Red Diamond
Operational Environment & Threat Analysis
Volume 11, Issue 1
July 2020

Iranian Space Capabilities and Support to Military Operations

Retaliatory tactics of the Iranian military

Iranian Missile Strike: Implications of Iran's Response

INSIDE THIS ISSUE

Cover image sources: [right] Foreign CyberShafarat; [lower left] Hosein Velayati / CC BY 4.0; [background] Google Earth.

This issue of Red Diamond features a variety of articles focused on Iran. While our readers typically expect a tactical-level focus from our articles, this issue expands that context to a more strategic level as a result of real-time events at the time of production, and the expertise of our featured guest authors. Understanding why Iran behaves the way it does will facilitate faithful emulation of Iranian analogs in training scenario development and execution.

Of particular interest are feature articles by renowned Iranian subject matter experts Joseph Fallon and Michael Rubin. Joseph Fallon, currently at the think tank UK Defence Forum, places Iranian foreign policy in historical context, arguing that the present Iranian regime's actions are consistent with the objectives of its predecessors—preservation of the regime by protecting independence and securing territorial integrity. Michael Rubin of the American Enterprise Institute explores the complexities of Iran-Iraq relations. He argues that Iranian interest in dominating its Western neighbor will never disappear, for myriad cultural, economic, and strategic reasons. Iran's ability to exert influence is only thwarted by continued Western commitment to ensuring Iraqi independence.

Jerry England explores how Iran's historically competing armed forces are becoming increasingly expeditionary and retaliatory, and improving their ability to coordinate their efforts. He highlights diverse Iranian capabilities and techniques, ranging from ballistic missiles to cyber-attack. Kevin Freese provides an overview of Iranian space programs, analyzing Iran's ability to support military operations through space and counter-space endeavors. Brad Marvel provides a sneak preview of TRADOC G2's upcoming Army Techniques Publication (ATP) 7-100.4, *Iranian Tactics*, planned for release in 2021. Finally, this issue provides a status report on updated entries within TRADOC G2's *Worldwide Equipment Guide*.

Regards, Editorial Staff

apan ***Red Diamond* access via:**
https://community.apan.org/wg/tradoc-g2/ace-threats-integration/

OEE *Red Diamond* published by TRADOC G-2 Operational Environment & Threat Analysis Directorate, Fort Leavenworth, KS

Topic Inquiries:
Kevin Freese (DAC), Editor in Chief

OE&TA Staff:

Penny Mellies (DAC) **penny.l.mellies.civ@mail.mil**	**Director, OE&TA** **913-684-7920**
LTC Bryce Frederickson bryce.e.frederickson.mil@mail.mil	913-684-7944
WO2 Rob Whalley Robert.Whalley297@mod.gov.uk	UK LO 913-684-7994
Paula Devers (DAC) mary.p.koontzdevers.civ@mail.mil	Intelligence Specialist 913-684-7907
Laura Deatrick (CTR) laura.m.deatrick.ctr@mail.mil	Editor 913-684-7925

Angela Williams (DAC) **angela.m.williams298.civ@mail.mil**	**Branch Chief, T&S** **913-684-7929**
John Dalbey (CTR) john.d.dalbey.ctr@mail.mil	Military Analyst 913-684-7939
Jerry England (DAC) jerry.j.england.civ@mail.mil	Intelligence Specialist 913-684-7934
Rick Garcia (CTR) richard.l.garcia.ctr@mail.mil	Military Analyst 913-684-7991
Jay Hunt (CTR) james.d.hunt50.ctr@mail.mil	Military Analyst 913-684-7960
Kris Lechowicz (DAC) kristin.d.lechowicz.civ@mail.mil	Intelligence Specialist 913-684-7922
Steven Sallot (CTR) steven.m.sallot.ctr@mail.mil	Military Analyst 913-684-5963
Jamie Stevenson (CTR) james.e.stevenson3.ctr@mail.mil	Military Analyst 913-684-7995
Walt Williams (DAC) walter.l.williams112.civ@mail.mil	Intelligence Specialist 913-684-7923

Jennifer Dunn (DAC) **jennifer.v.dunn.civ@mail.mil**	**Branch Chief, A&P** **913-684-7962**
Rick Burns (CTR) richard.b.burns4.ctr@mail.mil	Military Analyst 913-684-7987
Kevin Freese (DAC) kevin.m.freese.civ@mail.mil	Intelligence Specialist 913-684-7938
William Hardy (DAC) william.c.hardy26.civ@mail.mil	Intelligence Specialist 913-684-7901
Brad Marvel (CTR) bradley.a.marvel.ctr@mail.mil	Military Analyst 913-684-7914
Vincent Matteo (CTR) vincent.p.matteo.ctr@mail.mil	Military Analyst 913-684-7903
Matt Matthews (CTR) matthew.m.matthews.ctr@mail.mil	Military Analyst 913-684-7761
Dave Pendleton (CTR) henry.d.pendleton.ctr@mail.mil	Military Analyst 913-684-7946
Wayne Sylvester (CTR) vernon.w.sylvester.ctr@mail.mil	Military Analyst 913-684-7941

Iranian Missile Strike: Implications of Iran's Response

Source: https://www.dvidshub.net/image/6024487/ballistic-missile-attack-brings-unprecedented-amount-media-al-asad-airbase

by **Colin Christopher** , TRADOC G-2

Iran's national goals are to expand the reach and relevance of its brand of Shi'a Islam across the Middle East and to assume a position of regional hegemony in line with its long history. Tehran views US influence in the region as its foremost barrier to these goals, and to secure them relies on the global use of proxy groups, terrorism, coercion, and the threat and employment of armed force to target the United States and its partners and allies. One of Iran's primary tools of coercion and force projection is its missile arsenal, which is characterized by increasing numbers of relatively sophisticated systems with improved accuracy, range, and lethality. Recently, Tehran employed its ballistic missiles in a strike against US installations in Iraq. Though the operation was clearly symbolic, Iran's response showcased advanced capabilities revealing a more capable adversary with an ability to challenge the US Army.

Overview of the strike

On January 7, 2020, Iran launched multiple short range ballistic missiles (SRBMs) from three locations within Iran against US Forces in Iraq. The missiles struck two airbases; Ayn Al Asad in western Iraq and an airbase at Erbil in northern Iraq. Al Asad airbase serves as an operational center for US military operations in western Iraq and Erbil is a staging site for special operations, including operations in northern Iraq and Syria. The attack, code named Operation "Martyr Soleimani" by Iran, was in retaliation for the US drone strike that killed Iran's Islamic Revolutionary Guard Corps-Qods Force (IRCG-QF) Commander, Major-General Qassem Soleimani.[1]

Iran launched sixteen SRBMs in two waves about an hour apart. Of the sixteen missiles launched, eleven hit Ayn Al Asad airbase, one hit Erbil's airbase, and four missiles malfunctioned.[2] Iran claims to have conducted "electronic war" during and after the strike, likely indicating they were attempting to jam US counter-strike assets.[3] Diplomatic channels provided US forces warning prior to the strikes, which limited US casualties.[4] Post-strike analysis revealed damage to structures, equipment, cratered runways, and traumatic brain injuries to dozens of US service members.[5] The lack of US fatalities, combined with the early political warning, led to relatively rapid de-escalation, and since the attack both sides have continued tense diplomacy.

Figure 1. Map of Missile Strike Locations
Source: TRADOC G2.

Implications of Iran's Response

Missile Precision & Scale Progression

The attack against US forces revealed Iran's current capability to fire different types of SRBMs at targets with better precision. They launched a barrage of SRBMs from three locations within Iran and 75% of those struck their intended target. Previous Iranian missile launches were estimated to strike within 250 meters (m) of the intended target. Open source imagery analysis of this missile strike suggested an accuracy of within 12 m.[6] Iran's SRBMs were a mix of solid and liquid fueled propellants fired from both mobile and stationary platforms with ranges of 500–800 kilometers.[7] The missiles were equipped with satellite navigation guidance (SATNAV) and maneuverable reentry vehicle (MaRV) to enhance precision.[8]

Iran's domestic missile program dedicates major resources to the progress and development of a variety of missiles capable of threatening deployed US forces, allies, and partners. In addition to domestic missile production Iran benefits extensively from foreign procurement. They leverage countries like North Korea and Russia to extend missile variety and range, and add new generations of ballistic missiles into their force.[9] Part of Tehran's desire to add new generations of ballistic missiles includes motivation to produce their own intercontinental ballistic missile (ICBM). Iran's emerging space program, the Iranian Space Agency (ISA) has created a variety of space launch vehicles (SLV) with each iteration more capable of carrying heavier payloads to space. ICBMs and SLVs share similar technology and Tehran can use ISA towards creating ICBMs. Further ambitions include increasing medium-range ballistic missile (MRBM) capacity and expanding cruise missile capabilities.[10] Iran is quickly evolving missile capability and the latest missile strike validates they can challenge their enemies with more proficient longer range fires.

Integrated Electronic Warfare

Iran utilizes modern electronic warfare (EW) equipment to protect high-value military assets. Brigadier General Amir Ali Hajizadeh, commander of IRGC Aerospace Force, claimed Iran employed jamming during and after the strikes, likely a defensive protocol to protect against a US counterstrike. The Iranian government has satellite communications and GPS jamming capabilities, which Tehran previously showcased by jamming ships traveling through the Strait of Hormuz, according to analysis by the Defense Intelligence Agency.[11] In May 2019, commercial shipping companies reported GPS interference and communications jamming ultimately attributed to Iranian Naval forces in the area. Ships navigating the region also reported spoofed communications from unknown entities falsely claiming to be US or coalition warships.[12] Iran continues to seek considerable advances in EW systems to defend military ground and naval assets. Foreign acquisition from countries such as Russia and China has allowed Iran to bolster and modernize its EW. They were able to use this event as evidence of current countermeasures and boast of their progression in EW capabilities.

Asymmetric Retaliation

Iran's Supreme Leader Ayatollah Ali Khamenei insinuated Iran will execute additional retaliatory measures beyond the missile strikes. He stated, "This [the strike] was just a slap in the face last night."[13] Despite Khamenei's public threat, Iran will likely limit overt military actions in favor of covert operations by both IRGC-QF and state-sponsored proxies. Additionally, these retaliatory operations will occur at a time and place of Iran's choosing, possibly in terms of months or years vice days or weeks. Covert actions could include a range of operations from militia groups conducting military attacks to sophisticated cyber

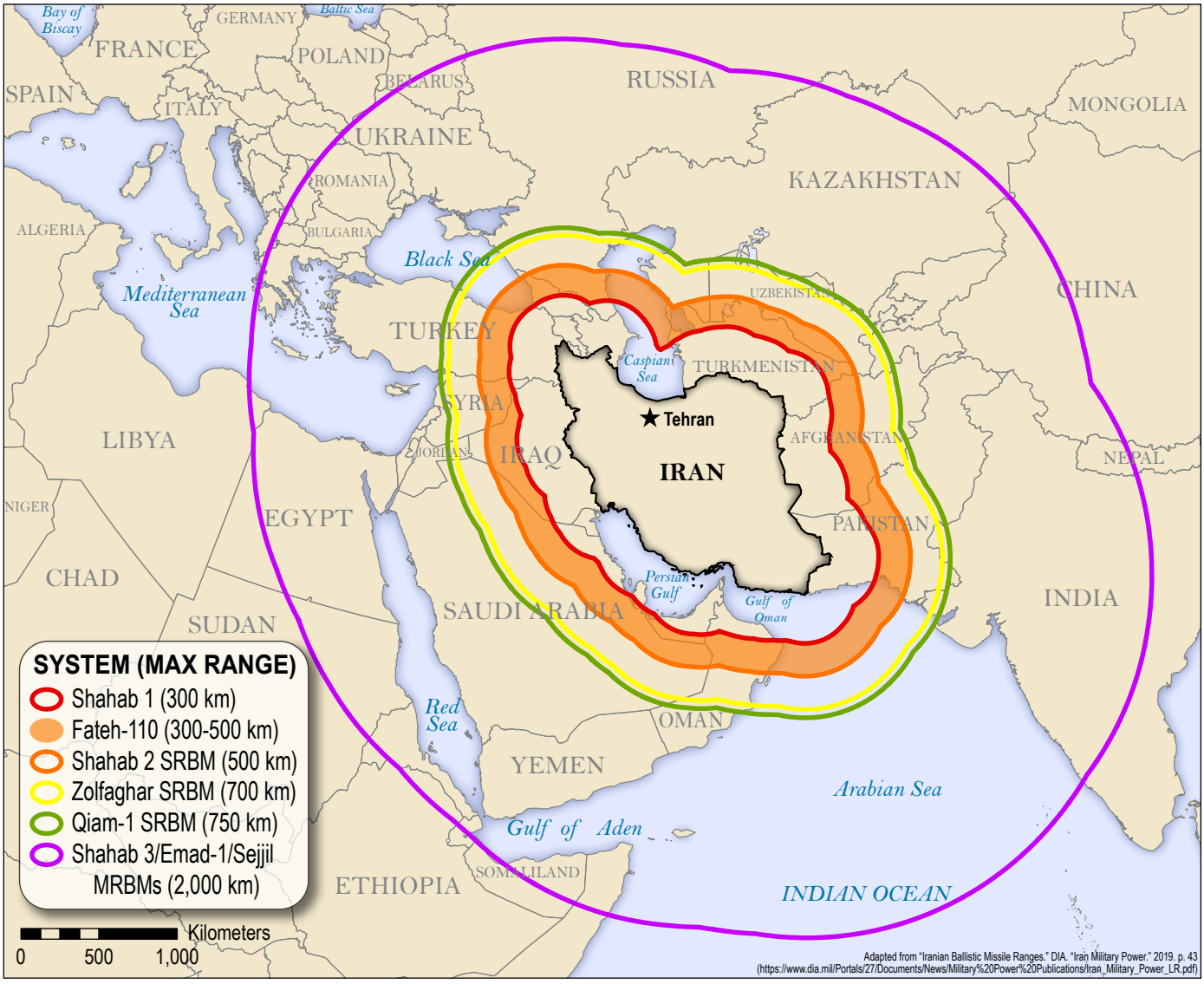


Figure 2. Types and ranges of Iranian missiles
Source: TRADOC G2

warfare. In response to the 2010 Stuxnet cyber-attack, Iran focused on increasing cyber warfare capabilities, including cyber defense and cyber-attack. They have state-sponsored cyber groups capable of launching significant attacks on critical infrastructure.[14] The use of proxy groups gives Iran flexibility in attack timing, plausible deniability, generates stand-off, and exploits political ambiguity and strategic posture.

Iranian Diplomacy

It has been almost 30 years since the last successful ballistic missile strike targeted US support areas. In 1991, Iraqi forces successfully struck US forces based in Riyadh, Saudi Arabia killing 27 and injuring dozens more.[15] In 2003, Iraq again struck a US Operational Support Area in Kuwait with two missiles, but caused no casualties.[16] During the recent Iranian missile strike Iraq's Prime Minister confirmed Iran provided warning to Baghdad 90 minutes prior to the strikes. The warning stated that a strike against US targets in Iraq was imminent and indicated that while the missiles would hit targets on Iraqi soil, they would be aimed only at US military assets.[17] Both bases lacked surface-to-air missile defenses protecting against a conventional missile strike. If it were not for diplomatic channels warning of an imminent attack US casualties could have been heavier. Iran exhibited skilled diplomacy. Assessing certain retaliation if any US forces were killed, Iran took an opportunity to conduct a spectacular attack while diplomatically safeguarding against retribution.

Information Operations

Since the Soleimani strike, Iran has waged a targeted information operations (IO) campaign attempting to recruit and garner support with online propaganda exploiting Soleimani's death. As the confrontation with the US escalated from competition to crisis the rhetoric grew increasingly aggressive. Information operations have been part of Iran's arsenal since the Islamic Revolution. With the start of social media's exponential

expansion, Iran's IO gravitated online becoming a covert alternative to military confrontation. State-sponsored proxies wage campaigns on social media to spread pro-Iranian talking points in the Middle East and abroad. Iran's current online IO campaign will likely enhance recruiting opportunities for state-sponsored proxies and continue to attempt to sway regional and global public opinion in Iran's favor.

Conclusion

This crisis demonstrated how Iran can use a sliding scale of options to respond to perceived US aggression. It also showed how a regional adversary can rapidly move seamlessly back and forth from competition to crisis challenging the US Army. After the Soleimani strike, Iran employed information operations in an attempt to control the narrative both regionally and globally in their favor. Iran's SRBM attack on US forces in Iraq demonstrated the vulnerability of fixed facilities to the full spectrum of longer range, more accurate weapons. For US adversaries, Iran unveiled US military's lack of preparation, details of passive defense measures protecting combat troops and precedent to how the US could respond when competition quickly transitions to crisis. Iran's response clearly indicates a capable regional adversary with global reach, possessing capabilities the US Army has not trained for during counter-insurgency or counterterrorism operations. ◆

Figure 3. Al Asad Airbase Destruction
Source: https://www.dvidshub.net/image/6024515/ballistic-missile-attack-brings-unprecedented-amount-media-al-asad-airbase

1. Hannon, Elliot. "Iran's Missile Attack on U.S. Forces: What Happened. January 8, 2020. https://slate.com/news-and-politics/2020/01/iran-missile-attack-us-forces-iraq-what-happened.html.
2. Talbot, Kyle. "Iran's attack on US forces exposes Pentagon's challenge with stopping ballistic missiles." Stars and Stripes. January 11, 2020. https://www.stripes.com/news/middle-east/iran-s-attack-on-us-forces-exposes-pentagon-s-challenge-with-stopping-ballistic-missiles-1.614408.
3. Iran In-Depth. "Iran Disabled US Monitoring Systems during Missile Attack, IRGC Commander Claims." Radio Farda. January 9, 2020. https://en.radiofarda.com/a/iran-disabled-us-monitoring-systems-during-missile-attack-irgc-commander-claims-/30368664.html.
4. Chappell, Bill. "What We Know: Iran's Missile Strike Against the U.S. in Iraq." NPR. January 8, 2020. https://www.npr.org/2020/01/08/794501068/what-we-know-irans-missile-strike-against-the-u-s-in-iraq.
5. Beynon, Steve. "64 US troops suffered traumatic brain injuries from Iranian missile attack, as casualty total continues to balloon." Stars and Stripes. January 30, 2020. https://www.stripes.com/news/us/64-us-troops-suffered-traumatic-brain-injuries-from-iranian-missile-attack-as-casualty-total-continues-to-balloon-1.616914.
6. Savelsberg, Ralph. "Massive Improvement, In Accuracy of Iran Missiles Over Scud-B." Air Warfare, Threats, Uncategorized. Breaking Defense. January 15, 2020. https://breakingdefense.com/2020/01/massive-improvement-in-accuracy-of-iran-missiles-over-scud-b/.
7. Taleblu, Behnam. "Iran is increasingly using missiles in its military operations – that's a problem." The Hill. January 21, 2020. https://thehill.com/opinion/international/479076-iran-is-increasingly-using-missiles-in-its-military-operations-thats-a.
8. Missile Threat. "Iran's Missile Attack How it Happened." *CSIS Missile Defense Project*. Center for Strategic and International Studies. August 9, 2016. Last modified January 14, 2020. https://missilethreat.csis.org/.
9. Iran Military Power. "Ensuring Regime Survival and Securing Regional Dominance." Defense Intelligence Agency. August, 2019.
10. Office of the Secretary of Defense. "2019 Missile Defense Review." Department of Defense. January 2019
11. Defense Intelligence Agency. "Challenges to Security in Space." DIA. January 2019. https://www.dia.mil/.
12. Joffre, Tzvi. "U.S. warns of GPS interference, communications spoofing in Persian Gulf." The Jerusalem Post. August 8, 2019. https://www.jpost.com/Middle-East/US-warns-of-GPS-interference-communications-spoofing-in-Persian-Gulf-597998.
13. Smith, Patrick, Arouzi, Ali & Khodadadi Amin. "Iran's supreme leader says missile strikes insufficient retribution for Soleimani killing." NBC News. January 8, 2020. https://www.nbcnews.com/news/world/iran-s-supreme-leader-says-missile-strikes-insufficient-retribution-soleimani-n1112231.
14. Doffman, Zak. "Iran's 'Critical' Cyberattack Threat: This is what is really happening right now." Cybersecurity. Forbes. January 11, 2020. https://www.forbes.com/sites/zakdoffman/2020/01/11/irans-critical-cyberattack-threat-this-is-what-is-really-happening-right-now/#5cd42f634f78.
15. Drogin, Bob & Morrison, Patt. "Iraqi Missile Slams Into GIs' Barracks; 27 Killed : Scud attack: 98 are hurt in the deadliest such strike of the war. Quarters were for Pennsylvania reserve unit." Los Angeles Times. February 26, 1991. https://www.latimes.com/archives/la-xpm-1991-02-26-mn-1889-story.html.
16. Bisney, John. "U.S.: Patriots down Iraqi missiles." CNN. March 20, 2003. https://www.cnn.com/2003/WORLD/meast/03/20/sprj.irq.kuwait.rockets/index.html.
17. Qiblawi, Tamara, Damon, Arwa, & Laine, Brice. "US troops sheltered in Saddam-era bunkers during Iran missile attack." CNN. January 14, 2020. https://www.cnn.com/2020/01/13/middleeast/iran-strike-al-asad-base-iraq-exclusive-intl/index.html.

Retaliatory Tactics of the Iranian Military

By **Jerry England,** OE&TA

The Iranian military's mission is to defend the Iranian Revolution by protecting the leadership of the Islamic Republic and maintaining territorial integrity. However, renewed levels of cooperation between the Artesh (Army) and the Islamic Revolutionary Guard Corps' (IRGC's) are making Iran's combat forces increasingly expeditionary under the current leadership, especially when retaliating against perceived threats.[i] The Iranian Armed Forces "Mosaic Defense" doctrine calls for both the Artesh and the IRGC to collaborate in times of war, it also allows for significant capabilities to be positioned throughout the region in order to prevent the Islamic Republic's enemies from establishing a lasting presence in the Middle East. A renewed emphasis on joint command and control structures such as the reestablishment of the Khatam al-Anbiya Central Headquarters, has allowed combat forces to better synchronize and coordinate efforts both domestically and abroad.[1]

The joining of the Artesh and the IRGC, along with an increasing tolerance for risk has given the Iranian regime the ability to retaliate significantly to attempts to curtail its foreign policies. The historically rival organizations have managed to put their differences aside in order to posture the military for the 21st century. Using low-risk high-payoff tactics and techniques, the Iranian military has increased its operational reach. This new expeditionary capability is being sustained throughout the region even while under strict international sanctions. Asymmetric capabilities such as long range fires, unconventional warfare operations, and information warfare (INFOWAR) are being tested and refined in an effort to establish the regime as the protector of the traditional balance of Middle Eastern power.[2]

On 2 January 2020, IRGC Qods Forces leader Qasem Soleimani was killed in a missile strike at the Baghdad International Airport. Well known as the architect of the IRGC's operations in Iraq and Syria, Soleimani had been instrumental in refining the tactics and techniques of the Iranian military in the 21st century. After his death, missile strikes from Iran and its proxies hit targets at the US embassy in Baghdad as well as the US military installations in the Iraqi western desert. Additionally, a stretch of nuisance type cyberattacks hit organizations in the US and the Middle East.[3] While both reactions to the attack are not considered significant when pitted against the defense posture of the United States, the fact that they occurred in relative short order displays Iran's ability to respond in kind when threatened. In fact, the nature of both the missile attack and the low level cyber activities illustrate how the Iranian government will likely respond in the future.

