationalist Party (SSNP) and the Popular Front for the Liberation of Palestine-General

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Command (PFLP-GC). Proxies include the Liwa Abu Fadl al-Abbas (LAFA), the Afghani Fatemiyoun Brigade (AFB), Pakistani Zeinabiouyn Brigade (PZB), Kataib Hezbollah, Saraya al-Khorasani, and the Liwa Zulfiqar Brigade (LZB).[24]

LAFA has become the most important Iranian proxy in Syria with 10,000 fighters headed by Fadel Subhi, also known as Abu Hajar. First appearing in 2012, LAFA is made-up of a mixture of a small number of native Syrian Shias with a majority of foreign Shia Muslim fighters. The Afghani Fatemiyoun Brigade, or 'Hezbollah Afghanistan,' which is an Afghan volunteer Shia militia, was formed in 2014 by Alireza Tavassoli (known as Abu Hamed) and twenty-five of his friends to back the Assad regime. According to Iranian intelligence sources, Tavassoli managed to mobilize 5,000 Shia Afghan nationals who were already Syrian residents, but subsequent disclosures indicate that AFB fighters are members of the Abouzar Brigade, the Afghan branch of the Quds Force. However, according to the Western intelligence sources, the group has approximately between 12,000-14,000 fighters. The IRGC-QF recruited the members of Abouzar Brigade in exchange for Iranian citizenship for their families. Apart from mobilizing Afghan Shia forces to fight in Syria, this will enable Iran to utilize these forces to further its interest in Afghanistan.[25]

Pakistani Zainabiyoun Brigade, the latecomer Pakistani Shia group is another Iran-backed proxy group fighting in Syria under the command of Seyed Abbas Mousavi. According to the Revolutionary Guards media, PZB formation dates back to the years before the Syrian civil war when the Pakistani government started systemic persecution of Shia minority. Open intelligence sources indicate that al-Mustafa University in Qom –Iran's religious city– is in charge of Pakistani Shia fighters and up to now, it could recruit 5,000 volunteer jihadists according to the IRGC affiliated media. Zainabiyoun fighters are mixed of Pakistani Baluch people and people from the Shia-dominated Parachinar, in the Kurrum district of Federally Administered Tribal Areas (FATA) and Hangu. Initially, they fought as part of the Fatemiyoun Brigade, but overtime with more recruitment from Pakistan, the number of fighters increased and a separate brigade was established.[26]

The next most prominent group in Syria is Saraya al-Khorasani or the "Khorasani Brigades," a group of forces obedient to the Seyyed of Khorasan which

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emerged in 2013 with approximately 3,000 fighters. There are also reports indicating that Iran has recently revived Saudi Hezbollah also known as Hezbollah al-Hejaz, a pro-Iran Shia militant group founded in May 1987, which had formerly operated in Saudi Arabia, Kuwait and Bahrain but had been dismantled in 1997. Altogether, it is estimated that Iran has control over 17 groups with approximately 300,000 paramilitary forces in the region, as shown in Table 8. The Houthis, who are Zaidi Shiite Muslim minority in Yemen, is another armed group that has modest ties to Iran. Partnership with the Houthi rebels provides Iran with an opportunity to strike deep into Saudi Arabia, its main Sunni rival in the region, at a low cost.[27]

The strategy of supporting Shia militias enables Iran not only to project its power in the region, but also to reduce the number of its fatalities in regional conflicts. Furthermore, this strategy enabled Iran to secure a more than a thousand-kilometer-long land corridor connecting Iran to the Mediterranean shores.

Air Force Assets

Iran's air power consists primarily of a number of U.S. aircraft dating from the 1960s and 1970s, and a number of aircraft designed by the Soviet Union (USSR) in the 1970s and 1980s. Therefore, in this respect it is significantly outmatched by its arch rival Saudi Arabia. As shown in Tables 3 and 4, Iran's air force includes 477 aircraft, including both rotary-wing and fixed-wing (helicopter) aircraft across all branches of service (Air Force, Navy, Army). This includes 137 fighter aircraft, 137 attack aircraft, 203 transport aircraft, 79 trainer aircraft, and 129 helicopters, of which 12 are attack helicopters.[28]

Iran's strained relations with the United States, and the embargo on weapon sales pushed by the Washington after the 1979 Revolution, proved to be a huge obstacle for Iran to renew its air power and to access technologies needed to maintain its air force. Therefore, Iran has mostly focused on developing an advanced indigenous military industry to build Unmanned Aerial Vehicles (UAV) and ballistic missiles to sustain its air power.[29]

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Guards to collect intelligence, identify fixed and mobile targets, and, if required, to threaten the naval forces of its rivals including the U.S. Navy in the Persian Gulf. As one analyst notes, "Iran's defense doctrine has led it to develop low-risk, relatively low-cost tools, including missiles and UAVs, which afford it the ability to tackle threats at a distance without putting Iranian lives on the line."[30]

Over the years, Iran has gained a growing capacity to develop and operate various types of unmanned systems, including tactical, midrange and strategic UAVs as shown in Table 5. Iran's military officials credit their UAVs with playing a key role in the victory of the Assad regime in Syria and claim that "Iran is among the world's top 10 UAV producers." However, the country's UAV industry faces a number of limitations, including failure to produce reliable turbojet engines and a lack of satellite-navigation-enabled targeting or control links to expand its drone arsenal, serious flaws in the flight control system software, as well as take-off and landing incidents.[31] Nevertheless, Iran will likely continue to develop its drone arsenal in the near future given the UAVs' multifaceted functions and the role UAVs can play in surveillance and air strikes.

