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Responding to Assad's Use of Airpower in Syria

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Through innovative use of Patriot missile batteries and command-and-control aircraft, Washington and its allies could create a much-needed protective arc for Syrian civilians without having to penetrate the regime's still-formidable air defenses.

The Syrian air force continues to terrorize the civilian populace and slow the rebel advance. After twenty months of conflict and over 32,000 deaths, Bashar al-Assad has survived in part because of the regime's ability to strike anytime, anywhere from the air. In order to protect Syrians from this indiscriminate use of airpower, the international community should enact "airborne controlled" and "ground–based enforced" northern and southern safe zones.

BACKGROUND

Soon after the uprising began in March 2011, the regime adopted an aggressive approach involving tanks, infantry carriers, and artillery, but no aircraft. These forces were used to seal and storm cities such as Deraa and Latakia. In early June 2011, Assad responded aggressively in the northwestern town of Jisr al-Shughour after the regime lost 120 troops. And in January 2012, the regime initiated artillery operations across the country.

This escalation did not have the desired effect, however, and as the armed opposition became more proficient, the regime was forced to rely on its air force. In April, Assad reacted to unexpected rebel gains in Idlib and Aleppo by dispatching helicopters to engage "liberated" villages. By the end of May, as the opposition mounted offensives, the regime was consistently using helicopter gunships to make up for its reduced mobility, which the rebels had caused by interdicting lines of communication with roadside bombs and ambushes. This shift culminated in the July 12 massacre in Tremseh, a town of 7,000 that was bombed by helicopters and stormed by the regime's *shabbiha* irregulars.

BOMBING CIVILIANS AND REBEL RESPONSE

The Syrian air force targets civilians and has primarily employed its aircraft in a punitive and retaliatory manner rather than a tactical one. The majority of airstrikes have been against towns and neighborhoods where the rebels have gained control rather than specific rebel military targets.

One example of this mindset is the inception of "barrel bombs." The regime has used its Mi-8/17 helicopters to drop old storage tanks or sheet-metal cylinders packed with explosives and metal scrap on various communities; these bombs are simply pushed out the rear of the aircraft from high altitudes. Whether this approach is intended to maximize the multifunctionality of helicopters or save factory-grade munitions for use by attack jets, it has clearly been effective at terrorizing civilians.

In August, the regime also began to employ jets in strafing and bombing campaigns as battle lines in Aleppo city hardened and helicopter usage peaked. One explanation for this transition to fixed-wing aircraft could be the maintenance issues associated with operating some fifty helicopters. A more probable reason was the increased rebel air defense capability, which forced the regime to operate at higher altitudes.

Indeed, the main armed opposition, the Free Syrian Army (FSA), has responded to regime air power by engaging and downing limited numbers of aircraft and attacking airbases. Currently, rebel equipment is believed to include fifteen to twenty-five ZU-23 antiaircraft guns, two to five 57-millimeter towed air-defense artillery guns (or other types), and fifteen to thirty SA-7 man-portable air-defense systems (reports of SA-16s and SA-24s have emerged as well). In battle, the rebels have primarily relied on heavy guns like the ZU-23 and, on at least one occasion, a MANPAD. The FSA has reportedly shot down at least five rotary-wing and six fixed-wing aircraft, with at least seven video confirmations of their success. Uncorroborated FSA footage shows planes and helicopters being shot down and even captured fighter pilots and aircraft wreckage. Other reports place the number of aircraft kills higher, at nineteen, but FSA videos and claims are difficult to verify.

In order to reduce the airpower threat, FSA forces have also sought to overrun and harass regime airbases, including those at Abu Duhur, Minakh, Taftanaz, and al-Qusayr. Their objectives are twofold: to diminish the number of aircraft launching against them and take advantage of aircraft vulnerability during takeoffs and landings. Four of their successful aircraft engagements have occurred near bases.

STATUS OF THE SYRIAN AIR FORCE

Of the 600 aircraft in its total inventory, the regime likely has no more than 200 that are combat-capable (approximately 150 jets and 50 helicopters), and even those have varying degrees of effectiveness. Based on historical maintenance shortcomings and the current pace of operations, Assad is probably able to employ no more than 50 percent of these 200.

Although the air force might be reserving its higher-end MiG-25s and -29s and SU-24s in preparation for external intervention, it may simply be unable to use these air-to-air designs in air-to-ground roles. The MiG-25 -- known as a "flying ironing board" because it is intended for high-altitude intercepts, not low-level maneuvering -- is certainly not suited for air-to-ground operations. The regime may also be concerned about further defections. A MiG-21 pilot made a much-publicized defection to Jordan in June, and reports from inside the air force indicate that more fighter pilots would defect if given the chance. The Syrian air force was not prepared to fight an insurgency; it has long been focused on Israel. This may explain the surprising usage of L-39 Albatross trainer aircraft around Aleppo, which could stem from their lower incidence of maintenance problems compared to more-finicky MiGs, their better performance at lower altitudes and speed, or simply the fact that more pilots are proficient with trainer aircraft.