Selected Iranian Ballistic Missiles

System	Fateh-110 SRBM (and variants)	Shahab 1 SRBM	Shahab 2 SRBM	Zolfaghar SRBM	Qiam-1 SRBM	Shahab 3 MRBM	Emad-1 MRBM	Sejjil (Ashura) MRBM
Maximum Range (km)	300-500	300	500	700	At least 750	Up to 2,000	Up to 2,000	2,000
Propellant Type	Solid	Liquid	Liquid	Solid	Liquid	Liquid	Liquid	Solid
Deployment Mode	Road-mobile	Road-mobile	Road-mobile	Road-mobile	Road-mobile, Silo	Road-mobile, Silo	Road-mobile	Road-mobile

Note: This chart does not include all systems in development. All ranges are approximate.

Iranian Ballistic Missiles
Source: DIA.

i. The IRGC's unconventional warfare element the Qods Forces was under the leadership of Major General Qasem Soleimani for more than twenty years until his death in January 2020. The new leader Brigadier General Esmail Qaani is expected to continue the modus operandi of Soleimani.

Three recent examples illustrate the regime's retaliatory capabilities and techniques and are instructive when assessing potential responses to attempts to control or curtail the Iranian government's counterproductive behavior. First are the missile strikes on the Deir-ez-zor province in Syria in 2017 and 2018 after the terrorist attacks on Iranian government and military facilities. Second is the September 2015 surge of Iranian troops in support of the Syrian Arab Army in Aleppo. Finally are the cyberattacks on oil giant Saudi Aramco and the US financial sector after the Stuxnet worm damaged Iran's nuclear facility in Nantanz. Each event has given Iran the opportunity to display its military capability in terms of command and control, international influence, and advancements in technology.

Distant Danger: 2017 & 2018 Missile strikes on Deir Ez-Zor province.

On 7 June 2017 two terrorist attacks—one against the Iranian Parliament building and the other against the Shrine of Imam Khomeini (a religious shrine)—occurred within minutes of each other. The attacks resulted in approximately 12 people killed and 40 wounded. The terrorist group the Islamic State (ISIS) claimed credit for the attack.[4] Iranian officials accused various regional actors as well as the United States of masterminding the attack.[5] Eleven days later four short range ballistic missiles (SRBMs) rained down on the town of Deir Ez-Zor in Syria. Launched from the Kermanshah Missile site, the missiles traversed Iraqi airspace and inflicted damage an estimated 650km away.[6] Reported to be the first time the Iranian strategic forces had used the Shahab-3 missile since 1988, the attack came just 11 days after the United States Senate passed a bill countering Iran's destabilizing activities.[7]

A little over a year later, after another terrorist attack on a military parade at the Southwest Operational Headquarters in Ahvaz, Iran's missile forces responded again, this time against the de facto headquarters for ISIS in the town of Hajin. Similarly, the missile strike was fired from the Kermanshah Missile Site and hit in the vicinity of ISIS compounds over 550km away.[8] Iranian backed militia members in the area commented that Iran had coordinated with Syrian and Russian authorities before the operation.[9] These two operations represented not only Iran's improving ballistic missile capability but more importantly Iran's ability to synchronize and coordinate operations among its allies.

The Iranian military has the largest and most diverse arsenals of ballistic missiles in the Middle East. The majority of these are short range missiles with a maximum range of 700km. Iran now has several types of short range and medium range missiles thanks in part to adapted foreign technology and an ambitious space program.[10] For example, the Zolfaghar missiles used in the 2017 and 2018 attacks use solid fuel engine technology possibly obtained from China.[11]

An integral part of the Iranian "Mosaic" defense strategy, the missile forces are mainly reserved for engaging extra-regional targets as part of an anti-access area denial (A2AD) plan that attempts to engage threats inside the enemy support zone in order to prevent the establishment of a foothold for future operations. However, recently Iran has expanded the role of its missile capability beyond this traditional A2AD role into an offensive and information warfare weapon. The attacks were less about casualties and more about conveying the message that Iran can compete with technologically advanced nations in terms of long range fires. While the assessments vary widely about the actual damage done in these two attacks, Iran's regime can claim military legitimacy with its regional allies as well as Iranian citizens.

After achieving relative competence in missile technology, Iran's arsenal of ballistic missiles is becoming the greatest security threat in the region and there is clear evidence that Iran is transferring the knowledge to its proxies in the Middle East.[12] Hezbollah forces in Lebanon are said to possess over 100,000 missiles, many of which are from Iran. In Yemen, Houthi rebels have launched Iranian missiles—including the SCAD based liquid fuel Qiam SRBM—against Saudi Arabian targets.[13] In Iraq, the various Iranian backed militias within the Popular Mobilization Forces (PMF) have added SRBMs to their arsenal on unguided rockets since their inception in 2014.[14] Systems included the Zelzel, Fateh-110, and the Zolfighar missiles which are all solid fuel systems designed to be easily stored, transported and fired in the heavily contested Iraqi battlespace.[15]

The IRGC's Flying Columns: The 2015 Surge in Syria

In the fall of 2015 the IRGC reportedly increased the number of fighters in Syria from 700 to 3,000 in direct support to the Syrian and Russian offensive in Aleppo and the surrounding countryside.[16] In 2013 Syrian rebels armed with newly acquired weapons had made significant advances in Aleppo including seizing two area air force bases. After two years of losing ground in a bitter urban war of attrition in Aleppo, the allies of Bashar al Assad decided that only a full scale multi domain offensive would dislodge the enemy from his battle positions throughout the city.[17] With support from Russian ground attack planes, the IRGC provided leadership to a large contingent of local and regional militias as well as Syrian regular army forces.[18]

The IRGC and the Iranian government had been involved in the conflict since the beginning providing economic assistance and indirect military aid through the terrorist organization Hezbollah. However, faced with a shortage of competent leadership and increasing defections from the Syrian Arab Army's mostly Sunni conscript forces, the IRGC adopted an expeditionary approach to regional conflicts. By providing IRGC Qods Force commandos, Artesh Special Forces, and militia fighters from Iraq and Afghanistan, the IRGC has managed to mobilize a joint combined force in support of the Assad regime.

Foreign recruits supported the regime in the hopes of receiving training and experience as well as pay and benefits from the Iranian government; in some cases, the chance to obtain Iranian citizenship for service in Syria was offered.[19] IRGC forces have trained and supported Syria's military as well, including establishing a citizen Army similar to the Basij (the domestic militia that is used to control and intimidate the Iranian citizenry). The support to Syria in 2015 was a significant step in the continuing military and economic aid program supporting the dictatorship of Bashar al Assad and represented a proof of concept for the strategy of mobilizing significant forces beyond Iranian territory.

This unprecedented support from Iran for the Syrian regime stemmed from a long history of cooperation between Iran's theocratic government and the ruling Assad family who are considered to be members of a sect of Shi'ism. Through religious and political ties, Iranian officials have been able to intercede in not just Syria but Iraq, Yemen, and Lebanon as well, effectively using social services to gain support for military operations. Began in 1959 as a religious charity organization (filling the gap in governmental supply of services Shi'a dominated South Lebanon), the "Movement of the Deprived" evolved into the Amal movement and was eventually subsumed in the 1980's by Hezbollah with the help of the Iranian government.[20] Known as the "Hezbollah Model," this mix of both military and soft power is leveraged to disrupt operations against regional threats and to prevent the power projection of forces seeking to stop the spread of Iranian influence.[21]

At the early stages of the Syrian civil war, Iranian officials recognized the damage the loss of Damascus to their "Golden Ring" of security would cause. Iranian Qods Forces along with the terrorist group Hezbollah were able to build support for Bashar al Assad's regime by retraining Syrian police forces and legitimizing the local pro regime militias known as "Shabiha" into the National Defense Force (NDF). The NDF and the newly trained police operated in a way that allowed Syrian citizens loyal to Assad's regime to defend their homes against internal and external threats without enlisting in the Syrian Army and risking having to leave their families and property. With advisors from IRGC units, the NDF increased the footprint of government loyalists and freed resources for offensive operations. This approach increased recruitment by allowing members to remain at home and act as an operational reserve rather than deploy around the country.[22] The ability to keep forces in place allowed the Syrian regime to hold territory once it was cleared through offensive action.

The techniques of supporting proxies through military support and weapons was further refined in Iraq against United States forces, by training and advising militias on the art of guerilla warfare. This model will continue to be exported into Middle Eastern conflicts as the Iranian military uses it to maintain control over its ideal of the traditional balance of power.

Other regional conflicts outside of Syria influenced by Iran's IRGC forces include Yemen, Lebanon, and Iraq. In Yemen, the Iranian military support along with a lack of Western attention has allowed the Iranian regime to support cross border attacks against Saudi Arabia's military and oil infrastructure using a combination of direct action and surface to surface missiles.[23] The transfer of unmanned system technology and other forms of standoff weaponry has allowed Iran to sustain the Houthi fight against the Yemen government while providing an opportunity to hit back at the Saudi regime.[24]

Iranian unconventional warfare groups have also managed to replicate the Hezbollah Model in Iraq with the development of the Shi'a Popular Mobilization Force (PMF), an umbrella organization that recruits and trains militias for operations against regional threats deemed dangerous by the IRGC.[25] The PMF, under the guise of assisting the Iraqi government in its fight against the Sunni Islamist group ISIS, sealed off the northwestern quadrant of Mosul in order to prevent ISIS fighters from flowing into Syria to continue the fight against Bashar al Assad. This strategy was claimed to have not only cornered ISIS in its complex battle positions in Mosul but also to have increased Iraqi and allied casualties by prolonging the fight.[26] Now with much of the ISIS threat either destroyed or dispersed, some Iranian backed groups appear to be turning their attention to US forces in the region.[27]

Establishing Order: INFOWAR and Perception Management

The IRGC adopts messages that use a range of themes including religious persecution, economic

instability, and government corruption to combat "Westoxification" in the Middle East and highlight common interests with potential destabilizing elements among target audiences. The influence campaign is backed up not only with boots on the ground but with a range of activities designed to combat the loss of Iranian cultural identity. Among these activities are a range of social and educational services as well as arts and cultural events. Stabilizing programs such as welfare systems that provide survivor benefits to widows and children of martyrs, post combat reconstruction assistance, as well as security force assistance for under-represented Shi'a populations adds legitimacy to the Iranian regime's foreign policy as they look for new ways to promote their interests.[28]

Symbol for the Iranian Cyber Police
Source: Wikipedia.

The use of online technologies such as Facebook, Twitter, and Telegraph for informing and influencing target populations is a relatively new technique for the expansion of influence and information programs throughout the region. However, hard lessons taught by protests throughout the region have forced the regime to leverage the new media for their own purposes. For example, the 2011 Arab Spring surprised Iranian leaders on multiple fronts as they were directly challenged for control over key allies in Syria, Lebanon, and Yemen and indirectly challenged throughout the region as competing narratives for revolutionary change began to emerge.[29] The paradoxical situation the regime found itself in after the start of the Arab Spring should not have come as a surprise, as not more than three years prior the Iranian Green party—armed with cell phones and other social media platforms—constructed the largest mass protest in Iran since the 1979 revolution.[30]

By 2013 Iran had managed to integrate social media as another platform to spread its propaganda, often highlighting the exploits of its proxy forces operating in Syria and throughout the region. Additionally, regime leaders have been known to engage the West and provide inspiration to those faithful to the revolution through social media platforms.[31]

It is expected that future Iranian regime efforts will try to use emerging data driven tools such as bots and artificial intelligence (AI) to continue to influence target audiences throughout the region while at the same time censoring and controlling both traditional and online media in Iran.[32] A threat report by the Cyber security research firm FireEye, concluded that Iranian information operations are engaging in online social media driven influence operations as a way to shape political discussions.[33]

Tailor Made Technology: Cyber Operations

The Iranian regime's adoption of standoff technologies along with the use of proxies and other third party entities to promote its agenda aligns with cyber operations as a low-risk high-payoff proposition. Since the formation of the original hacker forum Ashiyane in 2002, Iranian hackers have continued to flourish and have developed cyber capabilities for the government and military as well as domestic and foreign militias. The use of the Internet to respond to threats by attacking political, economic, and infrastructure information systems is an information warfare tool that is a fairly common retaliatory tactic.[34]

The IRGC is known to engage in multiple cyber activities from counterfeiting computer software to the developing network reconnaissance tools, and has evolved since 2012 into a number of highly capable Advanced Persistent Threat (APT) groups. Despite initial low estimates of Iranian cyber capabilities, the regime developed them more rapidly than other powers to become the credible threat it is today targeting information systems across the full range of operational variables.

In June 2010, it was discovered that a sophisticated cyberattack named "Stuxnet" had been infecting a particular version of Microsoft Windows as well as the Iranian nuclear-enrichment facility in Nantanz since 2007.[35] The Stuxnet worm was designed to sabotage a very specific supervisory control and data acquisition system (SCADA) called a programmable logic controller. The payload in the Stuxnet worm also

used four previously undiscovered vulnerabilities in the targeted system called zero day attacks—an unprecedented number for a single attack.

In the summer of 2012 after the revelation of the Stuxnet attack to groups outside the cyber community, two groups, the Cutting Sword of Justice and the Izz ad-Din al-Qassam Cyber Fighters launched a series of cyber counter attacks targeting global oil producer Saudi Aramco and the United States financial sector. The attacks against Saudi Aramco involved a cyber worm that spread like a virus across the oil giant's network. It was later revealed that the malware had infiltrated the network using an infected USB device similar to the attack vector used in the Stuxnet attack. Once on the targeted system, the cyber worm released a payload called "wiper" to erase data from more than 35,000 devices.[36]

The massive distributed denial of service (DDoS) campaign against the US financial sector was substantially larger than previous DDoS attacks in that the attackers used the power of banks' data centers to overwhelm the circuits and cause outages across major banks.[37] The use of the compromised cloud based resources as an attack platform made stopping the attack more difficult and allowed the hacker group to continue its operations at will.[38]

The groups avoided direct ties to the regime, however the attacks' evidence such as source code and other digital fingerprints suggested that Iran was responsible. In 2016 six Iranian nationals were arrested for their suspected role in the attacks on the US financial sector.[39] The Cyber security firm FireEye has attributed the username of one of the developers of the Shamoon malware that struck Saudi Aramco to the Iranian Advanced Persistent Threat (APT) 33.[40] How the Iranian experience of Stuxnet translated into increased cyber capabilities for the Islamic Republic is not specifically known, however, the subsequent attacks appeared to be more sophisticated than the previous nuisance type attacks which up until then included web defacements and posting anti-regime messages in online forums.[41]

The Iranian hacker community—like others in the region—has evolved mostly organically through online hacker forums and interactions across the Iranian tech industry. Iran is one of the most connected countries in the Middle East and has a rapidly emerging tech industry. Widespread Internet usage and the Iranian regime's early recognition of the significance

Symbol for the Iranian Military
Source: Wikipedia.

of cyber operations has forced Iranian intelligence services to search for recruits for its cyber operations among hacker groups it might perceive as a threat. An advertisement for a government sponsored "Basij Cyber Battalion Empowerment Course," was offered at a military camp outside of Tehran to train the next generation of cyber soldiers for the Iranian regime. Courses included deploying counters and falsehoods for preparatory and operational stages of cyberattacks as well as "Specific Course in Trollist Operations."[42] The increasing level of sophistication has resulted in attacks against US Government agencies and large scale denial of service attacks against private companies indicating a commitment by the Iranian government to exploit cyber vulnerabilities.[43]

The Iranian government's cyber threat is believed to consist of multiple organizations with various links to the government either through the military or through commercial means. Each organization is considered to have their own distinct set of targets and objectives. According to an online video forum by FireEye, some of the tools and infrastructure used by Iranian cyber actors include implementation of refined techniques such as password spraying, wipers, and other software tools. Password spraying is a technically aggressive way of picking one or two accounts and methodically trying passwords over time. Once a password is guessed correctly, the data is exploited for other accounts.[44]

Iranian actors appear to have developed a mature cyber security industry with groups specializing in particular political, military, and economic target sets. For example APT 34, (the name given by FireEye for an Iranian advance persistent threat group) is said to target personally identifiable information (PII) and collects large volumes of data on individuals of interest. Exploitation of cyber tools by FireEye revealed that APTs are managing their cyber capabilities with a large administrative apparatus that manages company data for contractors or front companies, shows which government operations support the government and reveals the unique coding and certification process for threat actors.

Still other hacker groups use social engineering techniques involving fake employment opportunities to get their victims to release malware. The themes—characterized as job lures—use the promise of employment and employment surveys as a way to offload their payloads. Many targets include Middle Eastern companies in the oil industry, hospitality, and airline (transportation) companies. The focus on hospitality and the airline industry has the added bonus of discovering the movements and patterns of life for persons of interest.

Most of the information sought by the APT 33 is strictly about gaining intelligence about businesses and government entities working in the Middle East. Targets can also include IT managers and those with privileged access as a means for reaching high value targets. The linkages to Iranian security organizations have been tied to the operations of APT 33.[45]

The Iranian cyber force is an emerging full-scope cyber actor that is not only using well known cyber techniques, but is also developing new methods to steal information, penetrate public infrastructure and organizations, and disrupt the global information and communication infrastructure.

Implications

Iran's retaliatory tactics are lethal, technically advanced, and evolving at a pace that requires attention. Department of Defense forces that currently operate or will operate in the Middle East will have to consider the Iranian threat especially in times of heightened strategic tension. The techniques developed by the IRGC are being transferred to a broad range of threat actors and expanding the threat footprint to regions previously unaffected by the Iranian military.

Iran's need to build a self-sufficient military industry has forced Iranian weapons producers to make improvements on existing technologies and develop new means for their production. As these capabilities grow it is expected that the Iranian military will share them with their allies in a bid to reduce the chance for an unimpeded operation by US DoD forces. In this context the threat from indirect fire and possible small scale engagements are as prevalent as they were during the height of hostilities in Operation Iraqi Freedom.

Iran's cyber capability is also evolving however; as the rest of the world begins to recognize the threat potential cyberattacks can have on military operations, the Iranian cyber forces will need to invest more in order to keep up. Many enterprises can quickly recover from nuisance attacks and website defacements no matter how embarrassing they may be. The ability to exploit networked industrial control systems and other infrastructure can have a much greater impact, especially if DoD forces are operating in a region with poor private cyber security. Additionally, a successful cyberattack on an ally or partner nation may draw forces into an unforeseen situation for which they are unprepared. Knowledge of the information environment will be a critical component of any future operation.

As the US footprint is reduced in the region, Iran appears poised to finally seize the opportunity to capitalize on its status as the most developed military threat in the region. Successful Iranian military operations and a lack of attention to the Iranian government's intentions in its areas of interest will embolden future Iranian military involvement. The further refinement of the Iranian military's tactics and techniques will increase the risk of Iran evolving into a truly expeditionary force capable of further complicating potential crises. ◆

1. International Institute for Strategic Studies. “Iran’s Networks of Influence in the Middle East.” International Institute for Strategic Studies. Strategic Dossiers. Chpt. 1 November 2019
2. Daniel R. Coats. “Worldwide Threat Assessment of the Intelligence Community.” Senate Select Committee on Intelligence 29 January 2019
3. Zak Doffman, “Iran’s ‘Critical” Cyberattack Threat: This is What Really Happening Right Now,” *Forbes*, 11 January 2020
4. Amir Vahdat and Aya Batrawy. “Islamic State claims stunning attack in heart of Iran.” *Associated Press*. 7 June 2017
5. Kareem Shaheen and Nadia Khomami. “Iranian military blames Saudis after 12 killed in Tehran terrorist attack.” *The Guardian*. 7 June 2017
6. Kyle Mizokami. “Iran Launched A Salvo of Ballistic Missiles at ISIS.” *Popular Mechanics*. 19 June 2017
7. Tyler Rogoway. “Iran Launched An Unprecedented Ballistic Missile Attack On Syrian City.” The War Zone. 18 June 2017; *Tehran Times*. “Iran Fires Missiles at ISIS in Syria for Tehran Attacks.” 19 June 2017
8. ICESERVE24. “Investigation: Operation Muharram.” 2019
9. Hwaida Saad and Rof Nordland. “Iran Fires a Ballistic Missile at ISIS in Syria. Avenging an Earlier Attack.” *New York Times*. 1 October 2018
10. Michael Elleman. “Iran’s Ballistic Missile Program.” *The Iran Primer*. August 2015
11. Congressional Research Service. “Iran’s Ballistic Missile and Space Launch Programs.” 6 December 2012
12. Shaan Shaikh. “Iranian Missiles in Iraq.” Center for Strategic & International Studies. December 2019
13. Defense Intelligence Agency. “Iran Military Power.” US Government Publishing Office. 2019
14. Shaan Shaikh. “Iranian Missiles in Iraq.” Center for Strategic & International Studies. December 2019
15. Monterey Institute of International Studies. “Iran Missile Chronology.” Nuclear Threat Initiative. August 2011
16. Aron Lund. “Not Just Russia: The Iranian Surge in Syria.” Carnegie Middle East Center. 23 May 2016
17. Aron Lund. “Not Just Russia: The Iranian Surge in Syria. “ Carnegie Middle East Center. 23 May 2016
18. CNN. “Iran Steps up its Forces in Syria.” *CNN.com*. 27 October 2015
19. Farnaz Fassihi. “Iran Pays Afghans To Fight for Syria.” *Wall Street Journal*. 16 May 2014
20. Boaz Atzil, “State of Weakness and ‘Vacuum of Power’ in Lebanon”, Studies in Conflict and Terrorism, School of International Services American University, 2010
21. Will Fulton. “How Deeply is Iran Enmeshed in Syria?” *The Iran Primer*. USIP. 6 May 2013; James B. Love. “Hezbollah: Social Services as a Source of Power.” Joint Special Operations University. Chapter 3. June 2010
22. Aron Lund. “Who are the pro-Assad Militias?” Carnegie Middle East Center. 2 March 2015
23. USIP. “Timeline of Houthi Attacks on Saudi Arabia.” Original: 16 September. 2016
24. Peter Brookes. “The Growing Iranian Unmanned Combat Aerial Vehicle Threat Needs U.S. Action.” *Heritage*. 17 September 2019
25. Associated Press. “AP Explains: Who Are Iraq’s Iran-Backed Militias?” *US News and World Report*. 31 December
26. Dominic Evans and Maher Chmaytelli and Patrick Markey. “How Iran closed the Mosul ‘horseshoe’ and changed Iraq war.” Reuters. 7December 2016
27. Shawn Snow. “Iran-backed group launches attack near small garrison in Syria housing American special operators.” *Militarytimes*. 16 February 2020
28. Frederic Wehrey and David Thaler and Nora Bensahel and Kim Cragin and Jerrold Green. “Dangerous but not omnipotent exploring the reach and limitations of Iranian power in the Middle East.” Pg. 115. RAND. 2009
29. Sharam Chubin. “Iran and the Arab Spring: Ascendancy Frustrated.” September 2012
30. Abbas Milani. “The Green Movement.” *The Iran Primer*. USIP. 6 October 2010
31. International Institute for Strategic Studies. “Iran’s Networks of Influence in the Middle East.” International Institute for Strategic Studies. Strategic Dossiers. Chpt. 1 November 2019
32. Jessica Guynn. “Facebook information warfare: Inside Iran’s Shadowy Operations to Target You on Social Media. *USAToday*. 10 January 2020; Alice Revelli. Lee Foster. “Network of Social Media Accounts Impersonates U.S. Political Candidates. Leverages U.S. and Israeli Media in Support of Iranian Interests.” Fireeye. 28 May 2019
33. Fireeye Intelligence Team. “Suspected Iranian Influence Operation Leverages Network of Inauthentic News Sites & Social Media Targeting Audiences in U.S... UK. Latin America. Middle East.” Fireeye. 21 August 2019
34. Collin Anderson and Karim Sadjadpour. “Iran’s Cyber Threat espionage. Sabotage and revenge.” Carnegie Endowment for International Peace. Pgs. 10 and 11. 2018
35. James Fawell and Rafal Rohozinski. “Stuxnet and the Future of Cyber War.” *Survival*. Feb /Mar 2011
36. Fahmida Rashid. “Inside the Aftermath of Saudi Aramco Breach.” *Darkreading*. 8 August 2015
37. Joseph Menn. “Cyber-attacks against banks more severe than most realize.” Reuters. 17 May 2013
38. Nicole Perloth and Quentin Hardy. “Bank Hacking Was the Work of Iranians, Officials Say.” *New York Times*. 8 January 2013
39. Ellen Nakashima and Matt Zapotosky. “U.S. charges Iran linked hackers with targeting banks. N.Y. dam.” *Washington Post.* 24 March 2016
40. Juha Saainen. “Fireeye Identifies Alleged Iran Govt-Linked Hacking Group.” *IT News*. 21 September 2017
41. Collin Anderson and Karim Sadjadpour. “Iran’s Cyber Threat espionage. Sabotage and revenge.” Carnegie Endowment for International Peace. Pgs. 10 and 11 2018
42. The Cyber Shafarat. “Cyber Battalion Empowerment Courses in Abali – Iranian Basij Cyber.” Treadstone 71. 8 January 2020
43. Collin Anderson and Karim Sadjadpour. “Iran’s Cyber Threat espionage. Sabotage and revenge.” Carnegie Endowment for International Peace. Pgs. 10 and 11 2018
44. Fireeye. “State of the Hack: Spotlight Iran- from Cain &Abel to full SANDSPY.” Youtube. Fireeye Channel. 17 January 2020
45. Fireeye. “State of the Hack: Spotlight Iran- from Cain &Abel to full SANDSPY.” Youtube. Fireeye Channel. 17 January 2020

Source: Author.