Ballistic Missiles Arsenal

Iran's deterrence strategy and its military doctrine place priority on developing indigenous missile and anti-missile systems.[32] For the military leadership in Iran, the eight-year war with Iraq and Saddam's missile attack on Iranian cities were the best indications that Iran had little in terms of conventional weapons to deter Iraq from launching missile attacks. The conclusion in Tehran was straightforward: Iran needs a powerful deterrent of its own.[33]

However, obtaining a strong deterrence was difficult because of the embargo on weapon sales imposed by the United States. The arms embargo made it difficult for Iran to access the technologies needed to maintain its air force. Similarly, procurement of standard weapons on the black market involved extremely complex arrangements.[34] To compensate for its limited air force assets, Iran invested heavily in domestic manufacturing of ballistic missiles, a project that was part of its vision for "strategic independence." To achieve the goal of strategic independence, the Revolutionary Guard Missile Corps (*Sepah Moshaki*) took the lead.

North Korea initially helped Iran to develop its missile program, but Iran soon set out to change that equation and sought to develop its own independent capabilities. Working alone or in collaborations with other partners including North Korea, Russia, and China, *Sepah Moshaki* gained significant advances in solid propellant technology and multi-stage missile assembly and manufactured a variety of ballistic missiles.[35]

In another article, the author reviewed the entire history of Iran's ballistic missile program, as well as the different types of missiles that Iran produced over the years. These missiles are including Shahab-3, Ghadr 110 and its variants, Emad, Shahab-4, Shahab-5 (Kosar), Shahab-6 (Toqyān), Sejjil, Ashoura, Fajr, and Qiam-1. In this section, I will only review the new additions to the missile arsenal.[36]

Soumar, is a solid-fueled, ground-launched long-range cruise missile with an estimated range of 2,500 km unveiled on March 2015. The missile's design is similar to Russia's Kh-55, and reportedly it possesses "pinpoint accuracy" and is able to hit within 50 meters of its pre-designated target. According to a Western intelligence source, the Soumar "positions Iran among the world's leaders in missile technology." The missile is approximately 6 meters, with a diameter of 20.2, a maximum operating cruise speed range of Mach 0.7, and the warhead weigh of 150-170 kg.[37]

On September 22, 2017 during a military parade, Iran unveiled a new ballistic missile known as Khorramshahr. Named after the city of Khorramshahr in south of Iran, the missile is a two-stage, liquid-propellant Medium Range Ballistic Missile (MRBM) with an estimated range of 2,000 km, capable of carrying multiple warheads up to 1,800 kg. Iranians test fired a Khorramshahr in January 2017, but reportedly the missile only flew approximately 600 miles before exploding. It has a length of 13 m and a launch weight of approximately 19,000-26,000 kg. According to IRGC military reports, the missile has radar-evading capabilities and terminal guidance, but western intelligence sources believe that the missile has a poor accuracy, roughly 1,500 m circular probability of error.[38]

In August 2018, the Revolutionary Guards unveiled two new missiles: the "Fateh Mobin" and the "Fakour," the latest addition to the Fateh-series of short-range tactical ballistic missiles with an estimated range of 1,300 km. On February 2, 2019, the Guards announced the successful test of the Hoveizeh cruise missile with a range of over 1,350 km. Shortly after, on February 7, 2019, the Revolutionary Guards unveiled a new ballistic missile, the Dezful, which has a range of approximately 1,000 km. Farsi media outlets quoted Brig. Gen. Amir Ali Hajizadeh, commander of the Revolutionary Guards' aerospace program, as saying the Revolutionary Guards will continue the missile development and tests and the "plan to carry out more than 50 missile tests each year."[39]

Iran will probably continue to prioritize the development and acquisition of more advanced ballistic missiles in the future and will continue its transition from liquid to solid propelled systems which are more sustainable, primarily because they offer greater self-sufficiency. However, due to the missiles' poor accuracy, Iran may concentrate on improving the accuracy of its missiles

rather than trying to extend the range of its systems. Iranian government officials have recently hinted that they would limit the range of their missiles and focus on improving accuracy. If they succeed, Iran may become a supplier of missile technology and assistance to other nations.[40]

Iranian officials have made no secret about their intention of developing their missile system. For instance, Mohamad Javad Zarif, Iran's Foreign Minister said that, "Iran needs to develop its own defenses." Another official noted that "Iran does not need permission to defend itself and to work on its defense capabilities." Experts believe that "Iran has recently started working on how to counter the missile defense systems in the region." To this end, experts argue, "Iran has been employing salvo tactics in an attempt to complicate certain sectors of its missile defense system, including using diverse launch points and hiding mobile systems, which will allow its army to launch missiles anywhere it wants."[41]

Naval Assets

Iran's army has two separate naval forces, including the *Artesh* Navy (IRIN) responsible for maritime operations outside the Strait of Hormuz, and the Revolutionary Guard Navy, better known as *Neyroye Daryaee Sepah-e Iran* (NEDSA), responsible for maritime operations in the Persian Gulf and the Strait of Hormuz. The total navy assets include 5 frigates, 3 corvettes, 33 submarines, 230 patrol craft, 10 mine warfare vessels, and 5,000 speedboats as shown in Table 7.

