Iran May Be Renewing Its Interest in Armored Warfare

by **Farzin Nadimi (/experts/farzin-nadimi)**

Mar 27, 2017
Also available in
العربية (/ar/policy-analysis/ayran-qd-tjdd-ahtmamha-balhrb-almdrt)

ABOUT THE AUTHORS

Farzin Nadimi (/experts/farzin-nadimi)

Farzin Nadimi, an associate fellow with The Washington Institute, is a Washington-based analyst specializing in the security and defense affairs of Iran and the Persian Gulf region.

Brief Analysis

The Syria war will likely spur Tehran to increase the role of armor in its future military planning, but it is still years away from developing an advanced tank force of its own.

On March 12, Iran unveiled the Karrar (Attacker) tank, which it called its first indigenously designed and developed main battle tank (MBT), with series production at the Bani-Hashem Armor Factory in Dorud. In recent years, Iranian military leaders have emphasized asymmetric forms of warfare against more powerful conventional adversaries and assigned only limited roles to tanks. Yet recent events in Syria and Iraq have shown Tehran that modern armor can still be an effective force multiplier in asymmetric situations. Iranian tank crews and technicians have been working closely with Assad regime armor units during the Syria war, giving them insights into their capabilities and limitations in irregular warfare settings. At the same time, Iran lacks tanks with the protection, mobility, and firepower to survive on the modern battlefield. The Karrar may be an attempt to fill this gap, but its claimed advancements seem exaggerated.

STALLED ARMOR AMBITIONS

In the 1970s, the shah of Iran envisioned a large modern tank force to defend against a possible Soviet or Iraqi invasion. For this purpose he supervised the purchase of hundreds of American and British tanks (M60 Pattons and Chieftains, respectively). He also sought to produce the modern British-designed Shir-2 tank in Iran. Yet the 1979 revolution put an abrupt end to these ambitions, while the ensuing purges and subsequent war with Iraq stretched the country's existing tank units very thin.

Iran's main tank factory, located in Dorud in the western province of Lorestan, started out as an upgrade and refurbishment center in the 1960s. During the 1990s, Tehran purchased around 400 T-72 tanks from Russia and

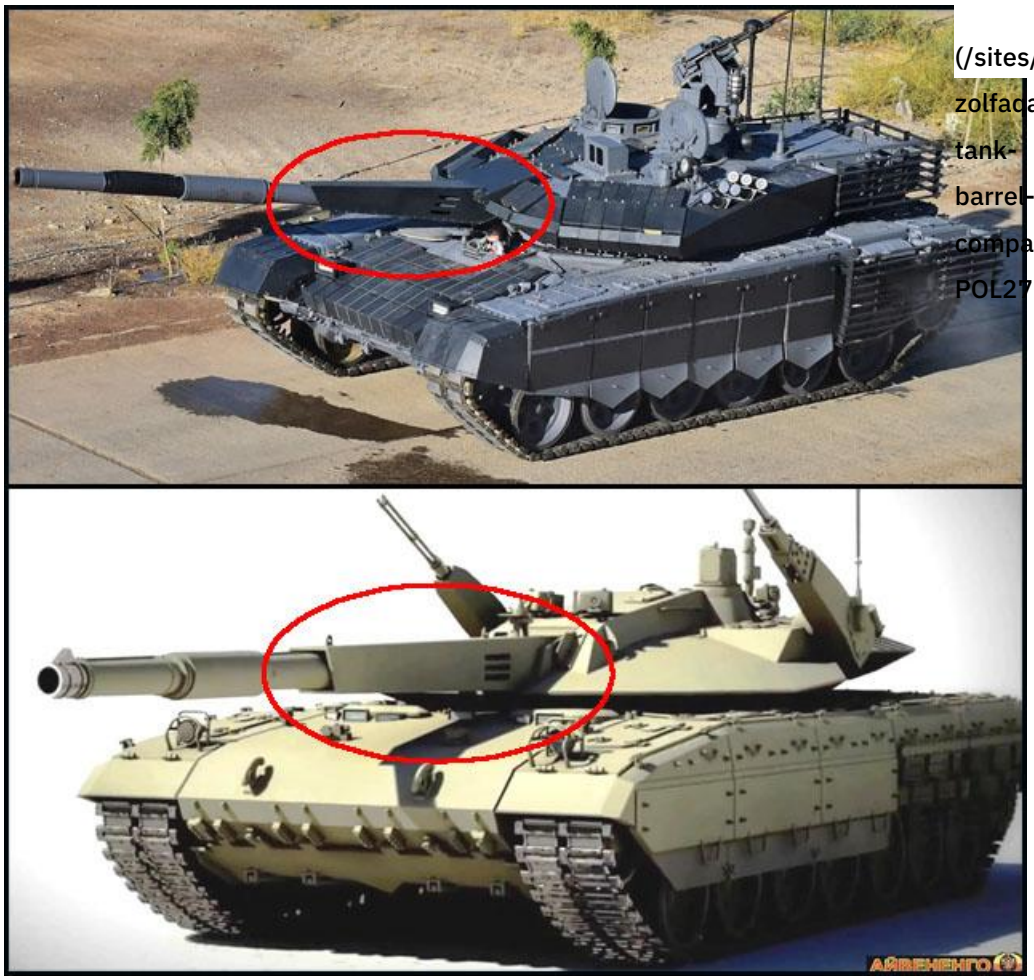
assembled some of them from knock-down kits in Dorud. More examples were obtained from Poland and elsewhere.