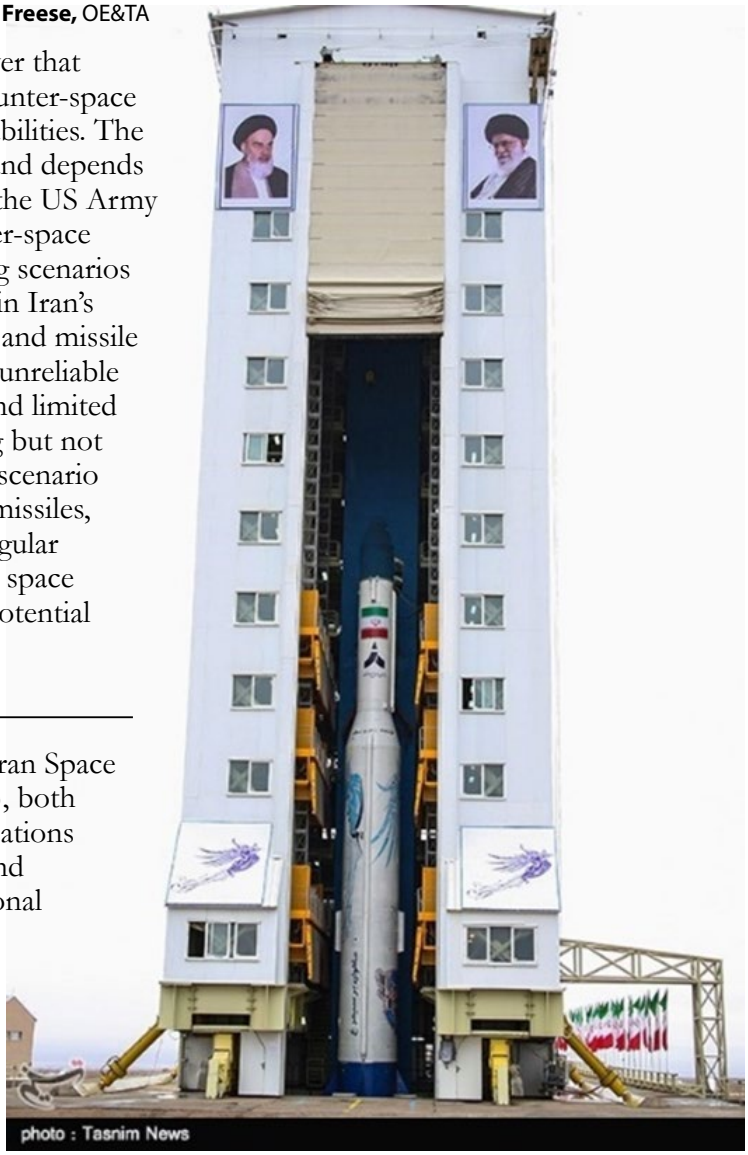
Iranian Space Capabilities and Support to Military Operations

By **Kevin M. Freese,** OE&TA

Iran is a minor space power, but it is an emerging power that understands the military importance of space and counter-space activities and is working diligently to improve its capabilities. The US Army is the DoD's largest user of space capabilities and depends upon space support for land dominance.[1] Consequently, the US Army training community should take Iranian space and counter-space capabilities into account when developing and conducting scenarios and exercises that emulate Iranian analogs or are set within Iran's area of influence. At present, Iran has a significant space and missile infrastructure and ballistic missile capability, nascent and unreliable space launch capability, non-existent satellite capability, and limited counter-space capability. International pressure is slowing but not stopping advances across all of these areas. Trainers and scenario developers should consider short- to mid-range ballistic missiles, whether employed by conventional military forces or irregular proxies, electromagnetic and cyber-attack against friendly space assets, and secondhand access to satellite capabilities as potential activities in any notional scenario.

Space Organization and Infrastructure

Iran's launch and satellite programs are managed by the Iran Space Research Center (ISRC) and the Iran Space Agency (ISA), both residing in the Iranian President's Minister of Communications and Information Security, and the Minister of Defense and Armed Forces Logistics, which is part of Iran's conventional military (Artesh). Iran's ballistic missile capability resides in the Al Ghadir Missile Force, which is in the Iranian Republic Guard Corps Aerospace Force (IRGCASF).[2] Additionally, Iran's Supreme Space Council, which is comprised of multiple cabinet-level officials, exercises oversight over space programs. Participating ministries range from those associated with defense and intelligence to roads and mines.



Iran's Simorgh launcher with the Payam satellite.
Source: Tasnim News Agency, "Simorgh Payam launch 04," Wikimedia Commons, January 15, 2019, https://commons.wikimedia.org/wiki/File:Simorgh_Payam_launch_04.jpg, CC BY-SA 4.0

Although space by its nature supports dual use, Iran prioritizes investment in predominantly military space programs over civilian programs.[3] Iran's primary spaceport is the Imam Khomeini Space Center near Semnan. It has two launch complexes as well as rocket assembly and engine test facilities.[4] Iran's Armed Forces Geographical Organization has a facility for imagery and mapping in Tehran, and there is a remote sensing ground station at Mahdasht.[5] There are also optical and radar telescopes at Mahdasht, which Iran claims provide space situational awareness capability, although the capacity is unclear.[6] Iran has missile silo bases at Khorramabad and Tabrize, and additional missile facilities in Shahroud, Tabriz, Mashad, Kuhestak, and Kermanshah. Private and public sector companies across the country provide components that can be used for civilian as well as military rocket programs.[7]

Ballistic Missiles

Iran maintains the largest arsenal of short-range ballistic missiles (SRBMs) and mid-range ballistic missiles (MRBMs) in the Middle East and is continually modernizing its force to improve range, accuracy, and lethality.[8] Iran does not possess nor is prioritizing development of an intercontinental ballistic missile (ICBM) capability.[9]

Iranian SRBMs include the Fateh-110, Shahab-1, and Shahab-2, all of which are road-mobile. Iran is believed to have less than 100 launchers for each of these types of missiles, although the missile inventory may outnumber launchers.[10]

- The **Fateh-100** is an 8.9 m, 3,450 kg solid-fuel rocket capable of delivering a 500 kg payload 300 km. Iran may have multiple variants, including an anti-ship/anti-radiation variant (the Hormuz) and a variant with a 700 km range (the Zolfaghar).[11]
- The **Shahab-1** (AKA Scud B/R-17/SS-1C) is an 11 m, 5,860 kg liquid-fuel rocket capable of delivering a 985 kg warhead up to 330 km. Iran used these extensively in the Iran-Iraq War.[12]
- The **Shahab-2** (AKA Scud C) is an 11 m, 6,095 kg liquid-fuel rocket capable of delivering a 770 kg payload to a range of 500 km. Iran uses Shahab-2's extensively in military exercises. The Qiam-1 is a slightly heavier variant of the Shahab-2 (6,155 kg (6.8 t)), with slightly lighter payload (750 kg) and significantly longer range (800 km). Iran has employed Qiam-1s against ISIS targets in Syria[13] and against US targets in Iraq.[14]

Iranian MRBMs include the Shahab-3 and Sejjil (Ashura), both of which are road-mobile although the Shahab-3 is also silo-launched. Iran's inventory of these missiles is unknown.[15] The Shahab-3 is the Iranian variant of North Korea's No Dong 1. It is a single-stage, liquid-fuel rocket. Its exact specifications are unclear, but it likely is 16.6 m long with a launch mass of 17,410 kg, and capable of delivering a 1,200 kg payload 1,300 km. Iran has had mixed results testing Shahab-3, and has deployed fewer than 50 launchers.[16] Shahab-3 variants include the Ghadr-1 and Emad. Ghadr-1 is a two-stage rocket with a liquid and solid fuel stage. It is reportedly slightly heavier than the Shahab-3 at 19,000 kg, with a longer range (1,950 km) and smaller payload (800 kg). Emad is actually a reentry vehicle atop a Shahab-3, with a slightly smaller payload (750 kg) and slightly shorter range (1700 km) than the Ghadr-1.[17] The Sejjil (AKA Ashura) is an 18 m, 23,600 kg, two-stage solid-fuel rocket with a payload capacity up to 1,500 kg and range of 2,000 km. It has not been tested recently and it is uncertain whether it is operational.[18]

Space Launch

In addition to SRBMs and MRBMs, Iran has space launch vehicles (SLVs). Despite international concerns, a SLV is not an ICBM. Iran's SLV technology is inferior to its missile technology, so it is doubtful that Iranian SLVs are intended to be missile launchers,[19] although associated dual-use technologies could be used to facilitate and accelerate ICBM development.[20]

Iran's primary SLV is the Safir-1, a domestically-built, two-stage, liquid-fuel rocket. It is 22 m (72 ft) long with a launch mass of 26-27,000 kg. Safir-1 is capable of placing a 50 kg payload into low Earth orbit (LEO). It is a variant of the Shahab-3 MRBM, developed by modifying the Shahab-3 to include an additional stage. Iran has used the Safir-1 to place four small satellites into LEO, and has had used it for several additional failed attempts. Safir-1's capacity makes it an unlikely candidate for conversion into an ICBM.[21] The Simorgh, or Safir-2, is Iran's successor to the Safir. Like the Safir-1, it is based on the Shahab MRBM. It is 27 m long with a launch mass of 70-87,000 kg. Simorgh is designed to place 250 kg payloads in LEO, although it has yet to be successful. If Iran succeeds at launching a Simorgh, its technology could potentially be repurposed to support an ICBM program.[22]

Anti-Satellite (ASAT) and Counter-Space

Iran has robust satellite jamming capability, and has aggressively interfered with satellite broadcasts to control information access within its borders since 2003. Iran has successfully employed terrestrial jammers from within its territory as well as orbital jammers from its own and from partner nation territory. Media targets have included BBC, VOA, Radio Zamaneh, and Rangarang.[23] Iran not only has acknowledged its capability to jam satellite signals, but promotes proliferation of jamming technology by marketing satellite jammers through state-owned companies.[24]

Iran's cyber-attack capability is far behind Russia's and China's, but has been growing since 2010. Iran has had some success targeting international private-sector industries using a variety of cyber tactics ranging from malware to distributed denial of service attack.[25] In event of conflict, satellite orbital or ground components could become targets for increasingly-sophisticated Iranian hackers.

As of 2020, there is no evidence Iran has directed energy ASAT capability. Similarly, Iranian launch and satellite operations are too unreliable to be considered co-orbital or direct-ascent ASAT threats. This could eventually change, however, as Iranian space capability improves.[26]

Satellites

As of February 2020, Iran had no operational satellites in orbit. However, Iran has operated five satellites in low-Earth orbit since 2005. Familiarity with them illustrates Iran's capabilities, determination, and priorities in space. SINA-1 was Iran's first satellite, a 160kg experimental satellite built by a Russian company and launched by Russia but operated by the Iranian

Space Agency. The stated purpose of SINA-1 was communications and research.[27] It was launched in October 2005 with a projected lifespan of three years, so is unlikely to be operational as of 2020.[28] Iran's second satellite, OMID, was a 27 kg experimental communications satellite. It was Iran's first successful domestic satellite launch. Iran launched it from Khomeini Space Center aboard a Safir-1 rocket. It operated for a few weeks in February 2009.[29] Iran's third satellite, RASAD-1, was a 15 kg Earth observation satellite. Iran launched it from Khomeini Space Center aboard a Safir-1 rocket. It reportedly had 200 m resolution. It operated for three weeks in June-July 2011.[30] Iran's fourth satellite, NAVID, was a 50 kg Earth observation satellite. Iran launched it from Khomeini Space Center aboard a Safir-1B rocket. It was reported to have 400 m resolution,[31] intended for weather and natural disaster monitoring. It operated from February to April 2012.[32] Iran's fifth satellite, FAJR, was an updated version of OMID. It was purportedly capable of operating for 18 months but deorbited a few weeks after launch in February 2015.[33] Iran launched it from Khomeini Space Center aboard a Safir-1B rocket. It may been intended as an ELINT satellite.[34] Iran has made multiple satellite launch attempts using Safir and Simorgh rockets since 2015. None have been successful.[35] Iran does have satellite ground facilities that could be used to process imagery and signals. Despite the lack of domestic satellite capability, Iran still is capable of purchasing satellite data from commercial and international state partners.

Sanctions and the Future of Iranian Space

Iran has potential to be a major space actor but is unlikely to tap that potential for the foreseeable future because of its strategic environment and approach. Iran is the 17th most populous country in the world, with a population exceeding 80 million. The population is highly urbanized and half of the population is within peak productive years (ages 25-54). The literacy rate is 85%.[36] More than 5% of the population attends university but, unlike larger economies, Iran is incapable of absorbing its graduates into appropriate-levels of the workforce, such as high-technology science and space industry.[37] Although Iran's space successes have been limited, infrastructure is in place and Iran continues to invest in space.[38] Nevertheless, Iran's progress is tempered by international pressure. Some UN sanctions were lifted in 2015, but others remain in place. The EU has its own restrictions in place on dual-use technology, certain metals, transportation equipment, and financial activity. Like the UN sanctions, these were eased in 2015, but not lifted.[39] Moreover, the US has reinstated many of the sanctions eased in 2015 and has implemented additional sanctions.[40] Some sanctions specifically targeted the Iranian Space Agency as well as multiple supporting research institutions.[41] Iran's persistent hostile rhetoric and actions cause concern from many western scientists as well as governments,[42] and international pressure is likely to continue so long as Iran supports regional and global terrorist networks and threatens neighboring and distant countries alike.[43] Consequently, Iran's space programs will be scrutinized and hampered for the foreseeable future.

Implications for Training Community

For Army trainers and scenario designers, the principal Iranian space capabilities to consider are short- to mid-range ballistic missiles that could be used to target military forces or threaten regional partners. In fact, ballistic missiles would likely be integral to any Iranian military operation. In addition to Iranian forces themselves, Iranian proxies are in possession of Iranian SRBMs and could employ them in any given scenario. The principal Iranian counter-space capability will be electromagnetic jamming of GPS and communications. As a secondary capability, cyber-attacks could be employed to disrupt or degrade space support to US military formations. Using proxies, the capability to conduct kinetic attack against satellite ground stations should not be discounted, although it is less likely.

Although a ground infrastructure to support imagery exploitation and mapping exists, Iran is unlikely to have significant satellite support to ground operations. What capability exists is likely purchased through international partners and commercial providers. For trainers, this means opposing forces most likely would rely upon air-breathing assets rather than satellite ISR. ◆

UPDATE:

In April 2020, Iran announced that the IRGC had successfully placed a "strategic intelligence" satellite, designated NUR-1 in low-Earth orbit. IRGC launched the satellite from Shahroud using a Qased rocket and mobile launcher.[44] Like other Iranian SLVs, the Qased rocket appears to be based on the Shaheb-3 MRBM.[45] The capabilities of this satellite are unclear and may not actually be relevant – the strategic message of the launch is that the IRGC has launch capability. This hints that intercontinental ballistic missile capability is an Iranian goal and highlights that Iran prioritizes military capability over peaceful exploration of space.

1. David Mann, "On Space Programs," *Statement before the Committee on Armed Services Strategic Forces Subcommittee, U.S. Senate*, 2nd Session, 113th Congress, 12 March 2014, http://www.armed-services.senate.gov/imo/media/doc/Mann_03-12-14.pdf.
2. Defense Intelligence Agency, *Iran Military Power: Ensuring Regime Survival and Securing Regional Dominance* (Washington, D.C.: Government Printing Office, August 2019); Defense Intelligence Agency, Challenges to Security in Space (Washington: Government Printing Office, January 2019).
3. B. Harvey, H. Smid, and T. Pirard, *Emerging Space Powers: The New Space Programs of Asia, the Middle East, and South America* (Chichester, UK: Springer, 2010).
4. Nuclear Threat Initiative, "Iran", July, 2017, https://www.nti.org/learn/facilities/313/.
5. B. Harvey, H. Smid, and T. Pirard, *Emerging Space Powers: The New Space Programs of Asia, the Middle East, and South America* (Chichester, UK: Springer, 2010); Iran Watch, "Armed Forces Geographical Organization," July 24, 2019, https://www.iranwatch.org/iranian-entities/armed-forces-geographical-organization.
6. *Space Watch*, "Iran Claims to Have SSA Radar Capable of Detecting Satellites in LEO," December 2018, https://spacewatch.global/2018/12/iran-claims-to-have-ssa-radar-capable-of-detecting-satellites-in-leo/.
7. Nuclear Threat Initiative, "Iran", July, 2017, https://www.nti.org/learn/facilities/313/
8. Department of Defense, 2019 *Missile Defense Review* (Washington, D.C.: Government Printing Office, January 17, 2019).
9. Missile Defense Project, "Missiles of Iran," *Missile Threat, Center for Strategic and International Studies*, June 14, 2018, last modified June 15, 2018, https://missilethreat.csis.org/country/iran/.
10. Defense Intelligence Agency Missile Analysis Committee, *Ballistic and Cruise Missile Threat* (Washington, D.C.: Government Printing Office, 2017).
11. Missile Defense Project, "Fateh-110," *Missile Threat*, Center for Strategic and International Studies, August 9, 2016, last modified January 14, 2020, https://missilethreat.csis.org/missile/fateh-110/.
12. Missile Defense Project, "Shahab-1 (Scud B-Variant)," *Missile Threat*, Center for Strategic and International Studies, September 28, 2017, last modified February 25, 2019, https://missilethreat.csis.org/missile/shahab-1/.
13. Missile Defense Project, "Shahab-2," *Missile Threat*, Center for Strategic and International Studies, August 9, 2016, last modified January 22, 2020, https://missilethreat.csis.org/missile/shahab-2/.
14. Geoff Brumfiel and David Welna, "Satellite Photos Reveal Extent of Damage from Iranian Strike on Air Base in Iraq," *NPR* (January 8, 2020), https://www.npr.org/2020/01/08/794517031/satellite-photos-reveal-extent-of-damage-at-al-assad-air-base.
15. Defense Intelligence Agency Missile Analysis Committee, *Ballistic and Cruise Missile Threat* (Washington, D.C.: Government Printing Office, 2017).
16. Missile Defense Project, "Shahab-3," *Missile Threat*, Center for Strategic and International Studies, August 9, 2016, last modified June 15, 2018, https://missilethreat.csis.org/missile/shahab-3/.
17. Missile Defense Project, "Emad, Ghadr (Shahab-3 Variants)," *Missile Threat*, Center for Strategic and International Studies, August 9, 2016, last modified January 21, 2020, https://missilethreat.csis.org/missile/emad/.
18. Missile Defense Project, "Sejjil," *Missile Threat*, Center for Strategic and International Studies, August 9, 2016, last modified June 15, 2018, https://missilethreat.csis.org/missile/sejjil/.
19. David Schmerler, "Iran's Space Launch: ICBM or Space Program Development?" Foreign Policy Research Institute, January 22, 2019, https://www.fpri.org/article/2019/01/irans-space-launch-icbm-or-space-program-development/.
20. Department of Defense, 2019 *Missile Defense Review* (Washington, D.C.: Government Printing Office, January 17, 2019); Missile Defense Project, "Missiles of Iran," *Missile Threat, Center for Strategic and International Studies*, June 14, 2018, last modified June 15, 2018, https://missilethreat.csis.org/country/iran/.
21. Missile Defense Project, "Safir," *Missile Threat*, Center for Strategic and International Studies, October 16, 2017, last modified June 15, 2018, https://missilethreat.csis.org/missile/safir/.
22. Missile Defense Project, "Simorgh," *Missile Threat*, Center for Strategic and International Studies, September 28, 2017, last modified June 15, 2018, https://missilethreat.csis.org/missile/simorgh/.
23. PBS, "Satellite Jamming in Iran: A War over Airwaves," *Frontline Small Media Report* (November 2012), https://www-cache.pbs.org/wgbh/pages/frontline/tehranbureau/SatelliteJammingInIranSmallMedia.pdf.
24. Defense Intelligence Agency, *Challenges to Security in Space* (Washington: Government Printing Office, January 2019).
25. Defense Intelligence Agency, *Iran Military Power: Ensuring Regime Survival and Securing Regional Dominance* (Washington, D.C.: Government Printing Office, August 2019).
26. Defense Intelligence Agency, *Challenges to Security in Space* (Washington: Government Printing Office, January 2019).
27. "SINAH-1," *N2YO.com*, https://www.n2yo.com/satellite/?s=28893; Krebs, Gunter Dirk, "Sina 1," *Gunter's Space Page*, https://space.skyrocket.de/doc_sdat/sina-1.htm.
28. Harvey, H. Smid, and T. Pirard, *Emerging Space Powers: The New Space Programs of Asia, the Middle East, and South America* (Chichester, UK: Springer, 2010).
29. Robert Christy, "Iran in Orbit," Zarya Soviet, Russian and International Space Flight, February 9, 2020, https://www.zarya.info/Diaries/Iran/Iran.php.
30. Robert Christy, "Iran in Orbit," Zarya Soviet, Russian and International Space Flight, February 9, 2020, https://www.zarya.info/Diaries/Iran/Iran.php.
31. Robert Christy, "Iran in Orbit," Zarya Soviet, Russian and International Space Flight, February 9, 2020, https://www.zarya.info/Diaries/Iran/Iran.php.
32. "NAVID," *N2YO.com*, https://www.n2yo.com/satellite/?s=38075#results.
33. "FAJR," *N2YO.com*, https://www.n2yo.com/satellite/?s=40387#results.
34. Robert Christy, "Iran in Orbit," Zarya Soviet, Russian and International Space Flight, February 9, 2020, https://www.zarya.info/Diaries/Iran/Iran.php.
35. Robert Christy, "Iran in Orbit," Zarya Soviet, Russian and International Space Flight, February 9, 2020, https://www.zarya.info/Diaries/Iran/Iran.php.
36. Central Intelligence Agency, "Iran," *CIA World Factbook*, March 4, 2020, https://www.cia.gov/library/publications/the-world-factbook/geos/ir.html.
37. Amin Mohseni-Cheraghlou, "Update from Iran: Iran's Over-Education Crises," *World Bank: Arab Voices*, October 6, 2017, https://blogs.worldbank.org/arabvoices/iran-education-crises.
38. B. Harvey, H. Smid, and T. Pirard, *Emerging Space Powers: The New Space Programs of Asia, the Middle East, and South America* (Chichester, UK: Springer, 2010).
39. European Council, "EU Restrictive Measures against Iran," 2019, https://www.consilium.europa.eu/en/policies/sanctions/iran/.
40. U.S. Department of State, "Iran Sanctions," 2019, https://www.state.gov/iran-sanctions/#FactSheets.
41. Zachary Halaschak, "US Imposes Sanctions on Iran Space Agency after Failed Rocket Launch," *Washington Examiner*, September 03, 2019, https://www.washingtonexaminer.com/news/us-imposes-sanctions-on-iran-space-agency-after-failed-rocket-launch.
42. R. Naseer and M. Amin, "Nuclear Terrorism: Hype, Risks and Reality-A Case of Pakistan," South Asian Studies (2019), http://search.proquest.com/docview/2286901691/.
43. Defense Intelligence Agency, *Iran Military Power: Ensuring Regime Survival and Securing Regional Dominance* (Washington, D.C.: Government Printing Office, August 2019).
44. Marcia Smith, "Iran Launches Firsts Military Satellite from New Launch Site," *Space Policy Online* (April 22, 2020), https://spacepolicyonline.com/news/iran-launches-first-military-satellite-from-new-launch-site/.
45. Gunter Dirk Krebs, "Qased," Gunter's Space Page, https://space.skyrocket.de/doc_lau/qased.htm.