Most of Iran's Navy ships are at least 38 years old and much of the force is obsolete. Traditionally, Iran's sea power has been the weakest link compared to its land and air power. Mohammad Reza Pahlavi, the late Shah of Iran, had plans to double the size of the navy by purchasing four modified Spruance-class destroyers developed by the United States for the defense of nuclear aircraft carrier task forces, three American Tang-class (Diesel Fast Attack) submarines, and twelve patrol boats with French MBDA Exocet anti-ship cruise missiles. However, with the Islamic Revolution in 1979 and the theocratic regime's rise to power, the sale was canceled.[42]

Since 2006, Iran has indigenously started producing two Mowj-class frigates able to operate helicopters and Unmanned Aerial Vehicles (UAV) for surveillance and reconnaissance (ISR), as well as over-the-horizon targeting. According to military sources, in 2007, the IRIN's Navy warships were three British made Vosper Mark V class frigates known in Iran as Alvand class, ten

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To compensate for its conventional weapons weakness, Iran has indigenously developed large offensive and defensive cyber capabilities, enabling it to attack various targets and to repel cyberattacks from its adversaries

French-made La Combattante II-class corvettes known in Iran as Sina fast attack missile boat equipped with Chinese Ying Ji C-802 anti-ship missiles. The Shah purchased 12 La Combattante in 1974, officially named them Kaman in Iran navy service, but when the new regime started locally producing the Iranian version, renamed them Sina. Additionally, the IRIN possess three Russian-made diesel-electric Kilo-class attack submarines and fourteen Ghadir-class midget submarines built based on North Korean Yono-class submarine.[43] The IRIN has ordered production of two new Jamaran-class frigates to be armed with anti-air missiles, torpedoes, a 76 mm gun, C-704 or C-802 missiles, and three 20 mm and 40 mm cannon systems. According to IRIN sources, four more Jamaran Moudge-class frigates and several Sina fast-attack craft are also under construction to replace the French-made Combattantes.[44]

However, the IRIN needs major renovation and modernization due to the impositions of the U.S. embargo since the country's 1979 Revolution. The Guard's NEDSA, under the command of Rear Admiral Ali Fadlavi, is in a better position compared to IRIN. NEDSA arsenal includes several Chinese-made Houdong coastal patrol boats armed with Ghader anti-ship missiles; between 3,000 to 5,000 speedboats armed with 107 mm rocket launchers and RPGs; forty-six smaller patrol ships armed with anti-ship torpedoes and other small crafts.[45]

Economic limitations and doctrinal considerations explain the rather peculiar structure of the fleet. Iran's location in the Straits of Hormuz renders it vulnerable to naval operations by hostile forces, notably the United States. Lacking in resources, Iran settled on passive defense and developed a 20-year plan known as the Strategic Triangle Maritime, Irregular Warfare (STMIW), and the so-called A2/AD strategy to prevent the U.S. from destroying Iran's critical targets. Defined as "war-fighting strategies focused on preventing an opponent from operating military forces near, into, or within a contested region," A2/AD has been used mainly in naval warfare.[46]

Derived from the lessons of Iran's efforts to mine the Straits of Hurmuz during the Iran-Iraq war, the STMIW's top priority is to slow down the U.S. navy's access to the Straits of Hormuz and hamper its power-projecting naval operations in the region.[47] The strategy would give Iran an opportunity to disrupt Bab al-Mandab and the Persian Gulf, two of the world's most heavily

trafficked commerce and oil trade choke points. The A2/AD capabilities are including land and sea-based anti-ship cruise missiles, as well as the use of naval mines, which covertly can be deployed by small commercial vessels. The plan seeks to use fast-attack boats best suited for swarming operations or suicide attacks, such as those used against the USS Cole during the Tanker War in 1987.[48]

Unable to match the conventional naval power of the United States, the regular navy delegated most of the A2/AD mission to the NEDSA, which developed asymmetrical warfare tactics. Extending the range of its missiles, mining, speed boat "swarming," suicide boat attacks, and extending the range of its submarines were among NEDSA's tactics. Perpetrating terror attacks on the U.S. naval facilities in the region is another tactic.[49]

Cyberwarfare Capability

To compensate for its conventional weapons weakness, Iran has indigenously developed large offensive and defensive cyber capabilities, enabling it to attack various targets and to repel cyberattacks from its adversaries.[50]From the defensive perspective, Iran's first objective is to create a technological shield that will protect sensitive information against cyberspace attacks such as the *Stuxnet* and *Flame,* which damaged its nuclear equipment, or collected intelligence and stole sensitive data from the computers of senior Iranian officials for its controllers.[51]

Being subject to numerous major cyberattacks, Iran decided to devote more resources to developing and acquiring technologies and to training cyber-security experts. To enhance its cybersecurity knowledge, Iran established a widespread network of research centers dealing with information security, information technology and computer engineering. According to a report issued by the Carnegie Endowment for International Peace, "Iran indigenously developed cyber capabilities, arising from local universities and hacking communities."[52]

The Technology Cooperation Officer, operating under the office of the president, and the Iran Telecommunications Research Center, belonging to the Ministry of Information and Communications, established training programs, organized research teams in the fields of information security, and initiated advanced information technology research projects.[53]

From an offensive point of view, cyberwarfare is a key part of Iran's doctrine of asymmetrical warfare, and an effective tool for inflicting damage on adversaries with superior military and technological capabilities. Seen within this context, Iran's objective is to stop cyberspace operations by its opponents who are trying to organize anti-regime activities.

