# Building Gulf Missile Defenses One Small Win at a Time

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Brief Analysis

**If Washington and its partners build on incremental technological progress and greater regional cooperation, they can field a Gulf missile defense network capable of dealing with Iran's growing arsenal.**

Establishing an effective regional missile defense system for the Gulf Arab states has become more achievable in recent months amid a series of modest but important improvements in technology and doctrine. The cumulative impact of these "small wins" can help consolidate regional cooperation, but Washington will need to assume an even more proactive role if it hopes to deter Iran.

## PROGRESS IN MISSILE DEFENSE

The successes to date for Gulf missile defense include:

- Agreement on the importance of the Iranian threat
- "Bilateral multilateralism," in which each Gulf Cooperation Council (GCC) state coordinates with Washington individually, and Washington then coordinates with the others -- a useful means of fostering cooperation among often-suspicious governments
- Adoption of a common missile defense doctrine and progress on a nascent regional missile defense plan
- Procurement of interoperable missile technology that can be more readily forged into a common shield

The recent technological milestones in particular offer much reason for optimism about the prospects for effective defense against Iranian missiles. Today's systems are increasingly capable, offering several advancements that are relevant to the Gulf.

***Remote sensor cueing.*** In a February 2013 test, a U.S. Space Tracking Surveillance System-Demonstrator (STSS-D) satellite tracked a Scud-like target and relayed data through a secure, jam-resistant datalink to an Aegis cruiser located over 500 miles away. The cruiser then destroyed the target with a SM-3 Block IA interceptor. With such remote datalinking, missile defense arrays involving Aegis ships, Patriot batteries, and Terminal High-Altitude Area Defense (THAAD) systems can now be cued and ready to fire much more quickly, while enemy missiles are still hundreds of miles away. Today's missile launchers are not limited to the range of their co-located radars and can therefore maximize the "fly out" range of their interceptors. In the Gulf, Turkey, and Israel, the long-range X-band TPY-2 radar and airborne platforms such as drones, E-3 AWACS, E-8 JSTARS, and the RC-135 Rivet Joint/Cobra Ball can feed real-time and extended missile-launch information to land- and sea-based interceptors minutes earlier than previously -- a crucial improvement in scenarios where even seconds count.

***Layered missile defense.*** In October 2012, U.S. forces in the Pacific carried out the world's most sophisticated and

complex live missile scenario to date, with Aegis, Patriot, and THAAD systems simultaneously tracking and engaging four different types of air and space targets: a cruise missile, an aircraft, a short-range ballistic missile, and a medium-range ballistic missile. Directed from an integrated command-and-control system organized much like CENTCOM, the exercise proved the viability of using a layered defense against multiple, simultaneous manned and missile targets. These same capabilities can be employed in the Gulf. Similarly, Israel recently showed how the Iron Dome short-range interceptor system can fill a layered defense niche, adding it to the national air and missile defense network alongside David's Sling (used for countering cruise missiles and long-range rockets) and Arrow (for medium- and long-range missiles).

***Longer-range engagements with redundant targeting.*** Aegis and THAAD missile intercepts are designed to take place in the exoatmosphere (outer space). In the case of targeting Iranian ballistic missiles carrying weapons of mass destruction, the intention would be to have missile debris disintegrate as it enters the atmosphere. U.S. and allied technology continue to extend the range of missile intercepts, pushing them further away from civilian populations and infrastructure. For example, one Israeli Arrow 3 test missile reached hypersonic speeds over the Mediterranean Sea and climbed over seventy miles into space. Once in the exoatmosphere, the Arrow 3 becomes a space vehicle that maneuvers for intercept. These and other longer-range interceptors give defenders multiple opportunities to engage enemy missiles at greater distances from friendly territory, including the possibility of a second chance if the initial intercept attempt fails.

## NEXT STEPS

In addition to these technological advances, more can be done to continue the pattern of small wins and create a credible deterrent to Iran's ballistic missile program. As the Gulf states field newer, more sophisticated U.S. systems such as PAC-3 and THAAD, Washington must continue its hands-on role, leading efforts to enhance interoperability and further integrate command and control. The ultimate goal of such efforts is a self-sufficient GCC missile defense network that is integrated with systems in neighboring states.

First, although missile interceptors are increasing in range and altitude, more should be done to develop boost-phase intercept capabilities -- that is, targeting enemy missiles shortly after launch, when they are most vulnerable due their relatively low speed, heavy fuel load, inability to deploy decoys or engage in evasive maneuvering, and susceptibility to tracking due to prominent infrared signatures. Investments should be made in air-launched interceptors that could be carried on allied aircraft, allowing them to engage missiles as close as possible to their launch sites in Iran.

Toward that end, Washington should conduct exercises that include engaging air-launched cruise missiles, which U.S. forces practiced during the Cold War. Fifth-generation aircraft such as the F-22 and F-35 can carry Airborne Weapons Layer (AWL) munitions, which are roughly 18 inches in diameter and 160 inches long -- about the size of a 2,000-pound bomb. With a range of up to 400 miles, they would provide a much-needed boost-phase intercept capability against Iranian ballistic missiles. During times of increased tension, such aircraft could conduct continuous missile-defense patrols against mobile launchers or remain on station near Iranian missile silo fields.

Second, U.S. policymakers should be more proactive in embracing missile defense in the region. For example, Adm. James Stavridis, the top U.S. commander in Europe, recently told the Senate that "Patriot missile batteries already deployed to southern Turkey could be positioned, with Turkey's consent, to protect a Syrian safe zone and defend against Assad's frequent use of Scud missiles, which are capable of delivering chemical weapons." The first missile or aircraft downed by such a system while attempting to kill Syrians would demonstrate that multinational missile defense forces are a credible deterrent -- a useful lesson for not only Damascus, but also Iran and North Korea. Some critics have challenged the efficacy of missile defense, but successful intercepts of Syrian Scuds would prove that the technology and procedures have evolved greatly since U.S.-led efforts to deal with Saddam Hussein's missile arsenal.

As shown by Israel's Iron Dome, an effective missile defense system has many benefits. Yet none are as important as reassuring civilians, giving diplomats more time to seek peaceful outcomes during crises, and, under certain circumstances, influencing the decisionmaking of totalitarian regimes. Accordingly, Washington and its allies should mount a concerted campaign to convince Tehran that their recent small wins could produce a highly capable missile defense in the Gulf, rendering the regime's efforts to build a large and capable missile force increasingly expensive and ineffective.

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