Iran's first domestically made satellite, OMID, aboard a Safir rocket, launched on February 2, 2009.

Source: Mardetanha, "Omid 0654," Wikimedia Commons, May 14, 2009, https://commons.wikimedia.org/wiki/File:Omid_0654.jpg

Iranian ATP Preview

By **Brad Marvel,** OE&TA

Following in the footsteps of ATP 7-100.1, *Russian Tactics*, ATP 7-100.2, *North Korean Tactics*, and ATP 7-100.3, *Chinese Tactics*, TRADOC G-2's Operational Environment Integration Directorate is pleased to announce the development of ATP 7-100.4, Iranian Tactics. As with the other three threat tactics ATPs, 7-100.4 examines the doctrine and tactical approach used by a specific threat nation – in this case, Iran – and provides end users throughout the Army with an accurate and readable description of threat doctrine. This enables planners, trainers, and leaders to more accurately depict potential Iranian tactics in training and education venues of all types. Also like the other threat tactics ATPs, 7-100.4 is to be fully unclassified. The initial draft of ATP 7-100.4 should be completed in 2020, with final publication in early 2021.

Tactics described in ATP 7-100.4 are taken primarily from Iranian publications. This includes doctrinal manuals, books, essays, monographs, and news/periodical articles. These primary sources are augmented by products from subject matter experts from across the field, along with open-source government publications. Iranian primary sources are not as readily available as are sources from other ATP topic nations – particularly China – but the Iranian enthusiasm for writing on military theory should provide sufficient data to give a comprehensive overview of the Iranian tactical approach. Very few public sources discuss Iranian tactics, instead focusing heavily on Iranian politics, domestic and foreign policy, and social dynamics. Much of the research that populates the ATP is original, and much of its material has yet to be examined in an open-source document.

The first chapter of ATP 7-100.4 discusses the fundamentals of the Iranian regime: a general overview of Iran's political structure, its political and strategic objectives, and the Iranian operational environment. This chapter is not meant to be an exhaustive study of the enormously complex Iranian political/strategic construct, but rather is intended to give the reader a working understanding of the various factors that shape the Iranian tactical approach. Chapters 2 and 3 discuss ground force and joint force structure respectively, giving unit structure and capability overviews of all relevant Iranian military organizations. This section also includes a discussion of the Iranian chain of command, helping the reader to understand the context through which orders are passed, and the interactions between national, regional, and local commanders.

The deep dive into the Iranian tactical approach begins in Chapter 4, with a description of the **Mosaic Defense**. This is the overarching Iranian operational concept, comparable to American Air-Land Battle or Full Spectrum Operations of past generations. The Mosaic Defense is informed by several key assumptions:

- Iran's most probable opponent is the United States, or allies of the United States backed by American military power.
- The most probable military scenario is one in which the United States and/or its allies commence an aggressive, offensive action into Iranian territory, with the objective of deposing the current ruling regime.
- American firepower – especially airpower – is overwhelming.
- The United States is strongly averse to significant casualties, and is more susceptible to losing a war on the home political front than on the actual battlefield.
- Iran's armed forces will continue to struggle to find adequate resources, particularly with regard to new equipment and training.
- Iran's military and population are staunchly loyal to the Iranian regime, and will enthusiastically fight any invader, even if facing a huge disparity in training or equipment quality.
- Iran's terrain is well-suited to a defensive campaign.

The Karrar main battle tank – probably heavily based on the T-72/T-90, is one of Iran's first major indigenous weapons programs

Source: Tasnim News Agency / CC BY (https://creativecommons.org/licenses/by/4.0), https://commons.wikimedia.org/wiki/File:Karrar_(Iranian_tank)_01.jpg.

Based on these assumptions, Iranian leaders developed their doctrine around four primary principles:

- Employ terrain advantages and strategic depth to maximize the toughness of Iranian formations that might otherwise be badly outmatched.
- Wherever possible, conceal, harden, and disperse Iranian forces in order to offset enemy advantages in firepower.
- Plan for units to be isolated from both higher echelons and other units.
- Leverage Iran's willingness to absorb casualties while exploiting the enemy's extreme discomfort with casualties in order to bring about an end to the conflict through political discord in the enemy's homeland.

The Mosaic Defense is the output of this set of assumptions and guiding principles. The command and control structure for both the Artesh – Iran's conventional military – and the Iranian Republican Guard Corps (IRGC) have been highly decentralized and built around local defense. Tactical control at higher echelons takes a lower precedence than strong unit cohesion and independence at lower levels, reflective of the assumption that Iranian forces may face overwhelming enemy firepower disrupting their command and control network. Iranian units focus training on defensive operations and entrenchments, particularly passive methods such as concealment and camouflage, and make extensive use of underground facilities and other hardened assets to better resist powerful, modernized forces who prefer to fight in open terrain. The IRGC and the Basij militia in particular are to commence a popular resistance, employing hybrid tactics to harass and disrupt enemy rear areas and inflict casualties. Elsewhere, air defense systems are expected to attrite extremely expensive and high-value aircraft in the air battle over Iran, and a variety of missile systems, small surface vessels, and submarines attempt to degrade enemy naval forces or interdict valuable shipping in and around the Persian Gulf.

The remaining chapters of the ATP discuss reconnaissance and security, offensive and defensive tactics, cyber and information warfare tactics, foreign involvement and terrorism, and internal security in enhanced detail. Most content will detail how each of these tactical tasks support the Mosaic Defense concept, giving the reader a holistic understanding the Iranian tactical approach. ◆

Basij militia members attend the annual Basij conference. Note the huge variety in clothing/uniforms, fitness, age, and probable readiness of the various members of the militia.

TRADOC G-2
SME CORNER

Past is Present: Continuity in Iranian Foreign Policy and Why it Matters

By **Joseph E. Fallon,** UK Defence Forum

The foreign policy pursued by the government of the Islamic Republic of Iran in the Middle East, Central Asia, and South Asia is rational and consistent. In fact, "many of Iran's foreign policy actions are similar to those undertaken by the Shah of Iran and prior Iranian dynasties,"[1] with the exception Tehran is now an adversary of the US, instead of an ally.

Iran is a phoenix nation. Erased from the map by the Arab Muslim invasion of the 7th century AD, Iran was resurrected 1000 years later as an independent Persian state by Shah Ismail in 1501. To insure the permanency of an independent Persian identity, Shah Ismail, through proselytization and violence,[2] converted the population to Shi'a Islam; thereby culturally separating Iranians from Sunni Arabs and Turks and from any allegiance to the Caliph of the Ottoman Empire[3,4] or any other outside power. (Map 1)

Since then, the foreign policy of every Iranian government, regardless of dynasty or ideology, has been defined by this history. The purpose of an Iranian government is to preserve the existing political establishment whose legitimacy depends on maintaining the independence and territorial integrity of the state. For the state is the defender of *Iranshahr*, the heartland of Persian-speakers. Since the 19th century, this is the territory enclosed within the borders of modern Iran.

The Safavids created modern Iran. The dynasty flourished for two centuries. But when it failed to preserve Iran's political borders, it was replaced by the Afsharids. Then came the Zands, Qajars, Pahlavis, and Ayatollahs. Regimes come and go. But Iran remains - independent and intact.

Historically, to protect *Iranshahr* Tehran must establish buffer zones to its west, Iraq, and east, Afghanistan

Map 1. Safavid Empire aka Persia.
Source: Fabienkhan / CC BY-SA 2.5 https://commons.wikimedia.org/wiki/File:Map_Safavid_persia.png

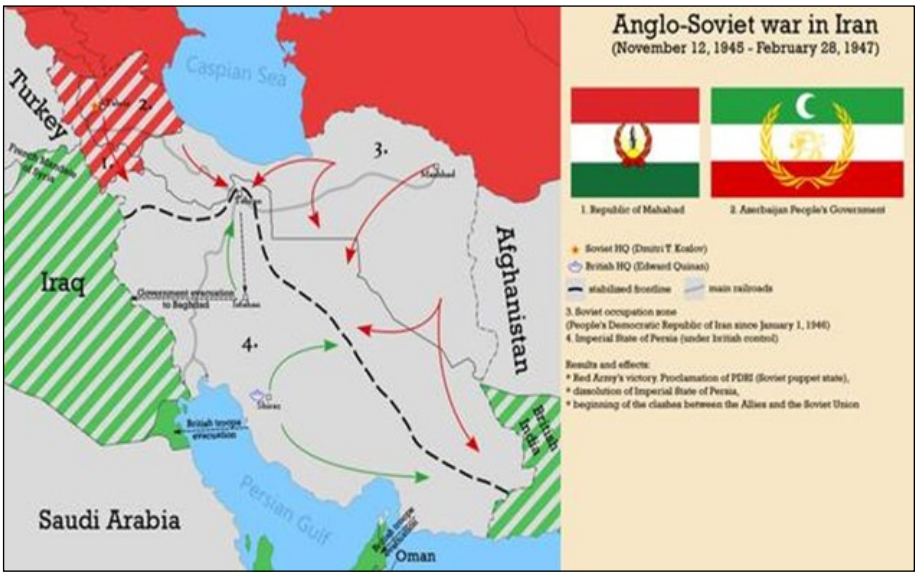
and Pakistan, ensuring those countries are allies or neutrals. Because when those lands are neither, they have been used as staging grounds for invasions of Iran by Ottomans, Uzbeks, Afghans, Russians, British, and Saddam Hussein. Twice, 1907 and 1941, Iran was nearly partitioned out of existence by the Russians and the British. (Maps 2 and 3)

This history has defined the foreign policy of Iran's political class - secular and sectarian, past and present. It is a mistake, therefore, to suggest that by pursuing this objective the Ayatollahs of Iran are seeking to reestablish the Persian Empire.

Such an analysis misunderstands the nature of both. The Persian Empire was a reversed image of the Islamic Republic. Any attempt by Tehran to emulate the Persian Empire would pose an existential threat to the Islamic Republic.

First, the Persian Empire was a non-Islamic state based on a more ancient monotheistic faith, Zoroastrianism.[5]

Map 2. Partition 1907.
Source: Fabienkhan / CC-BY-SA 2.5 https://commons.wikipedia.org/wiki/File:Map_Iran_1900-en.png



Map 3. Partition 1941.
Source: "World War II: Anglo-Soviet Invasion of Iran", Iran Review *August 24, 2016*
http://www.iranreview.org/content/Documents/World-War-II-Anglo-Soviet-Invasion-of-Iran.htm

Second, the Persian Empire permitted all religions to be freely practiced in the realm.[6]

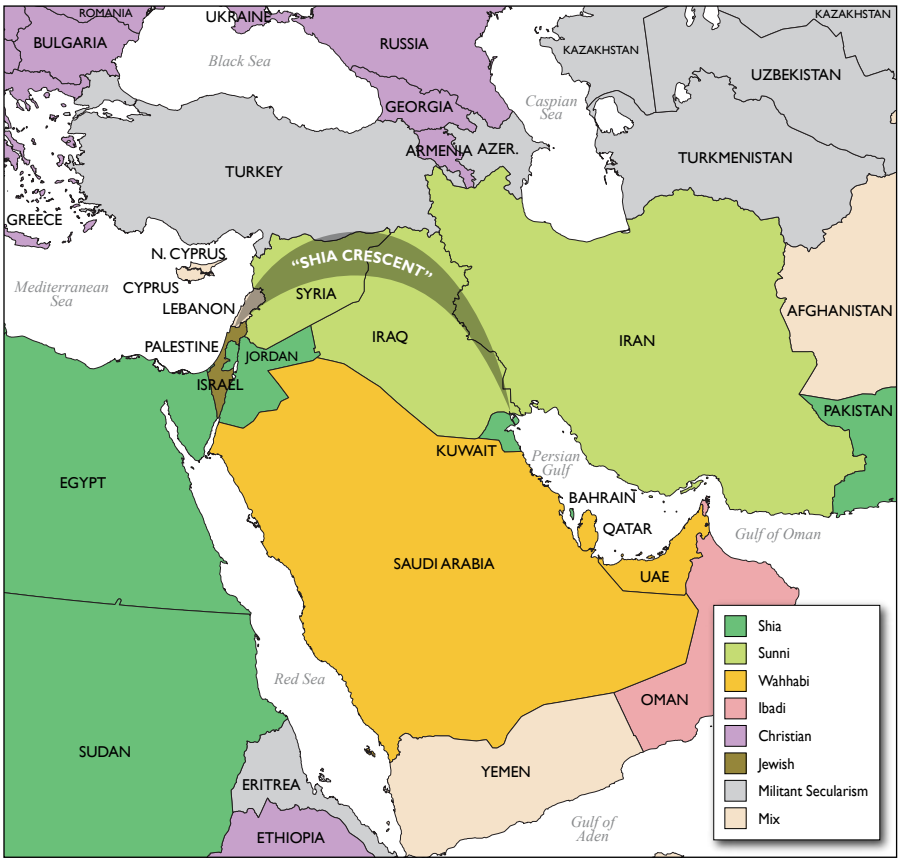
Third, the Persian Empire freed the Jews from Babylonian captivity, encouraged their return to the land of Israel, and then granted Israel a high degree of political autonomy within the empire.[7]

And fourth, the Persian Empire was the role model for the Shah of Iran, nemesis of the Ayatollahs. At a lavish coronation in 1967, he took the title of ancient Persian Emperors, *Shāhanshāh*;[8] in 1971 he sponsored an extravagant celebration on the 2,500th anniversary of the Persian Empire at Persepolis, ancient capital of the empire,[9] and in 1976 he replaced the Islamic Calendar with the Persian calendar of Cyrus the Great.[10]

The Ayatollahs are not attempting to resurrect the Persian Empire. After the failure to export the Iranian Revolution to Sunni states in 1979, and in the aftermath of the Iran-Iraq War (1980-1988), Tehran's focus is regime survival, which means insuring Iran's territorial integrity. To do this, Iran seeks to create an Islamic alliance, dominated by Tehran, stretching from the Mediterranean Sea to Central Asia. Such an alliance would be more durable than the Persian Empire, because it rests not on an "imperial" army and sovereign, but on bonds of a common religion, language and culture.

To its west, "Tehran is forming a 'land bridge' that connects Iran through Iraq to Syria, Lebanon, to the Israeli border at Golan. This is what's called the Shi'a Crescent."[11] It is facilitated by Iraqis,

Lebanese, and a significant number of Syrians,[12] sharing the same faith as Iranians - Shi'a Islam. (Map 4)



Map 4. Shi'a Crescent

Source: Adapted from M. Izady, "Emerging Shia 'Crescent' of Power in the Core of the Middle East", Gulf/2000 Project, SIPA Columbia University, New York City, 2008-2009, http://gulf2000.columbia.edu/images/maps/Shia_Crescent_sm.jpg

To its east, Tehran is promoting cultural ties among Afghans, Tajiks, and Iranians based on their shared Persian language and Persian heritage.[13,14,15] (Map 5)

Iran's foreign policy also has an offensive component directed at its political and religious rival, Saudi Arabia, on three fronts.

First is Bahrain, a strategic[16] and economic prize,[17] located sixteen miles off the Persian Gulf coast of Saudi Arabia. Iran defends the democratic rights of Shi'a, a disenfranchised majority (62%),[18] against Sunni rulers backed by Saudi Arabia.

Second is Yemen on Saudi Arabia's southwest border. Tehran is using the civil war in Yemen as a proxy war with Riyadh. With Iran arming Shi'a rebels (Houthis),[19] Saudi Arabia responded by militarily intervening to prevent the fall of the pro-Saudi government. But Riyadh failed to defeat the insurgents. The war is draining Saudi financial resources and alienating traditional allies, such as the US, Egypt and Pakistan.[20]

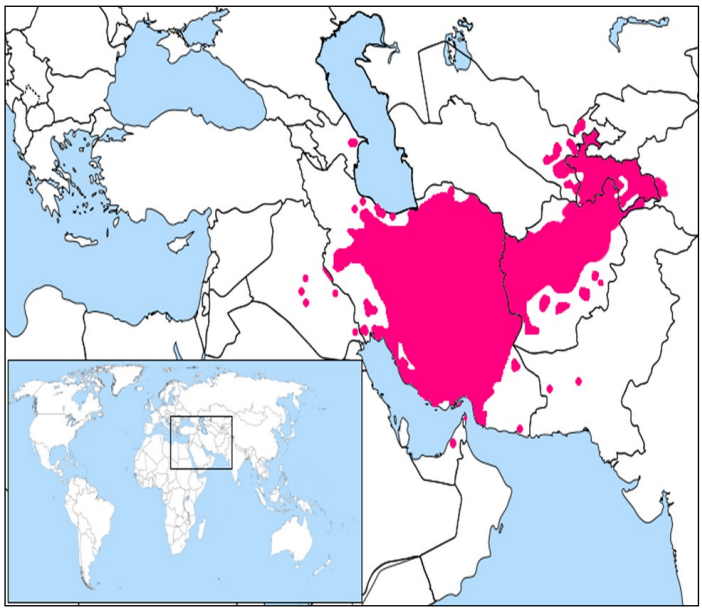
Third is Saudi Arabia's Eastern Province. Riyadh's wealth is principally derived from oil wells and reserves located there.[21] The Eastern Province borders the Persian Gulf; is approximately 200 miles from Iran;[22] and is inhabited by Shi'a (who are 10-15% of the Saudi population).[23] Historically persecuted by Riyadh,[24] Shi'a rebelled in 1979. Shi'a unrest erupted again in 2011, 2012, and has been ongoing since 2017.[25]

Why It Matters

Knowledge of the objective of Iran's foreign policy is necessary, if Washington is to make Tehran stop supporting terrorist groups and stop pursuing its nuclear program. Such knowledge of Iranian history provides an understanding of the impact and limitation of US actions, including military operations, on influencing Tehran's behavior.

Iranian nationalism created Iran and drives its foreign policy, which has successfully preserved the country's independence for 500 years. Contributing to this success is the landscape of Iran, which favors defense over offense. "Iran is a fortress. Surrounded on three sides by mountains and on the fourth by the ocean, with a wasteland at its center, Iran is extremely difficult to conquer."[26]

A US military attack on Iran to disarm or overthrow the regime would require boots on the ground. The



Map 5. Areas with Persian-speakers as mother tongue

Source: Wikipedia, 9 October 2007, https://commons.wikimedia.org/w/index.php?curid=3064301

success of such a US invasion and occupation of Iran is dubious. Washington would encounter a series of logistic and intelligence obstacles.

1. Iran is four times larger than Iraq.[27]
2. Iran's population is three times greater than Iraq's.[28]
3. Iran is three times larger than Afghanistan.[29]
4. Iran's population is two and half times greater than Afghanistan's.[30]
5. Iran's military strength is ranked 14 out of 138 countries.[31]
6. The US military would likely confront an unfriendly Persian-speaking majority population. Unlike Iraq, where the Arab majority is divided between hostile Sunni and Shi'a, which impedes their political collaboration, in Iran, a religious solidarity—the Persian speaking majority is Shi'a—would promote a political solidarity. This would likely make resistance to US forces, using the terrain as a force multiplier, more effective.
7. If US military operations included attacks on Iran's religious and/or cultural monuments, it would further inflame Iranian nationalism. Washington would likely lose the support of potential allies among Persian speaking opponents of the Ayatollahs.
8. If Washington seeks to weaken Persian Iran by politically fragmenting Iran along ethnic lines, Arab, Azeri, Baluch, and Kurd, it would also be unintentionally encouraging Baluch and Kurd secession in the adjacent states, which are US allies – Iraq, Pakistan, and Turkey.

