Turkey's War of Attrition With the Islamic State: The Rocket Threat

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Brief Analysis

Ankara's terrorist adversaries have expanded their destructive reach with mobile rocket launchers and other formidable weapons, so deterring the threat will require a similarly robust Turkish approach to procurement, development, and deployment of various military systems.

Turkey's civilian casualties from Islamic State (IS) rocket attacks recently hit double-digit numbers. Since January, some seventy of these cross-border attacks have hit Turkish territory, killing at least twenty-one people, exacting a considerable psychological toll, and heavily disrupting daily life in the border city of Kilis. Ankara now finds itself sliding into an indefinite war of attrition and struggling to reassure a public already reeling from major IS terrorist attacks in Istanbul and Ankara. Accordingly, it needs game-changing defensive and offensive capabilities to counter the pressing rocket threat.

THE ISLAMIC STATE'S ROCKET CAPABILITIES

Much like the ubiquitous AK-47 rifle, Katyusha multiple-launch rocket systems are a notorious gift from the Soviet military industrial complex to numerous contemporary battlefields. In the late 1940s, development began on the Katyusha variant seen most often today -- the 122 mm BM-21 Grad, a replacement for the 82 mm and 132 mm versions that played an important role during World War II. Katyushas can carry a broad range of warhead types such as high-explosive fragmentation devices, smoke canisters, cluster submunitions, and even antitank mines. Generally, their operational range is around 20 km.

The Islamic State obtained most of its Katyusha arsenal by capturing systems from government forces in Syria and Iraq, though it also has a burgeoning modification and production line of its own. The tactical rationale underlying the group's short-range rocket campaign against Turkey is based on mobility and concentration of firepower. Its Katyushas are carried by highly mobile 4x4 or 6x6 platforms, making them much easier to protect via rapid

relocation. The rockets themselves also have a relatively low signature, so detecting launches can be difficult. Katyushas can even be fired from a jury-rigged rail launcher with a timer so that no crew is involved. Moreover, while the BM-21 Grad line lacks accuracy, it can concentrate robust firepower to batter military formations or cause fear in urban areas.

CHEMICAL AND THERMOBARIC THREATS?

Although the conventional rocket threat is already causing ample problems, Ankara has not faced the worst-case scenarios yet. First, the risk of IS using rockets tipped with chemical weapons (CW) should not be underestimated. Some warhead configurations for the BM-21 were specifically designed to deliver VX and Sarin nerve agents (around 3 kg in each 122 mm warhead) as well as hydrogen cyanide. It is also widely accepted that Washington's CW disarmament deal with Damascus fell short of its goal -- some of the Assad regime's chemical arsenal remains intact, and IS has already proven to be a tangible CW threat by capturing chlorine stocks in Syria and mustard gas in Iraq.

To be sure, the presence of CW-capable BM-21 variants in the group's inventory remains unconfirmed, and any actual use of such weapons against Turkey would unleash massive retaliation, perhaps even from NATO. Yet given the Islamic State's well-known apocalyptic mindset and the known presence of such weapons in the middle of a shifting warzone, the risk should not be discounted.

Second, if ISIS were somehow able to capture thermobaric warheads in Syria, casualties in Turkey could increase dramatically. Thermobaric weapons function very differently from conventional high-explosive warheads. These fuel-air weapons cause lethal damage by drawing oxygen out of a target area, creating a strong burn and massive overpressures. Russian forces used them to devastating effect against urban areas in Chechnya, and visual evidence suggests that Moscow has introduced an unknown number of TOS-1A thermobaric multiple-launch rocket systems into the Syrian theater. The TOS-1A carries twenty-four 220 mm rockets on a T-72 tank chassis and can launch a formidable salvo launch in less than ten seconds. Although the system has a shorter range than the BM-21, its destructive effects over Turkish populated areas could be catastrophic.

Without a doubt, IS would have great difficulty capturing TOS-1As from Russian forces deployed in Syria. In October 2015, however, visual evidence surfaced indicating that Syrian army forces were operating such weapons as well -- a troubling revelation given that IS has proven willing and able to seize other potent systems from the regime.