Iran's enhancement of its conventional arsenal could temper Iran's policies by rectifying the region's conventional military imbalance, thus diminishing Iran's reliance on non-state actors

Tellingly, the IRGC's cybersecurity capabilities make the country one of the most advanced nations in the field. According to a report issued by the Institute for National Security Studies (INSS), "the IRGC is able to block computer communications networks, to install malicious codes in counterfeit computer software, penetrating computers to gather intelligence, as well as developing technologies with delayed action mechanisms or mechanisms connected to control servers." According to the same report, the Revolutionary Guards sponsors hacker groups that operate against the enemies of the Islamic Republic abroad. The use of hacker groups outside of Iran allows the Revolutionary Guards to maintain plausible deniability about its involvement in cybercrimes and cyberspace warfare.[54]

To create a multi-dimensional cyber-defense system, Iran has significantly upgraded its cyber techniques and created an isolated domestic intranet in order to keep close control over content in cyberspace. To prevent penetration by Trojan horses which might be attached to products purchased abroad, the Iranian cyber authorities have increased their investment in developing indigenous cyber-defense mechanisms in addition to establishing training programs, routine exercises and inspections among civilian and security institutions.[55]

The scope and success of the cyberattacks attributed to Iran over recent years show its advanced capabilities. The Islamic Republic has conducted several damaging cyberattacks. The hackers linked to the Revolutionary Guards started taking over several websites and defaced them. There are a number of prominent Iranian groups engaging in cybersecurity, including Iran Hackers Sabotage "with the aim of showing the world that Iranian hackers have something to say in the worldwide security." The Ashiyane Digital Security Team, another prominent Iranian group, ran a website that offered free hacking tools and provided security services. During the Israeli incursion into Gaza in 2009, the group reportedly defaced 500 websites and in 2010, the group defaced 1,000 sites in the U.S., the UK, and France in retaliation for their anti-Iranian messages. According to Behrouz Kamalian, the Ashiyane leader, the group worked with Iran's military, but "operated independently and spontaneously."[56]

The Iranian Cyber Army (ICA) is another prominent group which runs a cyberwarfare program with an estimated 2,400 experts. Launched in 2005, the group has conducted several cyberattacks against global websites, including *Twitter* in 2009. Other targets include the *Voice of America* TV channel in

The photos show different sections of the Iranian security forces including Basij, riot police and the navy.

BEHROUZ MEHRI / AFP / Getty Images

HENGHAMEH FAHIMI / AFP / Getty Images

2011, in response to the U.S. support of Iran's Green movement.[57] Next in line is a group which calls itself the 'Cutting Sword of Justice,' which has a record of launching cyberattacks –described as the most destructive acts of computer sabotage– against the world's most valuable company, Saudi Aramco. As a result of the attack, the data on three-quarters of Aramco's computers were erased; the group replaced all of them with an image of a burning U.S. flag.[58]

Research published by the cybersecurity firm *FireEye* on December 7, 2017, indicates that Iran has been engaged in cyber espionage, unleashing multiple waves of computer-crippling malware across the globe. Identified by *FireEye*, two groups named Advanced Persistent Threat 33 (APT 33) and Advanced Persistent Threat 34 (APT 34) have been able to penetrate computers in the petrochemical, defense, and aerospace industries around the globe, including the United States, Saudi Arabia, and South Korea. The U.S. Federal Bureau of Investigation (FBI) concluded that from 2012 to 2013, Iran's cyberattacks "locked

In other words, the new situation could urge the regional countries, including Israel, Turkey, Egypt, and Saudi Arabia to enter a new arms race to ensure that they would keep Qualitative Military Edge over Iran

hundreds of thousands of banking customers out of accounts for long periods of time and resulted in tens of millions of costs to remediate."[59]

Iran is expected to continue to advance its cyber capability for possible engagement in cyber and electronic warfare to defeat its adversaries, notably their missile defense systems. Trump's new anti-Iranian campaign will give a new reason for the Iranians to invest more in the country's cybersecurity arena. As Brigadier General Gholamreza Jalali, head of Iran's Passive Defense Organization recently noted, cyber-defense can serve as a guarantee for the country's independence and security. Jalali stated that "in cyberspace, we encounter a combination of opportunities and threats. We cannot merely focus on opportunities but should adopt a more comprehensive outlook on this field through identifying threats. On the other hand, we must focus on the localization of infrastructures in the field of technology."[60]

Strategic Consequences of Rebuilding Iran's Military Capabilities

Iran's nuclear agreement (JCPOA) signed on July 14, 2015, between the P5+1 powers (the UN Security Council's five permanent members China, France, Russia, the United Kingdom, and the United States, plus Germany) and Iran promised to end the UN arms embargo on Iran. The JCPOA, implemented on January 16, 2016, permits Iran to import heavy weaponry after five years (2020) and lifts restrictions on ballistic missile trade after eight years (2023). The UN arms embargo was initially adopted in December 2006 by U.N. Security Council Resolution 1737 and later by Resolution 1929 adopted on June 9, 2010, with the intention of bringing Iran into compliance with its obligations under the Nuclear Non-Proliferation (NPT) Treaty. The embargo included items which were used in the production of major conventional weapons, particularly missiles and combat aircraft.[61] Should the JCPOA be preserved, and restrictions on arms purchase lifted, Iran will be able to revitalize its aging combat aircraft. The question arises as to whether or not Iran's development of its conventional military capacity would have a strategic impact on the regional countries and on the U.S. interests in the Middle East.