Washington's best option is to tighten economic sanctions on Iran, with the explicit offer to remove all sanctions on the successful conclusion of negotiations based on Tehran's 2003 proposed "grand bargain". This Iranian document "…put everything on the table: Iran's support for terrorism, its nuclear program, even its hostility towards Israel. In exchange, Iran asked Washington for security guarantees, an end to sanctions and a promise never to push for regime change."[32]

US opposition is to Tehran's policy of supporting terrorists and pursuing a nuclear program. It is not with the Iranian government, per se, or the Iranian people, their religion, their history, their culture, or their country. ◆

---

1. Kenneth Katzman, "Iran's Foreign and Defense Policies", *Congressional Research Service*, Updated January 30, 2020, p. 2, https://fas.org/sgp/crs/mideast/R44017.pdf
2. Francis Robinson, editor, *The Cambridge Illustrated History of the Islamic World*, (Cambridge University Press, 1996), p. 72
3. "Caliph/Caliphate", The Oxford Dictionary of Islam, *Oxford Islamic Studies Online*, 2020, http://www.oxfordislamicstudies.com/article/opr/t125/e400
4. William Ochsenwald, "Islam in the Ottoman Empire", *Oxford Islamic Studies Online*, last reviewed, 19 May 2017, https://www.oxfordbibliographies.com/view/document/obo-9780195390155/obo-9780195390155-0155.xml
5. History.Com editors, "Persian Empire – Persian Religion", *History.Com*, last updated September 30, 2019, https://www.history.com/topics/ancient-middle-east/persian-empire
6. Ibid.
7. "Ancient Jewish History: The Persians", *Jewish Virtual Library*, Project of AICE, American-Israeli Cooperative Enterprise, 1998-2020, https://www.jewishvirtuallibrary.org/the-persians
8. "Shah of Iran's Coronation, 1967", *The Royal Watcher*, October 26, 2017, https://royalwatcherblog.com/2017/10/26/shah-of-irans-coronation-1967/
9. "From Tehran to Persepolis: All the Glitter of the Empire – The Persepolis Celebrations - 1971", http://www.angelfire.com/empire/imperialiran/index1.html
10. Mir M. Hosseini, "Iran Switches To Imperial Calendar", *Iranian History Today*, March 15, 1976, http://fouman.com/Y/Get_Iranian_History_Today.php?artid=1098
11. Patrick Clawson, Hanin Ghaddar, and Nader Uskowi,"What is the Shia Crescent?", *The Washington Institute for Near East Policy*, January 17, 2018, https://www.washingtoninstitute.org/policy-analysis/view/middle-east-faqs-volume-1-what-is-the-shia-crescent
12. Richard Spencer, "Who are the Alawites?", *The Telegraph*, 3 April 2016, https://www.telegraph.co.uk/news/2016/04/02/who-are-the-alawites/
13. Akhilesh Pillalamarri, "Afghanistan's Persian Linguistic Identity", *The Diplomat*, November 14, 2017 https://thediplomat.com/2017/11/afghanistans-persian-linguistic-identity/
14. Luciano Arvin, "Iran Courts Tajikistan", *The Diplomat*, May 31, 2017 https://thediplomat.com/2017/05/iran-courts-tajikistan/
15. "Rouhani: Iran to develop trade, economic, cultural cooperation with countries of Nowruz region", *The Iran Project*, March 28, 2014, https://theiranproject.com/blog/2014/03/28/rouhani-iran-to-develop-trade-economic-cultural-cooperation-with-countries-of-nowruz-region/
16. "The Strategic Importance of Bahrain to Saudi Arabia", *The Oil Drum*, June 29, 2011, https://oilprice.com/Geopolitics/Middle-East/The-Strategic-Importance-Of-Bahrain-To-Saudi-Arabia.html
17. "The Kingdom of Bahrain", *UNDP*, 2020, https://www.bh.undp.org/content/bahrain/en/home/countryinfo.html
18. David Pollock, "Sunnis and Shia in Bahrain: New Survey Shows Both Conflict and Consensus", *Fikra Forum*, The Washington Institute for Near East Policy, November 20, 2017, https://www.washingtoninstitute.org/fikraforum/view/sunnis-and-shia-in-bahrain-new-survey-shows-both-conflict-and-consensus
19. Jonathan Saul, Parisa Hafezi, Michael Georgy, "Exclusive: Iran steps up support for Houthis in Yemen's war – sources", *Reuters*, March 21, 2017, https://www.reuters.com/article/us-yemen-iran-houthis-idUSKBN16S22R
20. Yoel Guzansky Ari Heistein, "Saudi Arabia's War in Yemen Has Been a Disaster", *The National Interest*, March 25, 2018, https://nationalinterest.org/feature/saudi-arabias-war-yemen-has-been-disaster-25064
21. "Eastern Province", *Asharqia Chamber*, https://www.chamber.org.sa/sites/English/AboutKingdom/AbouttheEasternRegion
22. Graham Evans, "Persian Gulf", *Encyclopaedia Britannica*, 2020, https://www.britannica.com/place/Persian-Gulf
23. Adam Coogle, "Saudi Arabia's 'War on Terror' Is Now Targeting Saudi Shiites", *Foreign Policy*, August 23, 2017, https://www.hrw.org/news/2017/08/24/anti-shia-bias-driving-saudi-arabia-unrest
24. Adam Coogle, "Saudi Arabia's "Reforms" Don't Include Tolerance of Shia Community", *Human Rights Watch*, September 21, 2018, https://www.hrw.org/news/2018/09/21/saudi-arabias-reforms-dont-include-tolerance-shia-community
25. "2017–2020 Qatif unrest", *Wikipedia*, https://en.wikipedia.org/wiki/2017%E2%80%932020_Qatif_unrest
26. "The Geopolitics of Iran: Holding the Center of a Mountain Fortress", *Stratfor*, December 16, 2011, https://worldview.stratfor.com/article/geopolitics-iran-holding-center-mountain-fortress
27. Ibid.
28. Ibid.
29. "Country size comparison - Iran Compared to Afghanistan", *MyLifeElswhere.com*, 2020, https://www.mylifeelsewhere.com/country-size-comparison/iran/afghanistan
30. Ibíd.
31. "Iran Military Strength (2020)", *GlobalFirepower* (GFP), 2020, https://www.globalfirepower.com/country-military-strength-detail.asp?country_id=iran
32. "The 'Grand Bargain" Fax: A Missed Opportunity/", Showdown with Iran, *PBS*, posted October 23, 2007, https://www.pbs.org/wgbh/pages/frontline/showdown/themes/grandbargain.html

About the Author:
Joseph E. Fallon is a global political analyst with over 20 years' experience in strategic advisory, research/writing and teaching with specific subject-matter expertise in national defense/security, terrorism and geopolitics. Mr. Fallon is currently a Research Associate for the British think tank, UK Defence Forum, providing Members of Parliament with analyses of issues effecting British national security and defense; a Steering Committee member for the Working Group on Children Recruited by Terrorist and Violent Extremist Groups; and an international member of the board of the Romanian academic journal, *GeoPolitica*. He is the author of two books and over 80 published articles (e.g. Islamic extremism, US foreign policy). Mr. Fallon was formerly a Professor at the Middle East Regional Studies Program, US Army War College; an instructor on Afghanistan and Islamic Extremism at US Army Intelligence Center of Excellence; a Guest Lecturer on Afghanistan for the US Army Cultural Knowledge Consortium; and a Guest Lecturer on Central Asia and Iran at the Defense Institute of Security Assistance Management (DISAM).

TRADOC G-2
SME CORNER

Iran in Iraq

By **Michael Rubin, Ph.D.,** American Enterprise Institute

The 3 January 2020 MQ-9 Reaper strike which killed Iranian Quds Force chief Qassem Soleimani and Abu Mahdi al-Muhandis, the deputy chief of the Popular Mobilization Units, highlighted malign Iranian influence in Iraq.

Iran-Iraq relations are complex. Both Iran and Iraq are majority Shi'ite, but ethnic and national rivalries sow deep divisions. During the 1980-88 Iran-Iraq War, the majority of Iraqi soldiers were Shi'ite but remained loyal to Iraq; Arab ethnicity and national pride trumped sectarian solidarity. Most Iraqi Shi'ites also disagree with the theological notion of clerical rule (*velayat-e faqih*) that the late revolutionary leader Ayatollah Ruhollah Khomeini imposed in Iran. Iranian attempts to impose this theological interpretation on Iraqis have only heightened Iraqi resentment toward Iran. Iraqis often direct frustration at Iraq's economic unease upon Iran. Iraqis blame Iranian dumping of cheap manufactured goods for undercutting Iraq's fragile manufacturing and agricultural sectors. When agricultural run-off caused a massive fish-kill in the Tigris River, Iraqis embraced the conspiracy theory that Iranian agents poisoned the water in order to force Iraqis to purchase Iranian fish.[1]

Iran partisans in Iraq often cloak their militias' existence in the mantle of Grand Ayatollah Ali Sistani's *fatwa* (religious declaration) that led to the creation of the *hashd al-shaabi*, the so-called Popular Mobilization Forces which came into existence to fight the Islamic State. In reality, most of the Iranian-backed and directed groups were founded years prior to the Islamic State crisis. The Islamic Revolutionary Guard Corps founded the Badr Corps in 1982. Kata'ib Hezbollah has been active since October 2003. Asa'ib Ahl al-Haq was founded in July 2006, and Harakat Hezbollah al-Nujaba was formed in 2013. These groups freely acknowledge both loyalty to Iran's Supreme Leader Ali Khamenei and receipt of Iranian assistance. Declassified interrogation records of Qais Khazali, in coalition custody between 2007 and 2010, and today the secretary-general of Asa'ib Ahl al-Haq, detail Islamic Revolutionary Guard Corps training his group at bases near Tehran.[2] Such training fits a common pattern in which the Revolutionary Guards trains and supports proxy groups.

The *hashd al-shaabi* as a whole are more diverse and are not all under Iran's thumb. Not only Shi'ites but also Sunni, Christians, and Yezidis formed *hashd al-shaabi* groups. Iraqis also differentiate between groups staffed by those coming from across the country versus those who have more local origins. During the fight against the Islamic State, for example, many Shi'ites from Iraq's southern governorates joined units in the north, not only creating a security vacuum in southern cities and towns but also creating friction with local communities in the north. *Wasta* (nepotism) in Iraqi society is not only about getting a job, but also about de-confliction. If Iraqis ran into trouble at a *hashd al-shaabi* checkpoint, for example, or had a member of their family detained, they were much more likely able to resolve the problem without violence or lasting grievance if they could utilize local connections. This was largely impossible when *hashd al-shaabi* personnel from outside their immediate area dominated security. Likewise, local security forces are less likely to loot property in areas where they and their extended families might be known.

Anti-Iranian fervor inside Iraq reached a peak after Iranian-backed militias fired on crowds during anti-corruption protests that erupted on October 1, 2019. Senior Iraqi officials in both the executive and legislative branches privately say the violence caught then-Prime Minister Adil Abdul-Mahdi by surprise, and Abdul-Mahdi's mistake was trying to excuse and cover up the Iranian-backed militia role rather than address it directly. Every Iraqi prime minister since 2014 has privately acknowledged the threat Iranian-backed militias pose to the Iraqi state. Iraqi leaders see the role the Islamic Revolutionary Guard Corps and Basij play in Iran and understand the ramifications of allowing the Iranian-backed militias to fester. Why has the Iraqi government not cracked down harder on *hashd al-shaabi* abuses?

There are three reasons. First is power. Both Badr Corps leader Hadi Amiri and former Prime Minister Nouri al-Maliki utilize their connections and support for the *hashd al-shaabi* in order to bolster their influence in Iraq's rough-and-tumble political battles. Their *hashd al-shaabi* connections also compensate for a lack of support from Sistani and the broader religious establishment in Najaf.

Second is pragmatism. After Iraqi Kurds held a referendum on eventual independence not only for recognized portions of Iraqi Kurdistan, but also for the oil-rich territories claimed by both Iraqi Kurdistan and the Iraqi government in Baghdad, Iraqi forces and Iranian-backed *hashd al-shaabi* counterparts drove north into disputed areas. When faced with complaints about the Iranian role in the campaign, officials in then-Prime Minister Haider Abadi's office said that they utilized Iranian-backed groups because they were more disciplined and would not engage in spontaneous looting the way more *ad hoc* militias formed in the wake of the Islamic State's rise would.

The third reason is fear. The individual costs of opposing Iran-oriented militias are huge. The same Iraqi politicians who downplay Iranian influence in Iraq refuse to reverse illegal Iranian installation of donation boxes for charities like the Imam Khomeini Relief Committee so as not to precipitate a fight or antagonize the Iranian government. It is not uncommon for the Iranian government to use such charities to project influence. The Imam Khomeini Relief Committee, for example, highlights its charitable work such as the distribution of food, kerosene, and blankets but it also conducts more covert activities. The same networks used to distribute humanitarian supplies can distribute weaponry. A decade ago, for example, the US Treasury Department designated its Lebanese branch a supporter of terrorism "for being owned or controlled by Hizballah and for providing financial and material support to Hizballah."[3]

Rather than seek to consolidate control over the *hashd al-shaabi*, Iraq's senior leadership regularly passes the buck. When Najah al-Shammari, for example, assumed the ministry of defense portfolio in June 2019, he said he had no interest in reining in the *hashd al-shaabi* even though technically it was a military force subordinated to his ministry, as that was constitutionally the duty of the chief-of-staff, and that position was vacant at the time.[4] Shammari may have been right, but Iraqi leaders have long treated the constitution more as a suggestion than as inflexible law, and there was enough flexibility within the law to assert more unity of command had Shammari wished to pursue that goal.

While US military forces and civilian officials operating in Iraq are accustomed to the delicate balancing act with Iraqis over Iranian influence, there have been significant changes in recent months. Iran has plunged into recession and US sanctions have hit the Islamic Revolutionary Guard Corps and its associated businesses hard. Iraqi officials say that whereas the Quds Force—the special forces and external operations wing of the Revolutionary Guards—once subsidized Iraqi militias inside Iran, the flow of money is now reversed: Groups like Kataib Hezbollah and Asa'ib Ahl al-Haq now siphon money from their business interest in Iraq back into Iran. This creates a financial disincentive for both the Iraqi groups and Iran to allow political reforms that might loosen their grip to take hold, and may also explain their willingness to use lethal force against unarmed protesters.

While Prime Minister Mohammad Allawi seeks to guide Iraq to early elections and deliver the change the protest movement demands, other events may disrupt the relationship between Iraq and Iran. On 16 January 2020, Sistani underwent surgery for a fractured left thigh. While the 89-year-old cleric survived the surgery, the chance for complications remain high given his age. This raises the specter that he could pass away. Not only would Iraq lose a moderating figure that has long resisted Iranian diktats, but Iranian Supreme Leader Ali Khamenei and his clerical establishment will try to put forward a candidate for *marja'* more sympathetic to the Iranian regime's views; indeed, they tried already to do this with the Najaf-educated Mahmoud Hashemi Shahroudi, the former head of the Iranian judiciary, but the 70-year-old cleric succumbed to brain cancer in December 2018. Iranian efforts to promote a less independent successor to Sistani will not simply be an intellectual battle over religious discourse, but could also take a more violent dimension. It is for this reason as well the Islamic Republic is loath to cease its support for militia groups in Iran. Just as these groups inflicted unrestrained violence against peaceful protesters in Baghdad in recent months, they might easily be called upon to intimidate others seeking recognition as *marja'* in Najaf.

Iran-Iraq relations are complex but, simply put, Iranian authorities will never abandon their quest to dominate Iraq. Not only is their joint frontier the longest either country shares with a neighbor, but they remain economically intertwined because of Shi'ite pilgrimage and religious tourism. While many diplomats express hope for the reform movement in Iraq to triumph and while Iranian hardliners waste no effort to thwart their desires, the real Achilles' heel for the Iranian regime remains a free and independent Iraq. The Iranian supreme leader's claim to be the ultimate political and religious authority means that any independent cleric in the Iraqi shrine cities of Najaf and Karbala contradicting the Iranian supreme leader are directly undercutting his authority. This makes Iranian domination of Najaf and Karbala important to Iranian regime survival. Their aggressive effort both to keep Baghdad weak and fractured and to make inroads into Najaf and Karbala is not a behavior which they will

willingly mitigate. Soleimani's death may have changed the face of the struggle, but will not end it.

What does this mean for the United States? Iranian attempts to dominate Iraq will not dissipate, but Iraq's operational environment is not always as conducive for the Iranians as American analysts assume. The Iraqi strategy remains consistent. Iraqi officials in both the executive and legislative branches across Iraqi administrations say privately that the only way to counter Iranian influence effectively is to have an American presence remain so that Iraqi authorities can use the presence of the other to veto either Tehran or Washington's demands and carve out independent space for Iraqi action. When US forces temporarily withdrew in 2011, Iranian influence increased and American influence declined.

If the United States again withdrew its forces from Iraq, Iranian-backed militias if not the Islamic Revolutionary Guard Corps itself could grow more aggressive. Attacks on Saudi Arabia suggest that Iranian-backed militias already have missiles and unmanned aerial vehicles. If Iranians and Iranian-backed groups consolidate power in Iraq in the absence of US support for the Iraqi state, it is likely that they could act more openly because they would fear less efforts to prevent such regional aggression. Iranian consolidation of control over Iraqi territory would also enable the so-called land bridge which could provide arms more easily to Iranian proxy groups in Syria and Lebanon. A more sectarian, Iranian-dominated regime in Baghdad could also fan the flames of sectarianism and inflame the same forces that contributed to the rise of Islamic State. US policy, of course, could go in a number of directions in Iraq but whether with the presence of US troops or without it, Iranian designs on Iraq and Tehran's success or lack thereof will define the strategic environment in the region for years to come. ◆

1. "Fish deaths caused by water crisis, point to major crises facing Iraq," *The Baghdad Post*, 9 November 2018.
2. "Shi'a SDE Tactical Interrogation Report," Report No. 200243-008. 18 June 2007, 17:30.
3. "Fact Sheet: U.S. Treasury Department Targets Iran's Support for Terrorism Treasury Announces New Sanctions Against Iran's Islamic Revolutionary Guard Corps-Qods Force Leadership," U.S. Treasury Department, 3 August 2010.
4. Author interview with Najah al-Shammari, Baghdad, 1 June 2019.

About the Author:
Michael Rubin is a resident scholar at the American Enterprise Institute and a senior lecturer in the department of National Security Affairs at the Naval Postgraduate School.

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
1	M4 Carbine American 5.56mm Assault Rifle	America	✓	
2	M113A1 American Amphibious Armored Personnel Carrier (APC)	America		✓
3	M113 American Amphibious Armored Personnel Carrier (APC)	America		✓
4	YPR-765 (AIFV) American Infantry Fighting Vehicle (IFV)	America		✓
5	AIM-9 Sidewinder American Short-Range Air-to-Air Missile	America	✓	
6	AGM-65 Maverick American Air-to-Surface Missile	America	✓	
7	F-4 Phantom II American Fighter-Bomber Aircraft	America		✓
8	Zuni American 5-inch Folding-Fin Aircraft Rocket (FFAR)	America	✓	
9	M134 Minigun American 7.62mm Six-Barrel Rotary Machine Gun	America	✓	
10	AGM-84 (Harpoon) American Anti-Ship Missile	America	✓	
11	Titan American Unmanned Ground Vehicle (UGV)	America	✓	
12	Ripsaw American Unmanned Light Tank	America	✓	
13	Kel-Tec KSG American 12-Gauge Pump-Action Shotgun	America	✓	
14	FIM-92 Stinger American Man-Portable Air-Defense System (MANPADS)	America		✓
15	M16 American Bounding Anti-Personnel Mine	America		✓
16	Beretta 92FS American Semi-Automatic Pistol	America	✓	
17	SIG Sauer M17 American 9mm Semi-Automatic Pistol	America	✓	
18	MIM-23A Hawk American Surface-to-Air Missile (SAM) System	America		✓
19	F470 Zodiac American Combat Rubber Raiding Craft (CRRC)	America	✓	
20	MIM-23B I-Hawk American Surface-to-Air Missile (SAM) System	America		✓
21	M15 American Anti-Tank Blast Mine	America		✓
22	M7A2 American Anti-Vehicle Mine	America		✓
23	M14 (Toepopper) American Anti-Personnel Mine	America		✓
24	Barrett M82 (M107) American Semi-Automatic Anti-Material Rifle	America		✓
25	Barrett M82 (M107) American Semi-Automatic Anti-Material Rifle	America	✓	
26	M2 Browning American .50 Caliber Heavy Machine Gun	America		✓
27	SIG Sauer M18 American 9mm Semi-Automatic Pistol	America	✓	
28	M67 American Fragmentation Grenade	America	✓	
29	Mk 2 American Time-Fused Grenade	America	✓	
30	MK3 American Concussion Grenade	America	✓	
31	Atchisson (AA-12) American Auto-Assault Shotgun	America	✓	
32	Mossberg 500 American 12-Gauge Pump-Action Shotgun	America	✓	
33	M202 FLASH American 66mm Rocket Launcher Flamethrowers	America	✓	
34	Cadillac Gage Commando American 4x4 Light Armored Vehicle	America	✓	
35	Cougar H American 4x4 Mine-Resistant Ambush Protected (MRAP) Vehicle	America	✓	
36	Cougar HE American 6x6 Mine-Resistant Ambush Protected (MRAP) Vehicle	America	✓	
37	M16A1 American 5.56mm Assault Rifle	America	✓	
38	M16A2 American 5.56mm Assault Rifle	America	✓	
39	M16A4 American 5.56mm Assault Rifle	America	✓	
40	M110A2 American 203mm Self Propelled Howitzer	America		✓
41	M115 American 203mm Towed Howitzer	America		✓
42	M110A1 American 203mm Self-Propelled Howitzer (SPH)	America		✓
43	M19 American Anti-Tank Blast Mine	America		✓
44	M18A1 Claymore American Anti-Personnel Mine	America		✓
45	Tomahawk American Land Attack Cruise Missile	America	✓	
46	M4 Carbine American 5.56mm Assault Rifle	America		✓
47	M48 Patton American Main Battle Tank (MBT)	America	✓	
48	M60D American 7.62mm General-Purpose Machine Gun	America	✓	
49	M60 American 7.62mm General-Purpose Machine Gun	America	✓	
50	M73 Machine Gun American 7.62mm Medium Machine Gun	America	✓	
51	M240 American 7.62mm General-Purpose Machine Gun	America	✓	
52	M48A5 American Main Battle Tank (MBT)	America	✓	
53	M60 American Main Battle Tank (MBT)	America	✓	
54	M85 American 12.7mm Heavy Machine Gun	America	✓	
55	M60A1 American Main Battle Tank (MBT)	America	✓	
56	AN/TWQ-1 Avenger American 4x4 Mobile Air Defense Missile System	America	✓	
57	M47 Patton American Main Battle Tank (MBT)	America	✓	
58	M1919 Browning American 7.62mm Medium Machine Gun	America	✓	
59	MK 19 American 40mm Grenade Launcher	America	✓	
60	Santa Cruz Class (TR-1700 Class) Argentinian Diesel-Electric Patrol Submarine	Argentina	✓	
61	Almirante Brown Class Argentinian Guided Missile Destroyer	Argentina	✓	
62	F1 Australian Time-Fused Grenade	Australia	✓	
63	Collins Class Australian Diesel-Electric Submarine	Australia	✓	