Aspirations for a fully indigenous MBT came to light soon after the Iran-Iraq War. The first such project was the Zolfaqar/Zulfiqar, a hybrid design combining an M60 power pack and T-72 gun on a chassis developed by the Iranian national army. It was followed by the progressively improved Zolfaqar II and III. The latter closely resembled the American M1 Abrams, at least in outward appearance; in fact, Iran was rumored to have obtained and examined several disabled Abrams tanks in Iraq following the 2003 U.S. invasion. Yet the army's Zolfaqar III never entered production for technical and perhaps financial reasons. Instead, Tehran has pursued a more practical modernization option: upgrading its existing fleet of T-72s via defense industries controlled by the Islamic Revolutionary Guard Corps. The only limiting factor to this approach seems to be the inconsistent availability of T-72 hulls.

Iran has also performed several upgrades to its outdated M47 and M48 tanks over the years, but apparently none of this R&D resulted in a feasible MBT option. In addition, it tried to replace the Chieftain's power pack with a more robust American engine, but that program did not go beyond the prototype stage due to a lack of replacement engines.

T-90 OR T-72?

At first glance, the new Karrar looks suspiciously like Russia's T-90MS tank. Upon closer inspection, however, it is little more than an upgraded T-72 with some additional indigenous components and aesthetic flourishes modeled after the T-90MS. For instance, Iranian designers added a sheet-metal armor sleeve over the gun barrel that serves no practical purpose beyond adding to the vehicle's visual appeal -- apparently drawing inspiration from a fanciful piece of Russian computer art found on the Internet (see comparison image below). To be sure, the Karrar also demonstrates how far a country can go in the realm of weapons development while under sanctions. Yet apart from its general appearance, the new tank does not seem to share any major system commonalities with the T-90MS, instead opting for incremental improvements to older systems.



(/sites/default/files/imports/iran-zolfaqar-tank-barrel-comparison-POL2777.jpg)

For example, with the exception of its barrel, which Iran has now managed to fabricate domestically, the Karrar retains the T-72's 125-millimeter 2A46M gun, including the same problematic auto-loading mechanism. The gun can fire a variety of locally made rounds at ranges of 2,000-9,200 meters, as well as a license-built version of the Russian 9M119 Refleks laser beam-riding guided missile with a 4,000-meter range. The Iranian copy of the latter is called Tondar (Thunder), and its shaped-charge warhead can purportedly penetrate 700 millimeters of armor. This is an expensive missile that requires specialized training to use effectively, so only limited numbers are expected to be fielded, presumably for use against high-value targets such as low-flying helicopters. According to some experts, Iran has retained major elements of the original fire-control system to ensure the functionality of the laser-guided missile system.