Iran's enhancement of its conventional arsenal would likely deepen concerns in Washington and in the region. But it could also temper Iran's policies by rectifying the region's conventional military imbalance, thus diminishing Iran's reliance on non-state actors. As mentioned earlier, Iran's strategy of supporting

proxies was first driven by its weak conventional military force. Consequently, "Iran's strengthening its military capability could diminish its reliance on non-state actors for deterring an attack on its soil," as one analyst noted.[62]

Perhaps Tehran's approach to the conventional military capability can be best understood in the context of its recent history. Iran has no history of initiating a war with its neighbors in the last 150 years. Not to mention that Iran has been victim of occupations, called by military strategists as Iran's "modern tradition of defeat." Thus, any new arms procurement will be likely for defensive purposes. Ofira Seliktar, an intelligence analyst at Gratz College notes, "an advanced offensive military capability is likely to be perceived by Iranians as an insurance policy against any potential attack on Iran by its adversaries."[63]

With that said, it is likely that lifting of restraints on the conventional arms trade would increase the threat some other states in the region perceive from Iran. In other words, an Iranian advanced military capability may embolden it to risk further confrontation with the United States and its regional allies, notably Israel and Saudi Arabia. Matthew Bunn, a professor of Practice at Harvard University, believes that "this is all the more reason to try to build more cooperative relationships in the region and some form of regional security dialogue before this occurs."[64]

Still, Iran's defense budget is a fraction of those of the Arab states of the Gulf, as noted above. And while Russia and China may be willing to sell arms to Iran, they are unlikely to offer the most modern and effective offensive weaponry as the record of arms dealing between these countries suggests. It is also important to note that the consequences of Iran's developing its conventional military capacity depend largely on Tehran's policies. Iran is mostly judged by its intentions rather than its actions. In other words, even if Iran's rebuilding its military arsenal is for defensive purposes, if its rhetoric is offensive, then it's likely to be regarded as a threat. As an Israeli commentator notes, "If Iran continues to threaten other countries, then any weapons purchase will likely be interpreted as Iran stocking weapons to challenge its neighbors even if some of the weapons are for defensive purposes."[65]

According to Meir Javedanfar, if the regional countries continue to judge Iran by the outlook of the leadership in Tehran, it will be unlikely that any country including Russia or China would sell Iran any weapons that could enhance its threat to its neighbors, especially since these two powers have a good relationship with Iran's adversaries, including Israel and Saudi Arabia.[66] It is further possible that if Iran restarts developing its conventional military capacity, the result will be that world powers, including the United States and European countries, will flood the Middle East with more advanced weaponry. Although "the United States may publicly complain, and Europeans may stay

Given that Iran's Arab neighbors enjoy cutting-edge American anti-missile technology, and Israel has developed its own highly successful anti-ballistic missile system, the odds are not in favor of Iran

silent, both will seize upon it as a pretext to flood the region with more advanced weaponry. Then the question won't be what Iran can buy, but what it can afford."[67]

In other words, the new situation could urge the regional countries, including Israel, Turkey, Egypt, and Saudi Arabia to enter a new arms race to ensure that they would keep Qualitative Military Edge (QME) over Iran. As Robert Jervis maintains, "A large build-up presumably would be disturbing, and this might restrain Iran at least a bit since other countries are probably better able to engage in arms competition if need be."[68] As a matter of fact, American defense companies are already signing a broad array of foreign arms agreements that will support this new push, a reality that has set the alarm bells ringing in Tehran. When the arms embargo is lifted, Iran will have the money and legal pathway to purchase sophisticated arms systems and to bolster its military capabilities.[69]

In a hypothetical situation, Iran might wish to obtain strategic arms possibly from Russia and China to build up its own defenses, but it may not request such arms due to the fear that the sellers would insist on certain conditions for the sale of arms which might compromise Iran's stance toward certain issues. For instance, if Russia and China insist on Iran's changing its perception towards Israel or Saudi Arabia, it will be highly unlikely for Iran to accept such a condition.

Some scholars doubt that the lifting of the arms embargo will make much difference to Iran conventionally, due largely to the fact that Tehran is more concerned with defense and control domestically. For instance, Shahram Chubin argues that since most of Iran's military hardware is locally produced, there is not much pressure or demand for a new air force or major systems requiring a lifting of the embargo. According to Chubin, "it is difficult to believe that the Iranians are infatuated by military power or weapons systems. They have a practical view of war and strategy and are unlikely to become more adventurous even with more or better arms."[70]

Conclusion

Based only on conventional war-making capability across land, sea, and air, as measured by 50 indicators, the authoritative Global Firepower GFR - PowerIn-

dex (PwIndx) ranks Iran 21st out of 136 countries in military strength, despite its large population. Turkey with a comparable population is ranked 8th and Israel, with a tiny demographic, is ranked 15th.

The above data explains the low score. Iran's conventional power is weak and dependent on relatively obsolete weapons which have not been radically modernized since the Iran-Iraq war. Iran's "strategic independence" in arms production has not been adequate to fill the gap and its armaments crucially consist mostly of low quality equipment. As a result, Iran has little capacity to project outward power and its defensive capacity is likewise compromised.