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
64	Hobart Class Australian Destroyer	Australia	✓	
65	Anzac Class Australian Frigate	Australia	✓	
66	Helkir Austrian Anti-Helicopter Mine	Austria		✓
67	Glock 17 Austrian 9mm Semi-Automatic Pistol	Austria	✓	
68	T38 Stilet Belarusian Short-Range Air Defense System	Belarus	✓	
69	PRB M3/PRB M3A1 Belgian Anti-Tank Blast Mine	Belgium		✓
70	PRB M35 Belgium Anti-Personnel Mine	Belgium		✓
71	Blowpipe British Man-Portable Air Defense Missile System (MANPAD)	British	✓	
72	Chieftain MK 3 British Main Battle Tank (MBT)	British	✓	
73	AHM-200 Bulgarian Anti-Helicopter Mine	Bulgaria		✓
74	ERYX Canadian Short-Range Portable Anti-Tank Guided Missile (ATGM)	Canada		✓
75	GC-45 Canadian 155mm Towed Gun / Howitzer	Canada		✓
76	ZZH-09 (Type 09) Chinese 8x8 Amphibious Armor Personnel Carrier (APC)	China		✓
77	WZ-523 (Type 05P) Chinese 6x6 Amphibious Armor Personnel Carrier (APC)	China		✓
78	CSK-131 (Dongfeng CSK131) Chinese 4x4 Light Tactical Vehicle	China		✓
79	Type 63 (YW531) Chinese Armored Personnel Carrier (APC)	China		✓
80	CSK-141 (Dongfeng CSK141) Chinese 4x4 Tactical Vehicle	China		✓
81	ZBD-04 (Type 4) Chinese Amphibious Infantry Fighting Vehicle (IFV)	China		✓
82	ZBD-05 (Type 05) Chinese Amphibious Infantry Fighting Vehicle (IFV)	China		✓
83	Hong Jian-9 (HJ-9) Chinese Air-to-Surface Missile	China	✓	
84	HJ-10 (Red Arrow 10) Chinese Air-to-Surface Missile	China	✓	
85	TY-90 Chinese Air-to-Air Missile	China	✓	
86	Z-8 (Zhishengji-8) Chinese Multi-Role Helicopter	China		✓
87	YJ-8/C-802 (NATO: CSS-N-4 Sardine) Chinese Air-to-Surface Missile	China	✓	
88	YJ-83 (CSS-N-8 Saccade) Chinese Anti-Ship Cruise Missile	China	✓	
89	Z-19 (WZ-19) Chinese Reconnaissance/Attack Helicopter	China		✓
90	Xian H-6 Chinese Strategic Bomber	China	✓	
91	SY-1 (Silkworm) Chinese Anti-Ship Missile	China	✓	
92	YJ-6 Chinese Air-to-Surface Missile	China	✓	
93	J-7 (Fishcan) Chinese Fighter Aircraft	China		✓
94	F-7 (Airguard) Chinese Fighter Aircraft	China		✓
95	HQ-10 (SA-20 Gargoyle) Chinese Long-Range Air Defense Missile System	China	✓	
96	J-8 Chinese Interceptor Fighter Aircraft	China		✓
97	J-6 (Farmer) Chinese Fighter Aircraft	China		✓
98	Q-5 (Fantan) Chinese Attack Aircraft	China		✓
99	ZTL-11 Chinese 105mm Armored Fighting Vehicle	China		✓
100	Type 92B Chinese 4x4 Anti-Tank Guided Missile Carrier	China		✓
101	Type 59 Chinese Main Battle Tank (MBT)	China	✓	
102	QJZ-89 (Type 89) Chinese 12.7mm Heavy Machine Gun	China	✓	
103	Type 63 Chinese 107mm Multiple Rocket Launcher (MRL)	China		✓
104	QLZ-87 Chinese 35mm Automatic Grenade Launcher (AGL)	China		✓
105	QN-506 Chinese Infantry Fighting Vehicle (IFV)	China		✓
106	Liaoning (16) Chinese Type 001 Aircraft Carrier	China	✓	
107	Kunming (LUYANG III Class) Chinese Type 052D Destroyer	China	✓	
108	ASN-105 Chinese Unmanned Aerial Vehicle (UAV)	China	✓	
109	Wing Loong I Chinese Medium-Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV)	China		✓
110	Type 90B Chinese 122mm Self-Propelled Multiple Launch Rocket System	China		✓
111	FB-6A Chinese 4x4 Mobile Short-Range Air Defense System	China		✓
112	Type 80 (ZTZ80) Chinese Main Battle Tank (MBT)	China	✓	
113	Type 77 Chinese 12.7mm Heavy Machine Gun	China	✓	
114	Type 80 Chinese General-Purpose Machine Gun	China	✓	
115	Type 88 (ZTZ88) Chinese Main Battle Tank (MBT)	China	✓	
116	Type 15 (ZTQ-15) Chinese Main Battle Tank (MBT)	China	✓	
117	QLZ-04 Chinese 37mm Automatic Grenade Launcher	China	✓	
118	W85 Chinese 12.7mm Heavy Machine Gun	China	✓	
119	Type 67 Chinese 7.62mm General-Purpose Machine Gun	China	✓	
120	ZBD-08 (WZ502G) Chinese Infantry Fighting Vehicle (IFV)	China	✓	
121	Type 57 Chinese 7.62mm Medium Machine Gun	China	✓	
122	HQ-17A Chinese Short-Range Air Defense Missile System	China	✓	
123	Shandong (17) Chinese Type 001A Aircraft Carrier	China	✓	
124	Type 071 Class (Yuzhao) Chinese Amphibious Transport Dock	China	✓	
125	Type 072A Class (Yuting II) Chinese Landing Ship	China	✓	
126	Type 093 Class (Shang Class) Chinese Nuclear-Powered Attack Submarine	China	✓	

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
127	Type 094 Class (Jin Class) Chinese Nuclear-Powered Ballistic Missile Submarine (SSBN)	China	✓	
128	JL-2 (CSS-N-14) Chinese Intercontinental-Range Submarine-Launched Ballistic Missile (SLBM)	China	✓	
129	Type 052C Class (Luyang II Class) Chinese Destroyer	China	✓	
130	YJ-62 Chinese Anti-Ship Cruise Missile	China	✓	
131	C-602 Chinese Anti-Ship Cruise Missile	China	✓	
132	CM-602G Chinese Cruise Missile	China	✓	
133	Type 051B Class (Luhai Class) Chinese Destroyer	China	✓	
134	Type 054A Class (Jiangkai Class) Chinese Frigate	China	✓	
135	Type 56 Class (Jiangdao Class) Chinese Corvette	China	✓	
136	Type 903 Class Chinese Replenishment Ship	China	✓	
137	Type 901 Class Chinese Fast Combat Support Ship	China	✓	
138	Type 904 Class (Dayun Class) Chinese General Stores Issue Ship	China	✓	
139	Type 22 Class (Houbei Class) Chinese Fast Attack Missile Boat	China	✓	
140	Type 920 Class (Daishan Dao Class) Chinese Hospital Ship	China	✓	
141	Type 632 Class (Fulin Class) Chinese Oil Tanker	China	✓	
142	PGZ-07/PGZ-09 Chinese 35mm Self-Propelled Anti-Aircraft Gun	China		✓
143	Type 90 (PG99) Chinese 35mm Towed Anti-Aircraft Gun	China		✓
144	HQ-9 (Hong Qi 9) Chinese 8x8 Long-Range Air Defense Missile System	China		✓
145	Taian TA5380 Chinese 8x8 Special Wheeled Chassis	China	✓	
146	HT-233 Chinese 8x8 Self-Propelled Engagement Radar System	China	✓	
147	FN-6 Chinese Man-Portable Air Defence System (MANPADS)	China		✓
148	Type 65 Chinese 37mm Twin-Barrel Anti-Aircraft Gun	China	✓	
149	HQ-16 Chinese 6x6 Medium-Range Surface-to-Air Missile System	China		✓
150	Yitian Chinese 6x6 Self-Propelled Short-Range Air-Defense System	China		✓
151	Wing Loong II Chinese Medium-Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV)	China		✓
152	GCZ-112 Chinese Tracked Multi-Purpose Engineer Vehicle (TMPEV)	China		✓
153	Type 69 Chinese Anti-Personnel Mine	China		✓
154	GCZ-110 Chinese Tracked Multi-Purpose Engineer Vehicle (TMPEV)	China		✓
155	Type 72 Chinese Landmine	China		✓
156	GSL-130 Chinese Tracked Comprehensive Mine Clearing Vehicle (TCMCV)	China		✓
157	QLZ-87 Chinese 35mm Automatic Grenade Launcher (AGL)	China		✓
158	QBZ-95 Chinese 5.8mm Bullpup-Style Assault Rifle	China		✓
159	Type 54 Chinese 12.7mm Heavy Machine Gun	China	✓	
160	PF-98 (Type 98) Chinese 120mm Anti-Tank Rocket Launcher	China		✓
161	HJ-73 (Red Arrow-73) Chinese Man-Portable Anti-Tank Guided Missile (ATGM) System	China		✓
162	HJ-9 (Red Arrow-9) Chinese Anti-Tank Guided Missile (ATGM) System	China		✓
163	HJ-8 (Red Arrow 8) Chinese Anti-Tank Guided Missile (ATGM) System	China		✓
164	VN-17 Chinese Tracked Infantry Fighting Vehicle (IFV)	China		✓
165	Tiger Type (Tiger 2065) Chinese Heavy 4x4 Armored Personnel Carrier (APC)	China		✓
166	VN-3 Chinese 4x4 Armored Scout Car	China		✓
167	ZBD-03 (WZ506) Chinese Airborne Infantry Fighting Vehicle (IFV)	China	✓	
168	Type 63-1 Chinese 60mm Mortar	China	✓	
169	EQ2102 Chinese Transportation Vehicle for the UA ASN-207	China	✓	
170	PLL-09 (Type 09) Chinese 122mm Self Propelled Howitzer	China		✓
171	PLZ-05 (Type 05) Chines 155mm Self Propelled Howitzer	China		✓
172	PLL-05 (Type 05) Chinese 120mm Self Propelled Mortar	China		✓
173	SH-3 Chinese 122mm Self Propelled Howitzer	China		✓
174	SH-2 Chinese 122mm Self Propelled Howitzer	China		✓
175	SR-5 Chinese Guided Multiple Launch Rocket System	China		✓
176	BL-904 Chinese Artillery Locating Radar	China	✓	
177	59-1 Chinese 130mm Towed Artillery	China		✓
178	Type 63 Chinese 107mm Multiple Rocket Launcher (MRL)	China		✓
179	AH-1/AH-1A Chinese 155mm Towed Artillery	China		✓
180	Type 83 Chinese 152mm Self-Propelled Howitzer (SPH)	China		✓
181	SH-1 Chinese 155mm Self Propelled Howitzer (SPH)	China		✓
182	PHL-03 Chinese 300mm Multiple Rocket Launcher (MRL)	China		✓
183	PLZ-45 (Type 88) Chinese 155mm Self-Propelled Howitzer (SPH)	China		✓
184	Type 56 Chinese 14.5-mm Towed Anti-Aircraft Gun	China	✓	
185	Type 58 Chinese 14.5mm Towed Anti-Aircraft Gun	China	✓	
186	PT-Mi-Ba-III Czechoslovakian Anti-Tank Blast Mine	Czechoslovakia		✓
187	PT-Mi-Ba II Czechoslovakian Anti-Tank Blast Mine	Czechoslovakia		✓
188	PP-Mi-Sr II czechoslovakian Anti-Personnel Mine	Czechoslovakia		✓
189	PT-Mi-K Czechoslovakian Anti-Tank Landmine	Czechoslovakia		✓

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
190	MT-55A Czechoslovakian Self-Propelled Armoured Bridgelayer	Czechoslovakia		✓
191	Aero L-39 Czechoslovakian Light-Ground Attack Aircraft	Czechoslovakia	✓	
192	L-39 Albatros Czechoslovakian Attack Aircraft	Czechoslovakia		✓
193	Iver Huitfeldt Class Danish Frigate	Denmark	✓	
194	ENS Gamal Abdel Nasser Egyptian Amphibious Assault Ship	Egypt	✓	
195	ENS Anwar El Sadat Egyptian Amphibious Assault Ship	Egypt	✓	
196	Eurofighter Typhoon EF-2000 European Multirole Fighter Aircraft	Europe		✓
197	Tornado European Multirole Aircraft	Europe		✓
198	R440 Crotale French 4x4 Short-Range Air Defense Missile System	France	✓	
199	MIACAH F1 French Anti-Tank Landmine	France		✓
200	M61 (Piquet) French Anti=Personnel Mine	France		✓
201	RASIT French 6x6 Ground-Surveillance Pulse Doppler Radar Vehicle	France		✓
202	Mle 1951 (MI AP ID 51) French Anti-Personnel Blast Mine	France		✓
203	MILAN 1 French Anti-Tank Guided Missile (ATGM)	France		✓
204	FN MAG French 7.62mm General-Purpose Machine Gun	France		✓
205	FN FAL French 7.62mm Automatic Battle Rifle	France		✓
206	MILAN ER French Anti-Tank Guided Missile (ATGM) System	France		✓
207	AMX-10P French Amphibious Infantry Fighting Vehicle (IFV)	France		✓
208	MO-120-RT French 120-mm Mortar	France		✓
209	Caesar French 155mm Self Propelled Howitzer	France		✓
210	AU-F1 155mm French Self-Propelled Gun (SPG)	France		✓
211	Panhard VBL French 4x4 Scout Car	France	✓	
212	AA-52 French 7.62mm General-Purpose Machine Gun	France	✓	
213	Panhard VBL French 4x4 Light Armored Car	France	✓	
214	R550 Magic 2 French Short-Range Air-to-Air Missile	France	✓	
215	AS-30L French Short-to-Medium Range Air-to-Ground Missile	France	✓	
216	AM 39 Exocet French Anti-Ship Missile	France	✓	
217	Mirage F1 French Fighter Aircraft	France	✓	
218	Super 530F French Medium-Range Air-to-Air Missile	France	✓	
219	Matra R.530 French Short-Range Air-to-Air Missile	France	✓	
220	Super 530D French Medium-Range Air-to-Air Missile	France	✓	
221	Rafale French Multirole Fighter Aircraft	France		✓
222	Mirage III French Fighter Aircraft	France		✓
223	Mistral French Air-to-Air Missile	France	✓	
224	Crotale-NG French Short-Range Air Defense System	France		✓
225	MILAN 2 French Anti-Tank Guided Missile (ATGM) System	France		✓
226	MILAN 1 French Anti-Tank Guided Missile (ATGM) System	France		✓
227	MILAN 2T French Anti-Tank Guided Missile (ATGM) System	France		✓
228	MILAN 3 French Anti-Tank Guided Missile (ATGM) System	France		✓
229	MILAN ER French Anti-Tank Guided Missile (ATGM) System	France		✓
230	Mistral (Mistral Class) French Amphibious Assault Ship	France	✓	
231	Mistral Franch Man-Portable Air-Defense System (MANPADS)	France	✓	
232	M621 French 20mm Automatic Cannon	France	✓	
233	Charles De Gaulle Class French Nuclear-Powered Aircraft Carrier	France	✓	
234	Suffren Class (Barracuda Class) French Nuclear Attack Submarine	France	✓	
235	SM39 Exocet French Anti-Ship Cruise Missile	France	✓	
236	Missile de Croisière Naval French Long-Range Cruise Missile	France	✓	
237	Dupuy De Lome Class French Intelligence Collection Ship	France	✓	
238	CAC Fox French Unmanned Aerial Vehicle (UAV)	France		✓
239	SIG Sauer P228 (M11) German 9mm Semi-Automatic Pistol	German	✓	
240	Handflammpatrone DM34 German Single-Shot Disposable Incendiary Weapon	German	✓	
241	Liebherr FKL German All-Terrain Crane	Germany	✓	
242	Oste Class (Type 423 Class) German Intelligence Collection Ship	Germany	✓	
243	Mauser BK-27 German 27mm Revolver Cannon	Germany	✓	
244	DM-11 German Anti-Tank Blast Mine	Germany		✓
245	PARM 1 (DM-12) German Off-Route Mine	Germany		✓
246	PARM 2 German Off-Route Mine	Germany		✓
247	Panzerfaust 3 German 60mm Anti-tank Grenade Launcher (ATGL)	Germany		✓
248	PM-60 (K-1) German Anti-Tank Blast Mine	Germany		✓
249	G3 Heckler and Koch German 7.62mm Select-Fire Battle Rifle	Germany		✓
250	Rheinmetall MG 3 German 7.62mm General-Purpose Machine Gun	Germany		✓
251	Armbrust (Crossbow) German 67mm Unguided Anti-Tank Recoilless Weapon	Germany		✓
252	Panzerfaust 3 German 60mm Anti-tank Grenade Launcher (ATGL)	Germany		✓

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
253	Heckler & Koch HK417 German 7.62mm Battle Rifle	Germany	✓	
254	Marder 1A3 German Infantry Fighting Vehicle (IFV)	Germany		✓
255	Heckler & Koch HK416 German 5.56mm Assault Rifle	Germany	✓	
256	Heckler & Koch M27 German 5.56mm Assault Rifle	Germany	✓	
257	Heckler & Koch G36 German 5.56mm Assault Rifle	Germany	✓	
258	Heckler & Koch MG36 German 5.56mm Light Machine Gun	Germany	✓	
259	Heckler & Koch G36V German 5.56mm Assault Rifle	Germany	✓	
260	Heckler & Koch G36A2 German 5.56mm Assault Rifle	Germany	✓	
261	Heckler & Koch G36K German 5.56mm Carbine Rifle	Germany	✓	
262	Heckler & Koch G36C German 5.56mm Carbine Rifle	Germany	✓	
263	Unimog 4023 German 4x4 Light Utility Vehicle	Germany		✓
264	FV101 Scorpion 90 British Amphibious Combat Reconnaissance Vehicle	Great Britain		✓
265	FV103 Spartan British Amphibious Armored Personnel Carrier (APC)	Great Britain		✓
266	FV107 Scimitar British Armored Reconnaissance Vehicle	Great Britain		✓
267	FV106 Samson British Armored Recovery Vehicle	Great Britain		✓
268	BL755 British Cluster Bomb	Great Britain	✓	
269	Rapier British Towed Surface-to-Air Missile System	Great Britain	✓	
270	AX50 British 12.7mm Anti-Material Rifle	Great Britain	✓	
271	Mk 3 British Anti-Tank Mine	Great Britain		✓
272	Mk 7 British Anti-Tank Blast Mine	Great Britain		✓
273	Starstreak British Short-Range Man-Portable Air-Defense System (MANPADS)	Great Britain		✓
274	Supacat British 6x6 Amphibious All-Terrain Vehicle	Great Britain	✓	
275	FV104 Samaritan British Armored Ambulance	Great Britain		✓
276	FV 510 Warrior British Infantry Fighting Vehicle (IFV)	Great Britain		✓
277	Ypoploiarchos Votsis (Combattante IIa Class) Greek Fast Attack Craft	Greece	✓	
278	UKA-63 Hungarian Multipurpose Landmine	Hungary		✓
279	AK-63 (AMM) Hungarian 7.62mm Assault Rifle	Hungary		✓
280	INS Vikrant Class Indian Aircraft Carrier	India	✓	
281	INS Vikramaditya Class Indian Aircraft Carrier	India	✓	
282	Shivalik Class (Project 17 Class) Indian Frigate	Indian	✓	
283	Bung Tomo Class Indonesian Corvette	Indonesia	✓	
284	Aerosky Israeli Unmanned Aerial Vehicle	Irael	✓	
285	Pantsir-S1 (SA-22 Greyhound) Iranian Short-Range Air Defense Gun/Missile System	Iran		✓
286	Ra'ad (Thunder) Iranian Medium-Range Surface-to-Air Missile (SAM) System	Iran		✓
287	AT-4-EX Iranian 84mm Single-Use Anti-Tank Recoilless Rifle	Iran		✓
288	RPG-29 (Vampir) Iranian 105mm Rocket-Propelled Grenade (RPG) Launcher	Iran		✓
289	RPG-29 (Vampir) Iranian 105mm Rocket-Propelled Grenade (RPG) Launcher	Iran		✓
290	2S1 (Gvozdika) Iranian 122mm Self Propelled Howitzer	Iran		✓
291	M107 Iranian 175mm Self Propelled Gun	Iran		✓
292	Fadjr-5 Iranian 333mm Multiple Launch Rocket System (MLRS)	Iran		✓
293	Hadid HM20 Iranian 122mm Multiple Launch Rocket System (MLRS)	Iran		✓
294	Naze'at 6-H Iranian Close Range Ballistic Missile	Iran		✓
295	M-46 Iranian 130mm Towed Gun	Iran		✓
296	D-30 Iranian 122mm Towed Gun Howitzer	Iran		✓
297	Type 63 Iranian 107mm Multiple Rocket Launcher (MRL)	Iran		✓
298	2S1 (Gvozdika) Iranian 122mm Self-Propelled Howitzer (SPH)	Iran		✓
299	Raad-2M Iranian 155mm Self-Propelled Howitzer (SPH)	Iran		✓
300	BTR-60 (Export) Iranian 8x8 Amphibious Armored Personnel Carrier (APC)	Iran		✓
301	BTR-80 (Export) Iranian 8x8 Amphibious Armored Personnel Carrier (APC)	Iran		✓
302	Rapier (Export) Iranian Surface-to-Air Missile System	Iran	✓	
303	Misagh-1 Iranian Man-Portable Surface-to-Air Missile System (MANPADS)	Iran	✓	
304	Misagh-2 Iranian Man-Portable Surface-to-Air Missile System (MANPADS)	Iran	✓	
305	9K310 Igla-1 (SA-16 Gimlet) (Export) Iranian Man-Portable Air-Defense Systems (MANPADS)	Iran	✓	
306	9K38 Igla (SA-18 Grouse) (Export) Iranian Man-Portable Air-Defense Missile System (MANPADS)	Iran	✓	
307	Crotale-NG (Export) Iranian Short-Range Air Defense System	Iran	✓	
308	Shahab Saghib (Shooting Star) Iranian Short-Range Air Defense Missile System	Iran	✓	
309	SAM-6 (Gainful) Iranian Surface-to-Air Missile System	Iran	✓	
310	SAM-15 (SA-15 Gauntlet) Iranian Short-Range Surface-to-Air Missile (SAM) System	Iran	✓	
311	SAM-14 (SA-14 Gremlin) Iranian Man-Portable Air Defense Missile System (MANPADS)	Iran	✓	
312	SAM-14 (SA-16 Gimlet) Iranian Man-Portable Air-Defense Systems (MANPADS)	Iran	✓	
313	M-1954 (M-46) Iranian 130mm Towed Gun	Iran		✓
314	Kaman (Kaman Class) Iranian Fast Attack Craft	Iran	✓	
315	Khordad-3 Iranian Medium-Range Surface-to-Air Missile (SAM) System	Iran		✓