The turret, however, is a new welded modular design very similar to the T-90MS, complete with an extended rear section, apparently for safe ammunition stowage. The T-72 is vulnerable to internal ammunition fires, which usually causes catastrophic detonation of stowed ammunition. In recent Middle Eastern wars, U.S. armor-piercing rounds and antitank missiles had no difficulty penetrating T-72 armor. Iran has therefore designed the Karrar with explosive reactive armor arrays on the glacis and turret to supplement its frontal armor, as well as "composite" side armor skirts to enhance protection against flank attacks. Yet the tank still lacks an active defense system similar to those developed and deployed in Israel and Russia. Its passive defense system includes a locally developed laser warning receiver linked to turret-mounted smoke grenade launchers, and a turret-mounted jammer to counter wire- and infrared-guided antitank missiles.

The Karrar's fire-control system generally resembles that of the Italian TURMS-T upgrade kit installed on some Syrian T-72s, or the Russian Kalina system seen on the T-90MS. Yet Iran claims to have developed its own integrated digital fire-control and navigation system at the Defense Ministry electronics and optics firm Sairan (also known as

IEI), based in Shiraz and Isfahan. It had previously advertised a system named KAT-72 for its T-72 tanks, with claimed day/night capability to engage moving targets at a range of 9,995 meters.

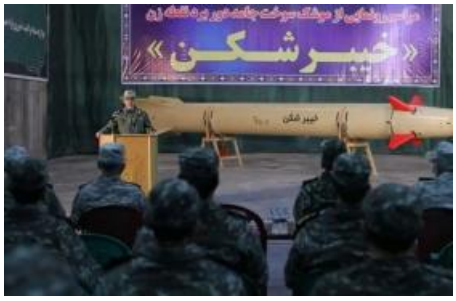
CONCLUSION

There is no evidence that Russia played a role in developing Iran's upgraded Karrar tank. Yet if Tehran is serious about producing modern MBTs, it will need to find a way past current technical bottlenecks in key areas, including the need for a more powerful compact engine, an efficient transmission suitable for hot desert conditions, main gun assemblies, and active defenses. To do so, it would need foreign help, or the transfer of technology necessary to produce such systems domestically. In the near term, however, these activities are proscribed under UN Security Council Resolution 2231, which requires any state to get approval from the council before directly or indirectly selling Iran battle tanks or related materiel, training, and technical assistance, at least until 2020.

Finally, while technologies can be copied and upgraded, what matters most for battlefield success is instituting the sound tactics, operational doctrines, and organizational frameworks needed to employ those technologies effectively. Iran's combined-arms operations during its eight-year war with Iraq left much to be desired, and its exercises since then demonstrate that it has not yet developed armor forces capable of fighting in a networked, combined-arms environment. By absorbing the lessons of the Syria war and placing more effective modern tanks in its inventory, Tehran will likely try to increase the role of armored forces in its military planning. Yet it is years away from creating a viable tank industry capable of producing modern MBTs on par with the world's most advanced militaries, not to mention using them effectively.

Farzin Nadimi is a Washington-based analyst specializing in the security and defense affairs of Iran and the Persian Gulf region. ❖

RECOMMENDED



BRIEF ANALYSIS

Iran Takes Next Steps on Rocket Technology

Feb 11, 2022

Farzin Nadimi

(/policy-analysis/iran-takes-next-steps-rocket-technology)

BRIEF ANALYSIS

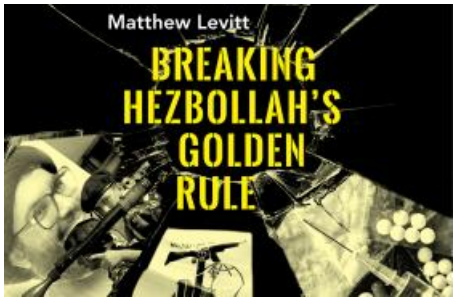
Saudi Arabia Adjusts Its History, Diminishing the Role of Wahhabism

Feb 11, 2022

◆

Simon Henderson

(/policy-analysis/saudi-arabia-adjusts-its-history-diminishing-role-wahhabism)



ARTICLES & TESTIMONY

Podcast: Breaking Hezbollah's Golden Rule

Feb 9, 2022

◆

Matthew Levitt

(/policy-analysis/podcast-breaking-hezbollahs-golden-rule)

TOPICS

Military & Security (/policy-analysis/military-security)

Proliferation (/policy-analysis/proliferation)

REGIONS & COUNTRIES

Iran (/policy-analysis/iran)