To compensate for this weakness, Iran has invested heavily in missile defenses, producing a wide array of ballistic missiles. However, this capability has not been war-tested; on the few occasions in which missiles were used, including the bombing of ISIS facilities in Syria in 2017, they performed poorly.[71] Given that Iran's Arab neighbors enjoy cutting-edge American anti-missile technology, and Israel has developed its own highly successful anti-ballistic missile system, the odds are not in favor of Iran.

Iran has shown more proficiency in asymmetrical warfare, a core component of its strategic doctrine. Still, the extent to which this capability can compensate for its lack of conventional weapons is not clear. Naval experts claim that the swarming tactics and even suicide attacks on large naval vessels cannot be sustained for more than a few days. Also, this type of operation can trigger swift retaliation on the Iranian oil facilities along the Straits of Hormuz. For instance, when the Iranian navy mined the Straits during the tankers war on April 14, 1988, the American navy responded with Operation Praying Mantis, which shelled Iran's navy and waters, including the Rakhsh and Sirri oil platforms.

Iran's ability to destabilize the region using terror attacks and the QF-controlled proxies is arguably its most successful asset. But this type of warfare is limited to territories with Shia or quasi-Shia populations such as Lebanon, Syria, Iraq, and Yemen. It has also provoked a strong blow back from Saudi Arabia and other Sunni countries. Consequentially, the United States has declared the Revolutionary Guard and many of its proxies to be terror groups, a designation which could trigger considerable sanctions.

With regard to Iran's rebuilding its conventional military capability after the arms embargo is lifted, it should be noted that Iran will likely be judged by its intentions rather than its actions. If the Islamic Republic's rhetoric is offensive, then it is likely to be judged as a threat and as a result, world powers may not be willing to go through with any arms deals that would enable Iran to regain its military strength. ◼

Appendix

Table 1: Man Power

Total Population	Manpower Available	Fit for Service	Reaching Military Age	Total Military Personnel	Total Active Personnel	Total Reserve Personnel
81,553,878	47,000,000	39,570,000	1,400,000	934,000	545,000	650,000

IRGC & *Artesh*	Total Personnel	Ground Force Personnel	Air Force Personnel	Navy Force Personnel		
Artesh	420,000	350,000	52,000	18,000		
Revolutionary Guards	125,000	100,000	7,000	18,000		

Table 2: Ground Forces Assets

Artillery	Tank	In service of
Mesbah 1	Zolfaghar (150 vehicles)	*Artesh* & IRGC
Misagh 2	Samsam (M-60)	*Artesh*
GC-45 howitzer	Mobarez	*Artesh*
122 mm howitzer 2A18 (D-30)	T 72 (480 vehicles)	*Artesh*
130 mm towed field gun M1954 (M-46)	T 55	*Artesh*
Type 60 122 mm towed gun	T 62 (75 vehicles)	*Artesh*
122 mm HADID HM 20 rocket launcher system	Safir 74 (540 vehicles)	IRGC
The Fajr-3 Artillery Rocket (multiple-launch artillery rocket)	Tiam	*Artesh* & IRGC
Falagh 1 & 2 Rockets	M 47 & 48 Patton (168 vehicles)	*Artesh*
The Fajr-5 artillery rocket	M 60 Patton (150 vehicles)	*Artesh*
Raad-1 Iranian self-propelled howitzer	Mobarez	IRGC
M114 155 mm howitzer	Sabalan	IRGC
M115 203 mm howitzer	Chieftain (100 vehicles)	*Artesh*
M109 howitzer	Falagh	IRGC
M107 175 mm self-propelled gun	Shahram	*Artesh*
M170 Artillery Koksan	Scorpion	*Artesh*
M110 self-propelled howitzer	Tosan (80 vehicle)	*Artesh*
105 mm M2A1 howitzer (later redesignated M101A1)	Sarir	IRGC
122 mm howitzer D-30 (GRAU index 2A18)	Boragh	IRGC
122 mm D-74 towed gun is a Soviet built gun	Karar	*Artesh*
152 mm gun-howitzer M1955 (D 20)		
M-46 130 mm Field Gun		
The GC-45 155 mm howitzer		
HM 41 Iranian howitzer		
2S1 Gvozdika Soviet self-propelled howitzer		
The M-1978 (Koksan) 170 mm self-propelled (SP) gun of North Korean design		

Table 3: Air Force Assets (Aircraft/Helicopter)

Aircraft	Helicopter
Saegheh (F-5 Tiger 2)	Shahed 278
Azarakhsh	Shahed 285
Ghaher	Toofan 1-2
Grumman F-14 Tomcat	Shahed 216
Mig 29 (Fulcrum)	Homa
Dassault Mirage F1	Panha Shabaviz 206-1
Chengdu J-7	Sorena
McDonnell Douglas F-4 Phantom II	Arsalan
Northrop F-5	Tiztak
Sukhoi Su-24	Mil Mi-17
Sukhoi Su-25	Saba 248
Shafagh (Borhan)	H 209
Ghaher 313	UH 1
Kawsar	Bell 212
Beechcraft Bonanza	Bell 206 (OH 58A)
Embraer EMB 314 Super Tucano	AB 212
Fokker F27	Bell 214
Antonov An-74	CH 47 Chinook
Lockheed C-130 Hercules	Bell AH-1 SuperCobra
Lockheed P-3 Orion	The Sikorsky SH-3 Sea King
Ilyushin Il-76	CH-53 Sea Stallion

