The Syrian Regime's Use of Surface-to-Surface Missiles

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Brief Analysis

While surface-to-surface missiles have not changed the course of the war, their introduction is in line with past regime escalation -- a pattern that will likely to apply to chemical weapons use if the international reaction remains muted.

The past five months of Syria's internal war have seen extensive regime use of Scuds and other surface-to-surface missiles (SSMs). Because these weapons give Bashar al-Assad's forces the ability to strike rebels and civilians nearly at will, Washington and its allies should consider taking firm countermeasures, including employment of antimissile forces in adjacent countries.

CONTEXT

The regime first resorted to using Scuds in December, responding to rebel gains around Damascus and Aleppo that threatened key installations. After a brief respite, the pace of missile launches picked up again after January 10, when rebels scored another major victory in the north by capturing Taftanaz air base. The increase in missile fire also correlated with the country's worst winter weather in years -- ceilings of less than 10,000 feet and reduced visibility may have compelled the air force to reduce its operations at the time.

Following the rebel capture of al-Thawra dam in Raqqa province on February 11 and al-Jarrah air base in Aleppo province the next day, the regime retaliated with a reported 39 SSM strikes over the following week. Although some rebel forces were deployed in these areas, most of the missiles landed in civilian areas or in the open.

Afterward, the regime maintained a relatively consistent firing pattern, launching between one and twelve SSMs per day for the next month. Against a background of improving rebel weaponry and territorial gains by the opposition Free Syrian Army (FSA), missile fire became a constant presence in rebel-held areas. In short, the regime now seems comfortable with conducting regular SSM operations.

FORCES, CAPABILITIES, AND OPERATIONS

Syria's longstanding preparation for conflict with Israel has left it with a large missile force. Before the civil war broke out, the regime reportedly possessed around 700-800 Scuds and other SSMs such as the newer, Iranian-designed Fateh A-110 and the Russian SS-21. According to the opposition, over 200 SSMs of various types have been fired since December, mostly Scuds.

The regime's older Scud-Bs have a range of up to 300 km and can carry the largest payload, almost 1,000 kg. The Scud-C doubles that range, but with a lesser payload of around 500 kg. The locally produced Fateh A-110/M600s have an estimated range of 200 km and a 500 kg payload. The SS-21 "Scarab" can reach between 70 and 120 km depending on the type used (Syria has both the A and B models), with a 500 kg high-explosive payload. All of these SSMs can be configured for cluster or chemical munitions. The regime has also employed FROG-7 artillery rockets that can deliver a 500 kg payload up to 70 km.

The inaccuracy of Soviet-style Scuds and FROGs makes them useful only against large targets such as military bases or urban areas. The more accurate SS-21 can be employed against smaller, high-value military targets, including concentrations of enemy forces and rebel command posts.

Thus far, the regime has demonstrated that it can sustain missile operations, calibrate its rate of fire, and engage a variety of targets. Typically, its SSMs are fired from secure areas by seemingly proficient launch crews, reaching targets throughout Syria without being impeded by weather or rebel air defenses. Based on opposition sources, the frequency of SSM strikes varies widely, with some days featuring multiple attacks (the highest total is eighteen) and others none. Although high-explosive warheads -- which are devastating to civilians in crowded urban settings such as Aleppo and Damascus -- are the regime's favored munitions, cluster weapons may have been used in certain cases as well.

CONSEQUENCES

The use of SSMs continues the regime's longstanding pattern of escalation, from artillery to aircraft and from high explosives to cluster and incendiary munitions. Each step has been a response to growing rebel pressure, signifying the failure of other weapons to intimidate the population or destroy opposition forces.

Although the exact effects of the missile campaign are difficult to determine, strikes on civilian areas have inflicted thousands of casualties, caused considerable material damage, and contributed to the refugee exodus. Aleppo has seen the worst of these effects, but other cities have been struck repeatedly as well, including Raqqa, Deir al-Zour, and the Damascus suburbs. At times, a single salvo has caused hundreds of casualties, as seen in a February strike against Aleppo that reportedly killed 141 civilians. Other strikes have killed dozens on average, though some have landed harmlessly in open fields or simply malfunctioned.

The regime often responds with SSM strikes after losing important military facilities, to deny the opposition use of these facilities or the weapons located there. Other times, SSMs directly support military operations such as ground offensives. In either case, the missiles have not proven to be battlefield game-changers -- unsurprising given the weight of explosives already being delivered by more conventional, and more accurate, air and artillery strikes. Based on opposition reporting, the regime conducts an average of twenty-two air actions and 280 artillery strikes per day, far exceeding the number of SSM strikes.

More broadly, missile operations are another way of undermining the opposition's legitimacy, demonstrating to the population that the absence of regime forces in certain areas does not mean the presence of security. SSMs hit rebel-held areas with no warning, creating a sense of helplessness among civilians while harassing FSA units and the political opposition. Yet these problems were already extant before SSM attacks became common, stemming from

heavy regime air and artillery strikes as well as internal rivalries within the opposition.

OUTLOOK

To date, employing SSMs has been a low-cost/low-risk tactic for the regime. The international community has not responded to the use of these weapons, just as it remained silent when Assad began employing field artillery, combat aircraft, and fragmentation and incendiary bombs against civilians. The rebels have been unable to attack SSM units, so the pace of launches remains unaffected. Although the regime is expending some of its strategic capital built for a conflict with Israel, it will have few qualms about continuing that approach so long as its survival is at stake.

Indeed, the regime's steady rate of fire and well-stocked inventory of SSMs points to a lengthy missile campaign. In early March, launches were reported from Jableh air base in the Alawite hinterland, indicating that Assad's forces can continue SSM strikes even if they lose their Damascus-area launch facilities. Moreover, based on its demonstrated willingness to use every tool to ensure its survival, the regime will resort to chemical weapons if it feels cornered and believes they can provide some kind of benefit. In that scenario, SSMs could be a prime means of delivery.

POLICY IMPLICATIONS

SSMs have not changed the course of the war, but their introduction represents another case in which the regime believes it can act with impunity and inflict mass casualties on the civilian population. Accordingly, the United States and its allies should help the opposition confront the threat. Using missile defenses in Turkey to counter Scud launches could have a dramatic symbolic and psychological impact on the combatants out of proportion to the initial military effect. Washington should also explore ways to communicate early warning information about launches and expected impact areas, allowing rebel forces and civilians to seek shelter. Finally, the international community should recruit, train, and equip vetted FSA units to clandestinely attack regime launch sites, providing appropriate intelligence assistance as necessary. These and other measures would greatly limit the regime's SSM capability, easing the burden on the civilian population and strengthening governance in rebel-held areas.

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