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
316	Ghadir 942 (Ghadir Class) Iranian Midget Submarine	Iran	✓	
317	Shafaq Iranian Air-to-Surface Rocket	Iran	✓	
318	BMP-1 Iranian Amphibious Infantry Fighting Vehicle (IFV)	Iran		✓
319	Boragh Iranian Amphibious Armored Personnel Carrier (APC)	Iran	✓	
320	Rakhsh Iranian 4x4 Armored Personnel Carrier (APC)	Iran	✓	
321	AT-5 Towsan Iranian Anti-Tank Guided Missile (ATGM)	Iran		✓
322	9M14 Malyutka (AT-3 Sagger) Iranian Anti-Tank Guided Missile (ATGM)	Iran		✓
323	Oerlikon GDF-001 Iranian 35mm Towed Anti-Aircraft Gun	Iran		✓
324	D-20 Iranian 152mm Towed Gun / Howitzer	Iran		✓
325	GHN-45 Iranian 155mm Towed Gun / Howitzer	Iran		✓
326	M114A1 Iranian 155mm Towed Howitzer	Iran		✓
327	BM-21 Grad (Export) Iranian 122mm Multiple Rocket Launcher (MRL)	Iran		✓
328	Paykan (Sina Class) Iranian Fast Attack Craft	Iran	✓	
329	Laith-90 Iraqi Medium-Range Artillery Rocket System	Iraq	✓	
330	Spike Israeli Anti-tank Guided Missile (ATGM) System	Israel		✓
331	MATADOR Israeli 90mm Man-Portable Anti-Tank Anti Door Weapon System	Israel	✓	
332	Mini Uzi Israeli 9mm Submachine Gun	Israel	✓	
333	Uzi Israeli 9mm Submachine Gun	Israel		✓
334	Micro Uzi Israeli 9mm Submachine Gun	Israel	✓	
335	Uzi Pro Israeli 9mm Submachine Gun	Israel	✓	
336	Sholef Israeli 155mm Self-Propelled Howitzer	Israel	✓	
337	Hermes 900 Israeli Unmanned Aerial Vehicle (UAV)	Israel		✓
338	Skylark III Israeli Unmanned Aerial Vehicle (UAV)	Israel		✓
339	Bird-Eye 400 Israeli Reconnaissance Unmanned Aerial Vehicle (UAV)	Israel		✓
340	Aspide Italian Air-to-Air Missile	Italian	✓	
341	Valmara 69 Italian Bouncing Anti-Personnel Mine	Italy		✓
342	VS-50 Italian Anti-Personnel Blast Mine	Italy		✓
343	SB-33 Italian Anti-Personnel Mine	Italy		✓
344	Benelli M4 Super 90 (M1014) Italian Semi-Automatic Shotgun	Italy	✓	
345	Franchi SPAS-15 Italian 12-Gauge Shotgun	Italy	✓	
346	KD Perdana (Perdana Class) Malaysian Fast Attack Craft	Malaysia	✓	
347	M-1991 North Korean 120mm MRLS	North Korea	✓	
348	VTT-323 Korean 107mm Multiple Rocket Launcher (MRL)	North Korea		✓
349	M-1978 Koksan North Korea 170mm Self-Propelled Gun (SPG)	North Korea		✓
350	A-5 (Fantan) North Korean Attack Aircraft	North Korea		✓
351	M1985 North Korea Light Battle Tank	North Korea		✓
352	Pokpung-ho North Korea Main Battle Tank (MBT)	North Korea	✓	
353	Bulsae-3 (AT-14 Spriggan) North Korean Man-Portable Anti-Tank Guided Missile (ATGM)	North Korea	✓	
354	Chonma-ho North Korean Main Battle Tank (MBT)	North Korea	✓	
355	M1974 North Korea 152mm Self-Propelled Gun-Howitzer System	North Korea	✓	
356	ZTS-63 (Export) North Korea Amphibious Light Tank	North Korea	✓	
357	T-55 (Export) North Korean Main Battle Tank (MBT)	North Korea	✓	
358	ZTS-63 (Export) North Korea Amphibious Light Tank	North Korea	✓	
359	Model 1981 "Shin'heung" (PT-85) North Korean Light Amphibious Tank	North Korea	✓	
360	Type 59 (Export) North Korean Main Battle Tank (MBT)	North Korea	✓	
361	PT-76 (Export) North Korea Light Amphibious Tank	North Korea	✓	
362	T-34-85 (Export) North Korea Medium Tank	North Korea	✓	
363	T-62 (Export) North Korean Medium Tank	North Korea	✓	
364	T-54 (Export) North Korea Medium Tank	North Korea	✓	
365	BMD-1 (Export) North Korea Airborne Amphibious Infantry Fighting Vehicle (IFV)	North Korea	✓	
366	S-200 Dubna (SA-5 Gammon) (Export) North Korean Surface-to-Air Missile (SAM) System	North Korea	✓	
367	2K6 Luna (FROG-5) (Export) North Korean Artillery Rocket System	North Korea	✓	
368	M-1985 North Korean 240mm Multiple Rocket Launcher	North Korea	✓	
369	S-75 Dvina (SA-2 Guideline) (Export) North Korean Strategic Surface-to-Air Missile System	North Korea	✓	
370	S-125 Neva/Pechora (SA-3 Goa) (Export) North Korean 6x6 Surface-to-Air Missile System	North Korea	✓	
371	D-1 (M1943) (Export) North Korea 152mm Towed Howitzer	North Korea	✓	
372	M-1944 (BS-3) (Export) North Korean Towed Anti-Tank Gun	North Korea	✓	
373	M-1954 (M-46) (Export) North Korean 130mm Towed Gun	North Korea	✓	
374	M1937 (ML-20) (Export) North Korean 152mm Towed Howitzer-Gun	North Korea	✓	
375	Bulsae-3 (AT-14 Spriggan) North Korean Man-Portable Anti-Tank Guided Missile (ATGM)	North Korea		✓
376	9K35 Strela-10 (SA-13 Gopher) (Export) North Korean Short-Range Surface-to-Air Missile System	North Korea	✓	
377	D-20 (Export) North Korean 152mm Towed Gun-Howitzer	North Korea	✓	
378	BM-24 (Katyusha) (Export) North Korean 240mm Multiple Rocket Launcher	North Korea	✓	

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
379	9K52 Luna-M (FROG-7) (Export) North Korean Medium-Range Artillery Rocket System	North Korea	✓	
380	BM-21 Grad (Export) North Korean 122mm Multiple Rocket Launcher (MRL)	North Korea	✓	
381	R-17 Elbrus (R-300 Scud B) (Export) North Korean Short-Range Ballistic Missile	North Korea	✓	
382	ZSU-23-4 Shilka (Export) North Korean 23mm Self-Propelled Anti-Aircraft Weapon System	North Korea	✓	
383	AZP S-60 (Export) North Korean 57mm Towed Anti-Aircraft Gun	North Korea	✓	
384	ZU-23-2 (Export) North Korean 23mm Towed Anti-Aircraft Gun	North Korea	✓	
385	ZPU-4 (Export) North Korean 14.5-mm Towed Anti-Aircraft Gun	North Korea	✓	
386	ZSU-57-2 (Ob'yekt 500) (Export) North Korean 57mm Self-Propelled Anti-Aircraft Gun	North Korea	✓	
387	M-1939 (61-K) (Export) North Korean 37mm Towed Anti-Aircraft Gun	North Korea	✓	
388	D-44 (Export) North Korean 85mm Towed Artillery Gun	North Korea	✓	
389	ZPU-2 (Export) North Korean 14.5mm Towed Anti-Aircraft Gun	North Korea	✓	
390	Bulsae-2 North Korean 120mm Anti-Tank Guided Missile (ATGM)	North Korea	✓	
391	KN-06 Pon'gae-5 North Korean Surface-to-Air Missile (SAM) System	North Korea	✓	
392	VTT-323 (M1973 Sinhung) North Korean Amphibious Armored Personnel Carrier (APC)	North Korea	✓	
393	Type 63 (Export) North Korean 107mm Multiple Rocket Launcher (MRL)	North Korea	✓	
394	BTR-80A (Export) North Korean 8x8 Amphibious Armored Personnel Carrier (APC)	North Korea	✓	
395	Victory-58 North Korean 4x4 Utility Truck	North Korea	✓	
396	ZIL-131 (Export) North Korean 6x6 General Purpose Truck	North Korea	✓	
397	PTS-M (Ob'yekt 65) (Export) North Korean Tracked Amphibious Transport Vehicle	North Korea	✓	
398	BTR-152 (Export) North Korean 6x6 Armored Personnel Carrier (APC)	North Korea	✓	
399	BTR-60 (Export) North Korean 8x8 Amphibious Armored Personnel Carrier (APC)	North Korea	✓	
400	Type ZSD 63 (YW531) (Export) North Korean Armored Personnel Carrier (APC)	North Korea	✓	
401	UAZ-469 (Export) North Korean 4x4 Light Utility Vehicle	North Korea	✓	
402	Antonov An-2 (Colt) (Export) North Korean Single-Engine Biplane	North Korea	✓	
403	Mi-2 (Hoplite) (Export) North Korean Small Transport Helicopter	North Korea	✓	
404	Mil Mi-8 (Hip-C) (Export) North Korean Medium Transport Helicopter	North Korea	✓	
405	MD 500 Defender (Export) North Korean Light Multi-Role Helicopter	North Korea	✓	
406	Tupolev Tu-143 (Export) North Korean Unmanned Reconnaissance Aircraft	North Korea	✓	
407	Panghyon-2 North Korean Unmanned Aerial Vehicle (UAV)	North Korea	✓	
408	Sang-O Class North Korean Submarine	North Korea	✓	
409	SU-100 North Korean Tank Destroyer	North Korea	✓	
410	Type 73 North Korean 7.62mm Light Machine Gun	North Korea	✓	
411	P2 Mk 2 / P3 Mk 2 Pakistani Anti-Tank Blast Mine	Pakistan		✓
412	MPB Polish Anti-Tank Mine	Poland		✓
413	PKM-2 Polish 14.5mm Towed Anti-Aircraft Gun	Poland	✓	
414	9K333 Verba (SA-25) Russian Man-Portable Infrared Homing Surface-to-Air Missile	Russia	✓	
415	9S737 Ranzhir Russian 6x6 Mobile Command Center	Russia	✓	
416	Barnaul-T Russian Air Defense Command and Control System	Russia	✓	
417	PU-12M6 Russian 8x8 Mobile Command and Control Vehicle	Russia	✓	
418	PU-12M7 Russian 8x8 Mobile Command and Control Vehicle	Russia	✓	
419	2S6M Tunguska-M Russian 30mm Self-Propelled Anti-Aircraft System	Russia		✓
420	2S6M1 Tunguska-M1 Russian 30mm Self-Propelled Anti-Aircraft System	Russia	✓	
421	S-125 Neva/Pechora (SA-3 Goa) Russian 6x6 Surface-to-Air Missile System	Russia		✓
422	P-15 Tropa (FLAT FACE) Russian 2D UHF Radar System	Russia	✓	
423	S-125 Newa (LOW BLOW) Russian Tracking and Missile Control Radar System	Russia	✓	
424	PRV-11 (SIDE NET) Russian Height-Finder Radar System	Russia	✓	
425	9K34 Strela-3 (SA-14 Gremlin) Russian Man-Portable Air Defense Missile System (MANPADS)	Russia		✓
426	9K37 Buk (SA-11 Gadfly) Russian Self-Propelled Medium-Range Surface-to-Air Missile System	Russia		✓
427	S-300PMU-1 (SA-20 Gargoyle) Russian Long-Range Air Defense Missile System	Russia		✓
428	9K330 Tor (SA-15 Gauntlet) Russian Short-Range Surface-to-Air Missile System	Russia		✓
429	9S80 Dog Ear Russian Target Acquisition Radar System	Russia	✓	
430	S-500 Russian Air Defense Artillery System	Russia		✓
431	9S80M1 Sborka-M1 (PPRU-M1) Russian Air Defense Command and Control Vehicle	Russia		✓
432	KS-19 Russian 100mm Towed Anti-Aircraft Gun	Russia		✓
433	AZP S-60 Russian 57mm Towed Anti-Aircraft Gun	Russia		✓
434	2K12 Kub (SA-6 Gainful) Russian Surface-to-Air Missile System	Russia		✓
435	9K33 Osa (SA-8 Gecko) Russian 6x6 Amphibious Short-Range Tactical Surface-to-Air Missile System	Russia	✓	
436	S-300P (SA-10 Grumble) Russian 8x8 Long-Range Surface-to-Air Missile System	Russia		✓
437	S-75 Dvina (SA-2 Guideline) Russian Strategic Surface-to-Air Missile System	Russia		✓
438	9K35 Strela-10 (SA-13 Gopher) Russian Short-Range Surface-to-Air Missile System	Russia		✓
439	9K32 Strela-2 (SA-7 Grail) Russian Man Portable Surface-to-Air Missile (MANPAD)	Russia		✓
440	ZSU-23-4 Shilka Russian 23mm Self-Propelled Anti-Aircraft Weapon System	Russia		✓
441	Buk-M3 (SA-X-27) Russian Medium-Range Air Defense Missile System	Russia		✓

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
442	S-300PMU-2 Favorit (SA-20B Gargoyle) Russian Long-Range Air Defense Missile System	Russia	✓	
443	S-500 Russian Long-Range Air Defense and Anti-Ballistic Missile System	Russia		✓
444	PMZ-40 Russian Multi-Purpose Landmine	Russia		✓
445	TMD-B Russian Anti-Tank Blast Mine	Russia		✓
446	OZM-4 Russian Anti-Personnel Mine	Russia		✓
447	OZM-72 Russian Anti-Personnel Mine	Russia		✓
448	PMN-2 Russian Anti-Personnel Mine	Russia		✓
449	PMN-1 Russian Anti-Personnel Mine	Russia		✓
450	PFM-1 (Green Parrot) Russian Anti-Persoonnel Mine	Russia		✓
451	POM-1S Russian Anti-Personnel Fragmentation Mine	Russia		✓
452	PMD-6 Russian Anti-Personnel Mine	Russia		✓
453	PMM-2 Russian Self-Propelled Amphibious Floating Bridging and Ferry System	Russia		✓
454	UMZ Russian 6x6 Scatterable Minelaying System	Russia		✓
455	BMR-3M Russian Mine Clearing Vehicle	Russia		✓
456	PTM-1S Russian Anti-Personnel Mine	Russia		✓
457	TM-57 Russian Anti-Tank Blast Mine	Russia		✓
458	TMM Russian Truck-Mounted Scissors Bridge	Russia		✓
459	TMM-6 Russian 8x8 Truck-Mounted Scissors Bridge	Russia	✓	
460	MZKT-7930 Astrolog Russian 8x8 Special Wheeled Chassis	Russia	✓	
461	TM-62 Russian Anti-Tank Blast Mine	Russia		✓
462	MON-200 Russian Directional Type Anti-Personnel Mine	Russia		✓
463	MON 50 Russian Directional Type Anti-Personnel Mine	Russia		✓
464	IMR-2M Russian Heavy Combat Engineering Vehicle	Russia		✓
465	Uran-6 Russian Multi-functional Robotic Mine-Clearing System	Russia		✓
466	KMT-5M Russian Tank Mounted Mechanical Mine Clearing Device	Russia		✓
467	MTU-72 Russian Armored Bridgelayer	Russia		✓
468	PMP Russian Heavy Folding Pontoon Bridge	Russia		✓
469	IRM Russian Engineer Reconnaissance Vehicle	Russia		✓
470	Credo-1E Russian Unified Moving Target Locating Radar	Russia		✓
471	PSNR-5 Russian Ground Surveillance Radar	Russia		✓
472	GMZ-3 Russian Tracked Minelaying Vehicle	Russia		✓
473	UMZ Russian 6x6 Scatterable Minelaying System	Russia		✓
474	POM-2S Russian Scatterable Anti-Personnel Fragmentation Landmine	Russia		✓
475	TM-83 Russian Anti-Tank Mine	Russia		✓
476	PMN-4 Russian Anti-Personnel Mine	Russia		✓
477	MON-100 Russian Anti-Personnel Mine	Russia		✓
478	BAT-M Russian Tracked Route-Clearing Vehicle	Russia		✓
479	PMZ-4 (PMR-3) Russian Towed Mechanical Minelayer	Russia		✓
480	T-55AMV Russian Main Battle Tank (MBT)	Russia		✓
481	2S9-1M Russian 120mm Self-Propelled Mortar (SPM)	Russia		✓
482	Poseidon Russian Unmanned Underwater Vehicle	Russia		✓
483	Tupolev Tu-22M (Backfire) Russian Long-Range Strategic Bomber	Russia		✓
484	SSC-8 (9M729) Russian Multi-Role Long Range Cruise Missile	Russia		✓
485	PTM-3 Russian Anti-Tank Mine	Russia		✓
486	TM-46 Russian Anti-Tank Mine	Russia		✓
487	LMG Russian Rocket Propelled Mine	Russia		✓
488	TMK-2 Russian Anti-Tank Mine	Russia		✓
489	UR-77 Meteorit Russian Mine Clearing Vehicle	Russia		✓
490	TM-41 Russian Anti-Tank Mine	Russia		✓
491	POMZ-2M Russian Anti-Personnel Mine	Russia		✓
492	BTM-3 Russian Trenching Machine	Russia		✓
493	RPG-27 Russian 105mm Disposable Anti-Tank Grenade Launcher (ATGL)	Russia		✓
494	RPG-29(Tripod Mounted) Russian 105mm Anti-tank Grenade Launcher (ATGL)	Russia		✓
495	OSV-96 Russian 12.7mm Semi-Automatic Anti-Material Rifle	Russia		✓
496	GM-94 Russian 43mm Pump-Action Grenade Launcher	Russia		✓
497	RPG-28 Klyukva (Cranberry) Russian 125mm Handheld Anti-Tank Rocket Launcher	Russia		✓
498	PKP Pecheneg Russian 7.62mm General-Purpose Machine Gun	Russia		✓
499	OSV-96 Russian 12.7mm Semi-Automatic Sniper Rifle	Russia	✓	
500	SPG-9 Kopye (Spear) Russian 73mm Tripod-Mounted Man-Portable Recoilless Gun	Russia		✓
501	9K113 Konkurs (AT-5 Spandrel) Russian Anti-Tank Guided Missile (ATGM)	Russia		✓
502	PKM Russian 7.62mm General-Purpose Machine Gun	Russia		✓
503	RPK Russian 7.62mm Light Machine Gun	Russia		✓
504	RPO-A Shmel Russian 93mm Man-Portable Disposable Rocket Launcher	Russia	✓	

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
505	RPO PDM-A (Shmel-M)Russian 90mm Thermobaric Rocket Launcher	Russia	✓	
506	NSV Russian 12.7mm Heavy Machine Gun	Russia		✓
507	9K115 Metis (AT-7 Saxhorn) Russian Man-Portable Anti-Tank Guided Missile (ATGM)	Russia		✓
508	9K115-2 Metis-M (AT-13 Saxhorn-2) Russian Man-Portable Anti-Tank Guided Missile (ATGM)	Russia	✓	
509	Toophan (BGM-71A TOW) Iranian Anti-Tank Guided Missile (ATGM)	Russia		✓
510	9M14 Malyutka (AT-3 Sagger) Russian Anti-Tank Guided Missile (ATGM)	Russia		✓
511	RPO-A Shmel Russian 93mm Man-Portable Flamethrower	Russia	✓	
512	2A45 Sprut-A Russian 125mm Towed Anti-Tank Gun	Russia		✓
513	RPG-29 (Vampir) Russian 105mm Rocket-Propelled Grenade (RPG) Launcher	Russia		✓
514	2A45 Sprut-B Russian 125mm Towed Anti-Tank Gun	Russia		✓
515	9M133 Kornet (AT-14 Spriggan) Man-Portable Anti-Tank Guided Missile (ATGM)	Russia		✓
516	9M133 Kornet-EM Russian 4x4 Anti-Tank Guided Missile (ATGM)	Russia	✓	
517	AGS-17 Russian 30mm Automatic Grenade Launcher	Russia		✓
518	PKT Russian 7.62mm General-Purpose Machine Gun	Russia		✓
519	KPV-14.5 Russian 14.5mm Heavy Machine Gun	Russia		✓
520	AK-15 Russian 5.45mm Assault Rifle	Russia	✓	
521	AKM Russian 7.62mm Automatic Assault Rifle	Russia		✓
522	B-11 Russian 107mm Recoilless Gun	Russia		✓
523	RPK-74 (AK-47) Russian 5.45mm Assault Rifle	Russia		✓
524	9K116-1 Bastion (AT-10 Stabber) Russian Anti-Tank Guided Missile (ATGM) System	Russia		✓
525	RPD Russian 7.62mm Light Machine Gun	Russia		✓
526	AK-74 Russian 5.45mm Automatic Assault Rifle	Russia		✓
527	AKS-74 Russian 5.45mm Automatic Assault Rifle	Russia		✓
528	AK-74M Russian 5.45mm Automatic Carbine Rifle	Russia	✓	
529	AKS-74U Russian 5.45mm Automatic Assault Rifle	Russia	✓	
530	KSVK Russian 12.7mm Anti-Material Rifle	Russia	✓	
531	AK-74 Russian 5.45mm Automatic Carbine Rifle	Russia	✓	
532	AK-74M Russian 5.45mm Automatic Assault Rifle	Russia		✓
533	RPG-7 Russia Rocket-Propelled Grenade Launcher	Russia	✓	
534	KSVK Russian 12.7mm Sniper Rifle	Russia		✓
535	AKS-74 Russian 5.45mm Automatic Carbine Rifle	Russia	✓	
536	RPG-7V2 Russia Rocket-Propelled Grenade Launcher	Russia	✓	
537	RPG-7D3 Russia Rocket-Propelled Grenade Launcher	Russia	✓	
538	ASG-17 Plamya Russian 30mm Automatic Grenade Launcher	Russia		✓
539	9M133 Kornet (AT-14 Spriggan) Russian Man-Portable Anti-Tank Guided Missile (ATGM)	Russia		✓
540	Misagh-2 Russian Man Portable Air-Defense Missile System (MANPADS)	Russia		✓
541	SVD-63 Russian 7.62mm Russian Automatic Sniper Rifle	Russia		✓
542	RPG-30 Russian Disposable Anti-tank Grenade Launcher (ATGL)	Russia		✓
543	SV-98 Russian 7.62mm Bolt-Action Sniper Rifle	Russia		✓
544	SV-98M Russian 7.62mm Bolt-Action Sniper Rifle	Russia	✓	
545	RPG-22 Russian 72.5mm Anti-Tank Rocket Launcher	Russia		✓
546	9M133 Kornet-EM Russian 4x4 Anti-Tank Guided Missile (ATGM) Vehicle	Russia		✓
547	PKP Pecheneg Russian 7.62mm General-Purpose Machine Gun	Russia		✓
548	SG-43 Goryunov Russian 7.62mm Medium Machine Gun	Russia		✓
549	Kord 6P50 Russian 12.7mm Heavy Machine Gun	Russia		✓
550	SKS Russian 7.62mm Semi-Automatic Carbine Rifle	Russia		✓
551	RGN Russian Fragmentation Grenade	Russia	✓	
552	RGO Russian Fragmentation Grenade	Russia	✓	
553	Saiga-12 Russian 12-Gauge Shotgun	Russia	✓	
554	Bandayevsky RB-12 Russian 12-Gauge Shotgun	Russia	✓	
555	GAZ-3344 Russian Articulated All-Terrain Tracked Carrier	Russia	✓	
556	Kushetka-B Russian 8x8 Amphibious Armored Personnel Carrier (APC)	Russia	✓	
557	BMP-3M Russian Amphibious Infantry Fighting Vehicle (IFV)	Russia		✓
558	RPK Russian 7.62 Light Machine Gun	Russia	✓	
559	2B14 Podnos Russian 82mm Mortar	Russia	✓	
560	2B24 Russian 82mm Mortar	Russia	✓	
561	BRDM 2U Russian 4x4 Command and Control Vehicle	Russia	✓	
562	MDK-3 Russian Tracked Ditching Vehicle	Russia	✓	
563	BK-16 Raptor Russian Fast Attack Craft	Russia	✓	
564	BK-10 Russian Fast Attck Craft (Assault Boat)	Russia	✓	
565	Snar 10 Russian Battlefield Surveillance Radar	Russia		✓
566	ARK-1M RYS Russian Artillery Locating Radar	Russia	✓	
567	2A36 Giatsint-B Russian 152mm Towed Gun	Russia		✓