Table 4: Air Force Assets (Air Defense System/Radar System)

Air Defense System (ADS)	ADS Type	Radar System
Bavar 373	Air Defense System	Ghadir
3rd Khordad	Air Defense System	Matla' al-Fajr
Tabas	Air Defense System	Najm
Sayyad 1, 2, 3, 4	Air Defense System	Hadi
Raad	Air Defense System	Kavosh
Mersad	Air Defense System	Samavat Optic
ZPU-4	Anti-air Artillery	Bashir
ZU 23	Anti-air Artillery	Kashf
Samavat (Oerlikon 35 mm)	Towed Anti-aircraft Twin-cannon Skyguard Radar	Dargiri
Shahab Sagheb (Chinese HQ-7)	Surface-to-air Missile	Gama
Ya Zahra	Air Defense System	Kasta
9th Herz	Air Defense System	Kolchuga
S-300	Surface-to-air Missile	JY-14
Raytheon MIM-23 Hawk	Surface-to-air Missile	
RIM-66 Standard Missile	Surface-to-surface Surface-to-air Defense Missile	
Ghareh	Surface-to-air Missile	
S-200	Surface-to-air Missile Defense System	
Rapier Missile	Surface-to-air Missile	
Tigercat	Surface-to-air Missile	
SA-22 Greyhound (Pantsyr S1)	Surface-to-air Missile	
Tor missile system	Surface-to-air Missile	
KS-19/Sa'ir 100 mm Anti-Aircraft Guns	Anti-air Artillery	
ZSU-23-4	Self-propelled Anti-aircraft Weapon	
ZSU-57-2	Self-propelled Anti-aircraft Weapon	
MIM-23 Hawk	Surface-to-air Missile	
SM-1	Surface-to-air Missile	
SA-2 Dvina/Sayyad-1	Surface-to-air Missile	
SA-6 Gainful	Surface-to-air Missile	
SA-5 Gammon	Surface-to-air Missile	
Talaash	Air Defense System	
Qaem	Man-portable Air-defense Systems	
RBS-70	Man-portable Air-defense Systems	
SA-7 Grail	Man-portable Air-defense Systems	
SA-14 Gremlin	Man-portable Air-defense Systems	
SA-16 Gimlet	Man-portable Air-defense Systems	
SA-18 Grouse	Man-portable Air-defense Systems	

Table 5: Air Force Assets (Unmanned Aerial Vehicle UAV)

UAV	Length	Wingspan	Height	Maximum Takeoff Weight	Max Flight Endurance	Max Flight Speed	Max Flight Distance	Max Flight Height	Aircraft Engine Type	Powerplant	Power	Owner
Karrar	4 m	3.4 m	0.8 m	420 kg	1 hour	900 km/h	1000 km	3,300 m	turbojet	Toloue-4	3.7 kN	IRGC
Fotros	8.25 m	49 m	1.86 m	3,500 kg	30 hours	400 km/h	2000 km	9,000 m	piston	unknown	unknown	IRGC
Shahed129	7.8 m	16 m	3.1 m	450 kg	24 hours	170 km/h	1700 km	9,000 m	piston	unknown	unknown	IRGC
Sayeh	1.19 m	3.05		20 kg	20 hours	126 km/h	5 km	4,772 m	piston		0.97 kW	IRGC
Hamaseh	2.8 m	4.1 m	1.42 m	400 kg	11 hours	180 km/h	500 km	7,100 m	piston	unknown	unknown	IRGC
Mohajer-4	3.64 m	5.30 m	1 m	175 kg	3-5 hours	200 km/h	150 km	3,350 m	piston	WAE-342	25 hp	Artesh
Faraz-2	mini	mini	mini	3 kg	30 min	110 km/h	10 km	3,000 m	electric	–	–	IRGC
Yasir	1.78 m	2.36 m	0.45 m	25 kg	8-10 hours	100 km/h	250 km	4,100 m	piston	unknown	unknown	Artesh
Sadegh (Allegiant-1)		4 m		242 kg	6 hours	200 km/h	200 km	4,500 m				IRGC
Ababil	3.74 m	5.3 m	0.65 m	210 kg	8 hours	200 km/h	150 km	4,572 m	piston	unknown	Unknown	IRGC
Saegheh (Simorgh) (RQ-170)	4.5 m	26 m	1.82 m	3,900 kg	16 hours	250 km/h	250 km	3,300 m	The original version uses General Electric TF34 turbofan engine	TF34	The original version produces 9,275lbs of thrust	IRGC
Sarir H-110	2.8 m	3.5 m	0.9 m	80 kg	120 km/h	150 km/h	200 km	5,000 m	piston	unknown	unknown	IRGC
Raad-85 (Suicide drone)	unknown	unknown	unknown	unknown	unknown	250 km/h	100 km	3,500 m	unknown	unknown	unknown	Artesh IRGC
Toofan	unknown	unknown	unknown	unknown	1-2 hour	250 km/h	100 km	4,250 m	unknown	unknown	unknown	Artesh

