

Syria's Strategic Weapons Programs

by [Michael Eisenstadt \(/experts/michael-eisenstadt\)](/experts/michael-eisenstadt)

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ABOUT THE AUTHORS



[Michael Eisenstadt \(/experts/michael-eisenstadt\)](/experts/michael-eisenstadt)

Michael Eisenstadt is the Kahn Fellow and director of The Washington Institute's Military and Security Studies Program.



Brief Analysis

The September 6 Israeli airstrike in northeastern Syria has produced intense speculation. According to the New York Times, Israeli intelligence believes the target was part of a clandestine Syrian nuclear weapons program aided by North Korea. This raises broader questions about the status of Syria's strategic weapons programs, which would likely play a crucial role in any future confrontation with Israel.

Syria's Strategic Safety Net

Given that Syria lacks both a superpower patron and territorial depth (Israeli forces are thirty miles from Damascus), the regime depends on strategic weapons -- mainly conventionally and chemically armed rockets and missiles -- to deter foreign aggression and ensure its survival. The Israeli raid has heightened concerns that Syria might be seeking to supplement its substantial chemical weapons stockpile with a small nuclear arsenal.

Nuclear activities. Syria's declared civilian nuclear infrastructure is rudimentary, and until recently, there was no evidence of a nuclear weapons program (rumors that the regime was a client of the Abdul Qadir Khan network were never substantiated). Syria has nuclear research labs, a miniature 30-kilowatt reactor (unsuitable for the production of fissile material), a small particle accelerator, and a plant that separates uranium from the country's abundant phosphate deposits. In the late 1980s and early 1990s, Damascus showed an interest in acquiring larger research reactors and nuclear power and desalination plants from Russia and elsewhere, but nothing came to fruition.

Speculation about the airstrike has centered on reports that it targeted a site where North Korea purportedly delivered nuclear materials or technology several days prior. Foreign assistance could help jumpstart a Syrian nuclear weapons program, but it would likely take years to yield results -- unless North Korea provided Syria with fissile material (presumably plutonium) from which a bomb could be made.

Syria's late president Hafiz al-Asad implied that the country did not develop nuclear weapons because their use against a neighboring state would harm Syria's own population and prompt a harsh superpower response. It is not clear whether current president Bashar al-Asad shares this perspective or that of Arab leaders such as Hizballah's Hassan Nasrallah, who emphasize the growing importance of psychological warfare and strategic bombardment as means of waging war against Israel.

Chemical and biological weapons. Syria probably has the largest and most advanced chemical warfare program in

the Arab world. It is believed to have both binary-type and cluster-bomblet chemical warheads for all its major missile systems, as well as thousands of bombs filled with the nerve agents sarin and possibly VX, all of which are deliverable against battlefield and strategic targets in neighboring countries.

Syria's chemical weapons program has traditionally served as a strategic deterrent, with chemical warheads and bombs posing a threat to Israeli population centers. These weapons could also be used against air bases, armories, and command-and-control facilities in order to disrupt mobilization efforts and military operations. Reports that Syria has produced tube and rocket artillery filled with mustard-type blister agents indicate that it is also capable of delivering chemical strikes against battlefield targets. Artillery rounds filled with such agents would be effective in slowing the advance of Israeli ground forces, buying time for international intervention to end the war.

Syria is also believed to have a biological warfare research and development program, although few details are publicly available. Rumors that Iraqi chemical and biological warfare agents were transferred to Syria on the eve of the 2003 invasion of Iraq have never been substantiated and seem improbable. Unlike 1991, Iraq did not send its air force abroad prior to the war, choosing instead to bury its best aircraft in the desert. If there were surviving chemical or biological stocks on the eve of the war, it is likely that they were treated similarly.

Rockets and missiles. Syria has one of the largest missile forces in the developing world. Short-range Soviet Scud-Bs (300 kilometers) and longer-range North Korean Scud-Cs (500 kilometers) and Scud-Ds (700 kilometers) form the backbone of this force. These missiles provide Syria with a strategic deterrent against Israel and other neighbors through their ability to strike population centers.

Syria currently possesses about 200 Scud-Bs, 60-120 Scud-Cs, and a smaller number of Scud-Ds, which are kept in hardened underground shelters located in hillsides and tunnels in various parts of the country. Although the Scud-Bs must be launched from forward positions near Damascus, where they are susceptible to detection and destruction prior to launch, Scud-Cs and Scud-Ds can reach targets in Israel from launch sites anywhere in the country. This fact would significantly complicate any Israeli efforts to locate and destroy these missiles (though Israeli forces performed well against Hizballah's long-range rockets during the summer 2006 war in Lebanon, destroying many before they could be launched).

Syria also possesses the Soviet SS-21 missile with a 70-kilometer range, as well as large numbers of domestically produced 220-millimeter and 302-millimeter artillery rockets with ranges of 70 and 100 kilometers, respectively. These systems are probably intended for use against military targets and population centers; they could also be used to suppress or overwhelm Israeli missile defenses so that the larger missiles can get through. These rockets, which are reportedly armed with both conventional and chemical warheads, can reach targets throughout northern Israel. The success of Hizballah's short-range rockets during the Lebanon war has apparently encouraged Syria to place even greater emphasis on its own rocket forces.

Employment Scenarios

Syria has used its rocket and missile forces for strategic signaling as well as deterrence. During the Syrian missile crisis in April 1981 and the Israeli invasion of Lebanon in June 1982, Syria deployed several Scud-Bs to sites near Damascus -- where they could be observed by Israel -- as a warning not to attack. And in recent months, Syria reportedly deployed large numbers of long-range rockets opposite the Golan during several major Israeli military exercises there, apparently to deter what it saw as preparations for an attack.

Should deterrence fail, Syria's rocket and missile forces would likely play a major role in any confrontation with Israel, as a means of deterring further escalation or disrupting Israeli mobilization and military operations. Syria might also be tempted to attack Israeli population centers in order to undermine Israeli morale -- raising the possibility of further escalation and, in turn, the use of chemical weapons should the regime or Damascus be

threatened. For all these reasons, although Israel's September 6 airstrike may have averted an unwanted nuclear development, it may also signify the onset of increasing tension and volatility between Israel and Syria.

Michael Eisenstadt is a senior fellow and director of the [Military and Security Studies Program](http://www.washingtoninstitute.org/templateI02.php?SID=2) (<http://www.washingtoninstitute.org/templateI02.php?SID=2>) at The Washington Institute. ❖

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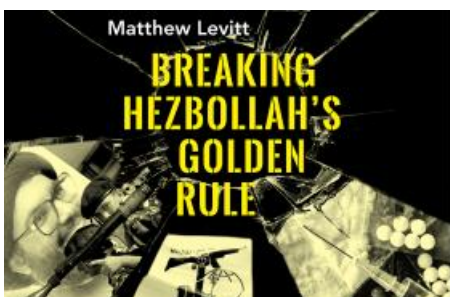
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