More broadly, the use of aircraft indicates the regime's waning ground offensive capabilities. Throughout the conflict, Damascus has relied on heavy weapons (field artillery, mortars, rockets) as the main engine of destruction and casualties, but it is increasingly turning to airpower to slow the FSA advance, as evidenced late last month during the proposed Eid al-Adha ceasefire. Rather than diminishing during that religious holiday, air attacks spiked significantly (e.g., over sixty airstrikes on October 29 alone, compared to the previous average of twenty to twenty-five per day).

SYRIAN AIR DEFENSES

At the beginning of the civil war, Syria's air defense network ranked among the most capable and dense in the world. Located primarily along the interior Damascus-Homs-Aleppo corridor and the Mediterranean coast, the overlapping coverage of missiles and radars consisted of approximately 650 static air-defense sites, the most potent of which was the SA-5 Gammon due to its range of 165 nautical miles and 100,000-foot altitude capability. Syrian platforms also included approximately 300 mobile air-defense systems, the most significant of which were the newer SA-11/17 and the highly capable anti-stealth and anti-cruise missile SA-22.

Yet Syria's Russian-made legacy systems have limitations. Turkey recently diverted a Russian jet bound for Syria that was reportedly carrying much-needed spare parts for the air-defense network. Also, NATO and Israeli air forces have repeatedly demonstrated the ability to penetrate and suppress these systems. And in recent months, the internal war has significantly degraded their effectiveness. As seen among ground combat forces, rampant absenteeism and defections have diminished the readiness of the regime's missile and radar systems. In addition, the FSA has captured SA-2 and SA-8 antiaircraft launchers and overrun SA-2 and SA-5 facilities. Toward the end of October, as rebels consolidated gains in the northern Idlib province, regime forces destroyed some surface-to-air missiles to prevent them from falling into rebel hands. Even so, the regime's air defenses remain formidable.

RECOMMENDATIONS

Because of its role in limiting the rebel advance, airpower is key to the Assad regime's survival. Ever since Damascus began responding with force against civilians, the FSA and other opposition elements have asked the international community to establish a no-fly zone and supply them with antiaircraft weapons. Despite the FSA's territorial gains, even a reduced regime air force has the ability to target any area at any time -- a situation that affects Syrians physically and, perhaps more important, psychologically. Although artillery has been responsible for the majority of civilian casualties, numerous atrocities (e.g., the thirteen-plus aerial bombings of bakeries as civilians stood in line for bread) illustrate the people's vulnerability to air attacks.

Crafting a viable U.S. and international response to this problem requires an innovative approach that does not entail large numbers of aircraft, personnel, and resources, such as the one used in Libya. It must be able to circumvent the degraded yet lethal Syrian air defenses while protecting civilians from air attacks.

One recently discussed option -- a creative, ground-based approach using Patriot missile batteries -- could work if integrated with three key U.S. aircraft: the E-3 AWACS, RC-135 Rivet Joint, and E-8 JSTARS. These airborne "eyes and ears," which were pivotal to the success of no-fly missions in Libya, Bosnia, and Iraq, would operate outside of Syrian air defense coverage. Patriot missile units placed in Turkey and Jordan could reach into Syria and give the FSA a protected arc some 40-50 miles from the borders. The FSA already controls most of the areas within this hypothetical arc, and the no-fly zone would be formed along currently defended boundaries where the opposition is most active. Admittedly, Patriots were originally intended for "point defense," not as no-fly enforcers. But if paired with the appropriate airborne command-and-control radar assets, the Patriot's fire-control radar and PAC-2 missiles would deter and perhaps even eliminate Syrian air attacks in the protected zone.

More specifically, based on mountainous terrain, altitude capabilities of regime aircraft, and placement of launchers, the Patriot arc could cover Aleppo and parts of Idlib province in the north and even Deraa in the south. The AWACS and JSTARS would increase the Patriot radar range by over 100 miles while providing early detection and cueing via secure data links. Besides increasing radar coverage, the airborne systems would provide airspace

control, aircraft identification, and surveillance capabilities as well as oversee engagement orders to Patriot units. And given the nature of the Patriot system -- the higher the target, the more effective the missile -- the current regime tactic of flying above antiaircraft coverage would improve the arc's effective range. Coupled with the provision of even low-tech antiaircraft arms to the FSA, the use of Patriots would establish a creative, multilayered air defense.

The past twenty months in Syria have proven the physical and psychological effects of indiscriminate bombing of civilians, including an increased flow of refugees. Responding to this problem with a Patriot-enforced option would compel Assad to concede a portion of his country, much like Saddam Hussein had to in Iraq. Yet it would not be as escalatory as a traditional no-fly zone with an extended bombing campaign and constant patrols over Syria. It could therefore be a pill the regime is willing to swallow. In short, through innovative use of U.S. weapons systems that entail little or no effort to penetrate the regime's dense air defenses, Washington and its allies could create a protective arc in the south and north, providing a much-needed safe haven for Syrians inside Syria.

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