Table 6: Ballistic Missiles Arsenal

Name	Range	Length	Payload	Propulsion	Diameter	Launch Weight	Warhead	Status
Shahab-3	1,300 km	16.58 m	Single warhead 1800 kg	Single-stage liquid propellant	1.25 or 1.38 m	17,410 kg	Nuclear HE Chemical	Operational
Ghadr 110	1,950 km	15.86 m	700~1,000 kg	Diesel	1.25 m	17,000kg	HE Cluster Nuclear	Operational
Emad	1,700 km	16.65 m	750 kg	Liquid propelled	1.25/1.38 m	19,000 kg	Nuclear Chemical HE Submunitions	Operational
Shahab-4	2,000~4,000 km	25 m	Single warhead, 1,200 kg	Heptyl	1.3/0.88 m	22,000 kg	HE Chemical Nuclear	Unknown
Shahab-5 (Kosar)	4,000~4,300 km (3-stages)	32 m	700~1,000 kg	Solid motor	2.2/1.3 m	Unknown	HE Chemical Nuclear	Unknown
Shahab-6 (Toqyān)	3,000~5,000 km	Unknown	Unknown	Unknown	Unknown	Unknown	HE Chemical Nuclear	Unknown
Sejjil	2,000~2,500 km	17.6 m	two-stage 500~1,000 kg	Solid propellant	1.25 m	23,600 kg	Nuclear	Operational
Ashoura	2,500~3,000 km	19-20+ varies	760-650-550 kg	Solid propellant	1.4 m	23,600 kg	Nuclear	Operational
Fajr	2,000 km	unknown	Multiple	Liquid propelled	2.2/1.3 m	Unknown	Nuclear HE	Operational
Qiam-1	500~1,000 km	10.6 m	500~650 kg	Single-stage liquid propellant	0.88 m	6,155 kg	Nuclear	Operational
Khorramshahr	2,000 km	13 m	two-staged 1,800 kg	Liquid-fueled	1.5-2.0 m	19,000-26,000 kg	Nuclear	Operational
Soumar	2,500 km	6 m	150-170 kg	Solid-fueled	20.2 m	1,530 kg	Nuclear	Operational

Table 7: Naval Assets (Speed Boat/Frigate/Submarine)

Speed Boat (IRGC) (3000-5000 Craft)	Frigates	Submarine
Azarakhsh	Jamaran	Alsabehat
Blade runner	Alvand	Nahang
Bavar	Damavand	636 Submarine
Sina	Mowj	Ghaem
Kaman	Sahand	Ghadir
Tundar	Bayandor (Corvette)	Fateh
Seraj	Hamzeh (Corvette)	Taregh
Zuljanah	Kalat (Missilecraft)	Yonus
Tir	Houdong (Missilecraft)	Nooh
Ashoura	Kaman (Missilecraft)	Be'sat
Ya Mahdi	Sina (Missilecraft)	Kilo class
	Parvin (Coastal patrol)	Yugo
	Kaivan (Coastal patrol)	
	Bavar (Coastal patrol)	
	Zafar (Patrol: Inshore)	
	Chinese cat-14 (Patrol: Inshore)	
	PBF (Patrol: Inshore)	
	PTF (Patrol: Inshore)	
	Hovercraft (Patrol: Inshore)	
	Peykaap (Patrol: Inshore)	

Table 8: Iran Proxy Groups

Proxy	Total Personnel	Country Operating	Formed	Headed by
Al-Hashd Al-Shaabi (The Popular Mobilization Forces, also known as the Popular Mobilization Units)	100,000 to 120,000	Iraq	2014	Abu Mahdi al-Muhandis
Asa'ib Ahl al-Haq (AAH)	10,000	Iraq	2006	Qais al-Khazali
Fatemiyoun Brigade	12,000-14,000	Syria	2014	Ali Reza Tavassoli Mostafa Sardarzadeh
Harakat Hezbollah al-Nujaba (Movement of the Noble Ones)	10,000	Iraq and Syria	2013	Sheikh Akram al-Kaabi
HAMAS (Islamic Resistance Movement) *Harakat Al-Muqawama Al-Islamia*	20,000 fighters 20,000 police and security forces	Gaza Strip	1987	Ismail Haniyeh (Party leader)
Islamic Movement of Nigeria (IMN)	Unknown	Nigeria	1979	Sheikh Ibraheem Zakzaky
Kata'ib al-Imam Ali	Unknown	Iraq	2014	Shabal al-Zaidi
Kata'ib Hezbollah (KHA)	Unknown	Iraq	2003	Abu Mahdi al-Muhandis
Kata'ib Sayyid al-Shuhada	1,000 Iraqi Shia fighters	Iraq	2013	Abu Mustafa al-Sheibani
Lebanese Hezbollah	45,000	Lebanon	1983	Hassan Nasrallah
Palestinian Islamic Jihad (PIJ)	1,000	West Bank	1981	Ramadan Abdullah Mohammad Shallah
Saraya al-Khorasani or "Khorasani Brigades"	3,000	Iraq & Syria	2013	Seyed Ali al-Yaseri
Saudi Hezbollah	Unknown	Saudi Arabia	1987	Ahmed al-Mughassil
Syrian Liwa Abu Fadl al-Abbas (LAFA)	10,000	Syria	2012	Abu Ajeeb (Secretary General) Al-qaid Abu Hajar (Brigade Commander)
The Badr Organization	20,000	Iraq	1982	Hadi Al-Amiri
Yemeni's Ansarullah		Yemen	1994 (armed 2004)	Hussein Badreddin al-Houthi Abdul-Malik al-Houthi
Zainabiyoun Brigade	2,000	Syria	2014	Mozaffar Ali Kermani

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