HOW TO COUNTER THE ROCKET THREAT

From a military standpoint, Turkey needs a good combination of offensive and defensive capabilities to confront and deter IS rocket fire. Doctrinally speaking, such efforts fall under "counter rocket artillery mortar" (C-RAM) operations, as opposed to ballistic missile defense -- something that many in the Turkish strategic community have long misunderstood. Protecting military forces and civilian populations against shorter-range projectiles requires excellent reaction time and robust intelligence, surveillance, and reconnaissance (ISR) capabilities. Modern armies use various means to intercept such weapons, including rapid-fire Gatling guns and revolver cannons (e.g., the Phalanx, a modification of the naval variant for U.S. Army needs) as well as low-altitude and very-short-range air defense systems (e.g., Israel's Iron Dome). Turkey lacks any such land-based C-RAM architecture, however.

Ankara also needs to foster better offensive capabilities. Preventing IS rocket attacks requires a simple yet demanding two-phase approach. First, the Turkish Armed Forces should preemptively target specific IS formations within rocket range, which would be challenging given the likely presence of small units with small numbers of rockets. Second, they should work to repel all IS elements from the danger zone permanently.

At present, the Turkish Army operates 155 mm Firtina howitzers with a range of 30-40 km, along with 122 mm and 300 mm rocket systems that could reach up to 40 km and 80-100 km, respectively. The army's fire-support assets

are linked with AN/TPQ-36 Firefinder radars, which are electronically scanned mobile X-band systems that can locate rocket, artillery, and mortar launches. The system's detection range for rockets is up to 24 km, and it can track up to ten targets simultaneously.

Without a doubt, this network provides a strong retaliatory posture, and Turkey could even reach targets a few hundred kilometers inside Syria with J-600 tactical ballistic missiles. Yet Turkish forces would still need to fly over Syrian territory to hunt down IS mobile rocket launchers before they strike, and they would need robust ISR capabilities to detect and eliminate such systems before they reach their fire positions. These are particularly thorny requirements given that Russia established a formidable antiaccess/area denial zone in Syria after Turkey downed one of its Su-24 fighters in November. Moscow is therefore well-equipped to detect any incursions by the Turkish Air Force, and it could use such incidents as an excuse to retaliate.

In light of this challenge, armed drone capabilities could prove to be an important asset. Ismail Demir, head of Turkey's military procurement body, recently voiced the need to field such systems in order to address the IS rocket threat. Yet while Turkey's promising drone program has shown impressive improvements in testing the Bayraktar and Anka platforms, the rocket threat is imminent, and robust offensive drone capabilities are needed now.

TURKEY NEEDS PARTNERS

Recent developments in the Syria war have once again shown Ankara the value of the Turkish-American strategic alliance, and even Turkish-Israeli military cooperation. In the absence of a Turkish air deterrent over Syria, U.S. A-10 strike aircraft and MQ-1 Predator armed drones have been taking off from Incirlik Air Base to hit IS targets across the border. The United States is also deploying the M142 high mobility artillery rocket system (HIMARS) in Turkey to respond to the threat. Moreover, if Ankara's relations with Israel had not soured in recent years prior to their recent attempts at rapprochement, the Turks would likely have prioritized the rapid procurement of both armed drones and Iron Dome batteries, which have a 90 percent interception rate against rockets. As it stands now, such procurements from Israel are unlikely in the near term.

Whether it relies on foreign partners, domestic R&D, or some combination of the two, Ankara needs to respond quickly to a terrorist challenge that is evolving from low-intensity conflict to hybrid warfare threats. Turkey's nonstate adversaries are improving their capabilities with mobile rocket systems, antitank guided missiles, and man-portable air defense systems. Under these circumstances, strategically adapting to the new security environment and implementing needed changes in the Turkish Armed Forces are crucial.

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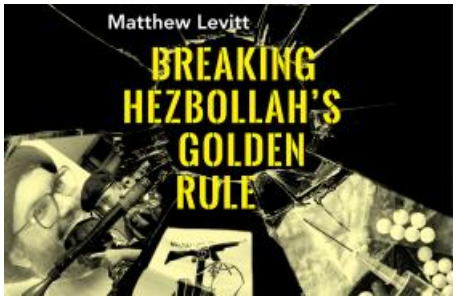

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