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
568	1V110 Russian Artillery Command and Reconnaissance Vehicle	Russia		✓
569	9A51 Prima Russian 122mm MLRS	Russia		✓
570	2S19M1 (Msta-SM1) Russian 152mm Self Propelled Howitzer	Russia		✓
571	2S19M2 (Msta-SM2) Russian 152mm Self Propelled Howitzer	Russia		✓
572	2S9-1M Russian 120mm Self Propelled Howitzer	Russia		✓
573	2S23 Nona-SVK Russian 120mm Self Propelled Mortar System	Russia		✓
574	2S34 Hosta / Chosta Russian 120mm Self Propelled Mortar	Russia		✓
575	BM-30 Smerch Russian 300mm Multiple Launch Rocket System	Russia		✓
576	2A65 Msta-B Russian 152mm Towed Gun Howitzer	Russia		✓
577	UB-32 Russian 57mm Reusable, 32-salvo Rocket Pod	Russia		✓
578	BM-21 Grad Russian 122mm Multiple Rocket Launch System	Russia		✓
579	2A45 Sprut-A Russian 125mm Towed Anti-Tank Gun	Russia		✓
580	2S35-1 Koalitsiya-SV-KSh Russian 152mm Self Propelled Howitzer	Russia		✓
581	9A51 Prima Russian 122mm MLRS	Russia		✓
582	1V13 Russian Artillery Command and Reconnaissance Vehicle	Russia		✓
583	1V15 Russian Artillery Command and Reconnaissance Vehicle	Russia		✓
584	M-46 Russian 130mm Towed Gun	Russia		✓
585	2S3M1 Russian 152mm Self-Propelled Howitzer (SPH)	Russia		✓
586	2S9-1 Russian 120mm Self-Propelled Mortar (SPM)	Russia		✓
587	9A52-4 Tornado Russian 300mm Multiple Rocket Launcher (MRL)	Russia		✓
588	Uragan-1M Russian 220mm/300mm Multiple Launch Rocket System (MRL)	Russia		✓
589	2B16 Nona-K Russian 120mm Towed Combination Gun	Russia		✓
590	2S9 NONA Russian 120mm Self-Propelled Mortar (SPM)	Russia		✓
591	MT-LB Russian Amphibious Armored Personnel Carrier (APC)	Russia		✓
592	BTR-152 Russian 6x6 Armored Personnel Carrier (APC)	Russia		✓
593	BMP-2M Berezhok Russian Amphibious Infantry Fighting Vehicle (IFV)	Russia		✓
594	LUAZ-967 Russian 4x4 Amphibious Vehicle	Russia		✓
595	UAZ-469 Russian 4x4 Light Utility Vehicle	Russia		✓
596	BMP-1 Russian Amphibious Infantry Fighting Vehicle (IFV)	Russia		✓
597	BMD-3 Russian Airborne Amphibious Infantry Fighting Vehicle (IFV)	Russia		✓
598	BTR-D Russian Airborne Armored Personnel Carrier (APC)	Russia		✓
599	GAZ-2975 Tigr Russian Light Utility Vehicle	Russia		✓
600	BMP-3K Russian Amphibious Infantry Fighting Vehicle (IFV)	Russia		✓
601	BMP-2 Russian Amphibious Infantry Fighting Vehicle (IFV)	Russia		✓
602	BTR-50 Russian Amphibious Armored Personnel Carrier (APC)	Russia		✓
603	BTR-90 (GAZ-5923) Russian 8x8 Amphibious Armored Personnel Carrier (APC)	Russia		✓
604	BTR-40 Russian 4x4 Armored Personnel Carrier (APC)	Russia		✓
605	Tu-95 (Bear) Russian Strategic Bomber Aircraft	Russia	✓	
606	MIG-21 (Fishbed) Russian Fighter Aircraft	Russia	✓	
607	R-77 (AA-12 Adder) Russian Air-to-Air Missile	Russia	✓	
608	KH-31 (AS-17 Krypton) Russian Air-to-Surface Missile	Russia	✓	
609	Kh-31A Russian Anti-Ship Missile	Russia	✓	
610	KAB-500-OD Russian Fire and Forget Bomb	Russia	✓	
611	KAB-500 Russian Fire and Forget Bomb	Russia	✓	
612	Mil Mi-28 (Havoc) Russian Attack Helicopter	Russia		✓
613	S-13 Russian 122mm Unguided Rocket	Russia	✓	
614	9K114 Shturm (AT-6 Spiral) Russian SACLOS Radio Guided Anti-Tank Missile System	Russia	✓	
615	9M120 Ataka (AT-9 Spiral-2) Russian Air-to-Surface Missile	Russia	✓	
616	Antonov An-26 (Curl) Russian Military Transport Aircraft	Russia	✓	
617	9M120 Ataka (AT-9 Spiral-2) Russian Anti-Tank Guided Missile	Russia	✓	
618	Mig-23 (Flogger) Russian Fighter Aircraft	Russia		✓
619	Su-24 (Fencer) Russian Attack Aircraft	Russia		✓
620	MiG-25 (Foxbat) Russian Supersonic Interceptor and Reconnaissance Aircraft	Russia		✓
621	A-50 (Mainstay) Russian Airborne Early Warning and Control (AEW&C) Aircraft	Russia		✓
622	9K37 Buk (SA-11 Gadfly) Russian Medium-Range Surface-to-Air Missile System	Russia		✓
623	Su-30 Russian Multirole Fighter Aircraft	Russia		✓
624	MiG-31 (Foxhound) Russian Attack Aircraft	Russia		✓
625	Su-17 (Fitter) Russian Fighter-Bomber Aircraft	Russia		✓
626	Il-18 (Coot) Russian Reconnaissance Aircraft	Russia		✓
627	MiG-29 (Fulcrum) Russian Multirole Fighter Aircraft	Russia		✓
628	An-12 (Cub) Russian Transport Aircraft	Russia		✓
629	IL-76 (Candid) Russian Cargo / Transport Aircraft	Russia		✓
630	9P157 Khrizantema-S Russian Anti-Tank Guided Missile System	Russia		✓

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
631	9P148 Russian Anti-Tank Guided Missile Carrier	Russia		✓
632	9P149 Shturm Russian Anti-Tank Guided Missile Carrier	Russia		✓
633	AGS-30 Atlant Russian 30mm Automatic Grenade Launcher	Russia	✓	
634	9P162 Kornet-T Russian Anti-Tank Missile Carrier	Russia		✓
635	T-55 Russian Main Battle Tank (MBT)	Russia	✓	
636	PT-76 Russian Light Amphibious Tank	Russia	✓	
637	T-34-85 Russian Medium Tank	Russia	✓	
638	Degtyaryov (DP-28) Russian 7.62mm Light Machine Gun	Russia	✓	
639	T-54 Russian Medium Tank	Russia	✓	
640	T-62 Russian Medium Tank	Russia	✓	
641	2K6 Luna (FROG-5) Russian Artillery Rocket System	Russia	✓	
642	D-1 (M1943) Russian 152mm Towed Howitzer	Russia	✓	
643	M-1944 (BS-3) Russia 100mm Towed Anti-Tank Gun	Russia	✓	
644	M-1954 (M-46) Russian 130mm Towed Gun	Russia		✓
645	Tor M2DT Russian Amphibious Short-Range Air Defense Missile System	Russia	✓	
646	M1937 (ML-20) Russian 152mm Towed Howitzer-Gun	Russia	✓	
647	D-20 Russian 152mm Towed Gun-Howitzer	Russia		✓
648	BM-24 (Katyusha) Russian 240mm Multiple Rocket Launcher	Russia	✓	
649	50R6 Vityaz (S-350E) Russian Medium-Range Air Defense Missile System	Russia	✓	
650	9M337 Sosna-R Russian Short-Range Air Defense Missile System	Russia		✓
651	9K52 Luna-M (FROG-7) Russian Medium-Range Artillery Rocket System	Russia	✓	
652	R-17 Elbrus (R-300 Scud B) Russian Short-Range Ballistic Missile	Russia	✓	
653	ZPU-4 Russian 14.5-mm Towed Anti-Aircraft Gun	Russia		✓
654	D-44 Russian 85mm Towed Artillery Gun	Russia	✓	
655	ZPU-2 Russian 14.5mm Towed Anti-Aircraft Gun	Russia	✓	
656	ZIL-131 Russian 6x6 General Purpose Truck	Russia	✓	
657	PTS-M (Ob'yekt 65) Russian Tracked Amphibious Transport Vehicle	Russia	✓	
658	ASG-17 Plamya Russian 30mm Automatic Grenade Launcher	Russia		✓
659	GP-30 Obuvka (Footwear) Russian 40mm Under-Barrel Grenade Launcher	Russia		✓
660	RG-6 Russian Revolving 40mm Grenade Launcher	Russia	✓	
661	GM-94 Russian 43mm Pump-Action Grenade Launcher	Russia		✓
662	GP-25 Kostyor (Bonfire) Russian 40mm Under-Barrel Grenade Launcher	Russia		✓
663	Antonov An-2 (Colt) Russian Single-Engine Biplane	Russia	✓	
664	Mi-2 (Hoplite) Russian Small Transport Helicopter	Russia		✓
665	Mil Mi-8 (Hip-C) Russian Medium Transport Helicopter	Russia		✓
666	Tupolev Tu-143 Russian Unmanned Reconnaissance Aircraft	Russia	✓	
667	T-54T Russian Armored Recovery Vehicle	Russia		✓
668	BK-10 Russian Fast Attack Craft (Assault Boat)	Russia		✓
669	Ivan Gren (Ivan Green Class) Russian Landing Ship	Russia	✓	
670	BK-16 Raptor Russian Fast Attack Craft (Assault Boat)	Russia		✓
671	3M54T (SS-N-27 Sizzler) Russian Anti-Shipping Cruise Missile	Russia	✓	
672	3M54K (SS-N-27 Sizzler) Russian Land Attack Cruise Missile	Russia	✓	
673	Astrakhan (Buyan Class) Russian Corvette	Russia	✓	
674	Grad Sviyazhsk (Buyan-M) Russian Corvette	Russia	✓	
675	3M55 Oniks Russian Supersonic Anti-Ship Cruise Missile	Russia	✓	
676	P-800 Yakhont Russian Supersonic Anti-Ship Cruise Missile	Russia	✓	
677	P-800 Bolid Russian Supersonic Anti-Ship Cruise Missile	Russia	✓	
678	Brahmos Russian Medium-Range Ramjet Supersonic Cruise Missile	Russia	✓	
679	Kh-61 Russian Supersonic Cruise Missile	Russia	✓	
680	Okinks-M Russian Supersonic Cruise Missile	Russia	✓	
681	Zala 421-12 Russian Unmanned Aerial Vehicle (UAV)	Russia		✓
682	Mohajer-6 Iranian ISTAR Unmanned Aerial Vehicle (UAV)	Russia		✓
683	Orlan-10 Russian Unmanned Aerial Vehicle (UAV)	Russia		✓
684	Admiral Gorshkov (Admiral Gorshkov Class) Russian Frigate	Russia	✓	
685	Poseidon Russian Unmanned Underwater Vehicle	Russia		✓
686	Yury Dolgorukiy (Borei Class) Russian Nuclear-Powered Ballistic Missile Submarine	Russia	✓	
687	RSM-56 Bulava (SS-NX-30) Russian Submarine-Launched Ballistic Missile	Russia	✓	
688	Severodvinsk (Yesen Class) Russian Nuclear-Powered Cruise Missile Submarine	Russia	✓	
689	C14 Class Russian Missile Boat	Russia		✓
690	Zubr Class (Pomornik)Russian Air-Cushion Landing Craft (LCAC)	Russia		✓
691	Nudelman-Rikhter NR-30 Russian 30mm Autocannon	Russia	✓	
692	2A72 (ZPT99) Russian 30mm Autocannon	Russia	✓	
693	Shipunov 2A42 Russian 30mm Autocannon	Russia	✓	

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

December 2019 - February 2020

Number	Equipment Name	Country	Added	Updated
694	Buyan-M Class (Project 21631 Buyan-M) Russian Corvette	Russia	✓	
695	BK-16 Raptor Class Russian Fast Attack Craft	Russia	✓	
696	Lada-Class Russian Diesel-Electric Attack Submarine	Russia	✓	
697	UB-32 Russian 57mm Reusable, 32-salvo Rocket Pod	Russia	✓	
698	Mil Mi-24/Mi-35 Hind Russian Attack Helicopter	Russia		✓
699	S-24 Russian Air-to-Surface Rocket	Russia		✓
700	9M17 Fleyta (AT-2 Swatter) Russian Air-to-Surface Missile	Russia	✓	
701	9M17 Fleyta (AT-2 Swatter) Russian Anti-Tank Guided Missile (ATGM)	Russia	✓	
702	Saiga-12 Russian 12-Gauge Shotgun	Russia		✓
703	Slava Class Russian Guided Missile Cruiser	Russia	✓	
704	P-1000 Vulkan Russian Supersonic Cruise Missile	Russia	✓	
705	Steregushchiy Class (Project 20380 Class) Russian Corvette	Russia	✓	
706	KH-35 Russian Anti-Ship Cruise Missile	Russia	✓	
707	Yuri Ivanov Class (Project 18280 Class) Russian SIGINT Intelligence Collection Ship	Russia	✓	
708	Vishnya Class (Project 864) Russian Intelligence Collection Ship	Russia	✓	
709	BMD-1 Russian Airborne Amphibious Infantry Fighting Vehicle (IFV)	Russia		✓
710	BMD-KShM Russian Command Post Vehicle	Russia	✓	
711	BMP-3K Russian Amphibious Tactical Command Infantry Fighting Vehicle (IFV)	Russia		✓
712	BRM-3K Rys Russian Amphibious Armored Reconnaissance Vehicle	Russia	✓	
713	Berkut-2 Russian Tactical Heated-Cab Snowmobile	Russia	✓	
714	BTR-ZD Russian 23mm Self-Propelled Anti-Aircraft Gun	Russia	✓	
715	BREM-D Russian Armored Maintenance-Recovery Vehicle	Russia	✓	
716	Yantar Class Russian Intelligence Collection Ship	Russia	✓	
717	T-72A Russian Main Battle Tank (MBT)	Russia		✓
718	T-72M Polish Main Battle Tank (MBT)	Russia	✓	
719	9M119 Svir (AT-11 Sniper) Russian Anti-Tank Guided Missile (ATGM)	Russia	✓	
720	T-72B Russian Main Battle Tank (MBT)	Russia		✓
721	T-54 Russian Medium Tank	Russia		✓
722	Chieftain MK 3 (Export) Iranian Main Battle Tank (MBT)	Russia		✓
723	Su-17 (Fitter) Russian Fighter-Bomber Aircraft	Russia		✓
724	STK 40 AGL Singaporean 40mm Automatic Grenade Launcher	Singapore		✓
725	Light Strike Vehicle Singapore 4x4 Light Utility Vehicle	Singapore		✓
726	STK 40 AGL Singapore 40mm Automatic Grenade Launcher	Singapore	✓	
727	Light Strike Vehicle Mark II Singapore 4x4 Light Utility Vehicle	Singapore	✓	
728	STK 50MG Singapore 12.7mm Heavy Machine Gun	Singapore	✓	
729	STK 40 AGL Singapore 40mm Automatic Grenade Launcher	Singapore		✓
730	BOV-3 Slovenian 20mm Self-Propelled Anti-Aircraft Weapon System	Slovenia		✓
731	Armsel Striker (Protecta Bulldog) South African 12-Gauge Shotgun	South Africa	✓	
732	G-5 South African 155mm Towed Gun Howitzer	South Africa		✓
733	G6 Rhino South African 155mm Self Propelled Howitzer	South Africa		✓
734	RG-31 Nyala South African 4x4 Mine-Resistant Ambush Protected (MRAP)	South Africa		✓
735	Milkor Mk-4 UBGL South African 40mm Single-Shot Grenade Launcher	South Africa		✓
736	Milkor Mk-4 UBGL South African 40mm Single-Shot Grenade Launcher	South Africa		✓
737	Milkor Mk-4 UBGL South African 40mm Single-Shot Grenade Launcher	South Africa	✓	
738	K200 KIFV South Korean Infantry Fighting Vehicle (IFV)	South Korea		✓
739	URO VAMTAC ST5 BN3 Spanish 4x4 High-Mobility Tactical Utility Vehicle	Spain		✓
740	Carl Gustaf M3 MAAWS Swedish 84mm Man-Portable Anti-Tank Recoilless Rifle	Sweden	✓	
741	Carl Gustaf M4 (M3-E1) Swedish 84mm Man-Portable Anti-Tank Recoilless Rifle	Sweden	✓	
742	AT-4 Swedish 84mm Single-Use Anti-Tank Recoilless Rifle	Sweden		✓
743	HG-85 Swedish Time-Fused Fragmentation Grenade	Sweden	✓	
744	BvS 10 (Viking) Swedish All-Terrain Armored Vehicle	Sweden	✓	
745	Bv206S Swedish Tracked Armoured Personnel Carrier (APC)	Sweden	✓	
746	Bv206A Swedish Amphibious Tracked Armored Ambulance	Sweden	✓	
747	Bv 206 Swedish Articulated All-Terrain Tracked Carrier	Sweden	✓	
748	BvS 10 (Viking) Swedish Amphibious Armored Personnel Carrier (APC)	Sweden	✓	
749	STRIX Swedish 120mm Terminal-Homing Mortar Projectile	Sweden		✓
750	Soras 6 Swedish Sound Ranging System	Sweden		✓
751	JAS 39 Gripen Swedish Multirole Fighter Aircraft	Sweden	✓	
752	RBS-15 Swedish Long-Range Air-to-Surface Missile	Sweden	✓	
753	RBS-15 Swedish Long-Range Anti-Ship Missile	Sweden	✓	
754	37 Viggen Swedish Multirole Aircraft	Sweden		✓
755	Carl Gustaf M1 Swedish 84mm Man-Portable Anti-Tank Recoilless Rifle	Sweden		✓
756	Carl Gustaf M2 Swedish 84mm Man-Portable Anti-Tank Recoilless Rifle	Sweden	✓	

Continued on next page...

Worldwide Equipment Guide (WEG)

Equipment Added/Updated Tracker *(continued)*

September - November 2019

Number	Equipment Name	Country	Added	Updated
757	CB90 Swedish Fast Assault Craft	Sweden	✓	
758	RBS 70 Swedish Man-Portable Air Defense Missile System (MANPADS)	Sweden	✓	
759	Carl Gustaf M3 Swedish 84mm Man-Portable Anti-Tank Recoilless Rifle	Sweden	✓	
760	Cobra II Turkish 4x4 Amphibious Armored Personnel Carrier (APC)	Turkey		✓
761	Nimr Hafeet Emirati 6x6 Armored Ambulance	UAE	✓	
762	Nirm Emirati 4x4 Light Utility Vehicle	UAE	✓	
763	CAR 817 Emirati 7.62mm Assault Rifle	UAE	✓	
764	CAR 816 Emirati 5.56mm Assault Rifle	UAE	✓	
765	Nirm II Emirati 4x4 Light Armored Vehicle	UAE	✓	
766	Nimr Hafeet 620 Emirati 6x6 Light Utility Truck	UAE	✓	
767	Nimr Hafeet APC Emirati 6x6 Armored Personnel Carrier (APC)	UAE	✓	
768	BMP-3 UAE Amphibious Infantry Fighting Vehicle (IFV)	UAE		✓
769	1L220-U Ukrainian Artillery Locating Radar	Ukraine		✓
770	Remington MSR American 7.62mm Sniper Rifle	USA	✓	
771	TMA-3 Yugoslavian Anti-Tank Blast Mine	Yugoslavia		✓
772	TMM-1 Yugoslavian Anti-Tank Blast Mine	Yugoslavia		✓
773	PROM-1 Yugoslavian Anti-Personnel Mine	Yugoslavia		✓
774	M60 Former Yugoslavian 82mm Recoilless Gun	Yugoslavia		✓
775	M79 Former Yugoslavian 82mm Recoilless Gun	Yugoslavia		✓
776	M79 Osa Former Yugoslavian 90mm Anti-Tank Rocket Launcher	Yugoslavia		✓
777	Zastava M84 Yugoslavian 7.62mm General-Purpose Machine Gun	Yugoslavia		✓

The Worldwide Equipment Guide (WEG) was developed to support the TC 7-100 series and all OPFOR portrayal in training simulations (constructive, virtual, live, and gaming). The equipment portrayed in the WEG represents military systems, variants, and upgrades that U.S. forces may encounter now and in the foreseeable future. The authors continually analyze real-world developments, capabilities, and trends to guarantee that the OPFOR remains relevant. The WEG is no longer published in a PDF format annually, and has instead migrated to an online database that can be found at: https://odin.tradoc.army.mil/WEG. The online WEG allows users to print individual WEG sheets, groups of equipment types, or the entire WEG. Additionally, in the upcoming months an offline version of the WEG will be available, which will allow users to download updates as need, but still allow them to access the WEG without the internet via their computers, tablets, or phones. To request equipment be added to the WEG, email the TRADOC G-2 OE & Threat Analysis Directorate WEG Analyst Richard Garcia at Richard.l.garcia.ctr@mail.mil.