

# Yemen's "Southern Hezbollah": Implications of Houthi Missile and Drone Improvements

by [Michael Knights \(/experts/michael-knights\)](#)

Apr 1, 2021

Also available in

[العربية \(/ar/policy-analysis/nskht-jnwbyt-n-hzb-allh-fy-alymn-tdayat-althsynat-fy-alswarykh-waltayrat-almsyrt\)](#) /

[Farsi \(/fa/policy-analysis/hzballh-jnwby-ymn-pyamdhay-bhbwd-kyfyt-mwshkha-w-phpadhay-hwthyha\)](#)

## ABOUT THE AUTHORS



[Michael Knights \(/experts/michael-knights\)](#)

Michael Knights is the Jill and Jay Bernstein Fellow of The Washington Institute, specializing in the military and security affairs of Iraq, Iran, and the Persian Gulf states. He is a co-founder of the Militia Spotlight platform, which offers in-depth analysis of developments related to the Iranian-backed militias in Iraq and Syria.



Brief Analysis

**As the Iran-backed rebels make further range leaps that bring them closer to reaching Israel and other countries, the United States needs to start viewing them as a proliferation challenge beyond Yemen's civil war.**

On March 25, Yemen's Houthi militia attacked Saudi Arabia with eighteen explosive drones and eight ballistic missiles, among other weapons, striking energy targets as far away as the oil-rich Eastern Province (around 900 miles from the launch points) and the Red Sea coast (up to 650 miles away). Such attacks are becoming a weekly occurrence, underlining the presence of a mature missile/drone assembly industry in Houthi-held areas of Yemen and foreshadowing further range increases that could allow the Iran-backed rebels to reach new targets if they so desire—perhaps Israel given their known enmity toward that country, or even Egypt and Jordan as part of a wider effort to exert themselves in the Red Sea (e.g., hindering international shipping, targeting Suez Canal infrastructure). Accordingly, U.S. diplomats and military planners will need to factor this threat complex into their future calculations beyond the current Yemen war.

## Evolution of Houthi Missiles and Drones

Six years into the current conflict, the maturation of Houthi drones, missiles, and shorter-range rockets has been well-documented in multiple reports by the UN Panel of Experts, the U.S. government, specialist technical consultancies, and other sources. Their full suite of long- and short-range strike systems has evolved in three stages:

**Initial systems.** The Houthis' early supply of rockets and converted air defense systems came through two sources: forming an alliance with deposed president Ali Abdullah Saleh, and raiding or seizing military depots. A 2015 Saudi

air campaign against known armories removed some long-range missiles from the Houthi arsenal, and the rest of this initial arsenal was expended by 2017, with assistance from a minor advisory effort by Iran's Islamic Revolutionary Guard Corps (IRGC). At least six OTR-21 Tochka and 18 FROG-7 artillery rockets (called Zelzal by the Houthis) were fired at close-range targets in Yemen and the Jizan and Najran border provinces of Saudi Arabia, while four surviving prewar R-17 Scud-B or Hwasong-6 (North Korean Scud-C) missiles were fired into the kingdom at ranges up to 500 miles. The Houthi long-range mainstay during this period was the Qahir-1, a converted Yemeni S-75/SA-2 surface-to-air missile capable of hitting ground targets around 190 miles away, albeit with very poor accuracy and a small payload.

**Developing new systems.** The Qahir-1 conversion was the first strong indicator of Iran's role in mentoring Houthi missile forces, mirroring Tehran's own conversion of Soviet S-75/SA-2 missiles into the Tondar-69 short-range ballistic missile. In 2017-2018, IRGC advisors were integral to the development of several advanced new platforms well beyond the capacity of Yemeni technicians:

- The Qasef-2K, a clone of Iran's Ababil-T explosive drone (or loitering munition), intended for use against targets inside Yemen and up to 120 miles off the Red Sea coast.
- A precision strike version of the solid-fuel Badr artillery rocket that could be assembled almost entirely inside Yemen and fired at Saudi border provinces at ranges of around 100 miles.
- The Sammad series of loitering munitions, which emerged in 2018 and could mount symbolic strikes on Saudi targets as far away as Shaybah (750 miles) and Ras Tanura (900 miles), as well as Abu Dhabi International Airport in the United Arab Emirates (850 miles).
- The liquid-fuel Burkan-2H medium-range ballistic missile, which combined Scud parts and Iranian Qiam missile parts with the express purpose of reaching Riyadh and Yanbu (650 miles). In February 2021, an extended-range version (Burkan-3 or Zolfaqr) struck Ras Tanura at a range of 900 miles.

**Maturing capabilities, increasing strikes.** Given the number of attacks that have been launched in recent years using all of these systems, it is clear that Iran and the Houthis have developed a small but effective military industry in Sanaa and Saada. As the [UN Panel of Experts documented \(https://reliefweb.int/report/yemen/final-report-panel-experts-yemen-s202179-enar\)](https://reliefweb.int/report/yemen/final-report-panel-experts-yemen-s202179-enar), this industry fuses imports from Iran (e.g., drone engines, guidance systems, liquid/solid-fuel components) with domestically available military items and imported industrial materials (e.g., fiberglass). Through such methods, the Houthis can sustain a prolonged campaign of rocket, drone, and missile strikes. According to The Washington Institute's count of announced attacks, the rate of launches is greatly accelerating—this March alone, 70 major weapons systems were fired into Saudi Arabia (24 Sammad-3, 25 Qasef-2K, 17 Badr type, 3 Burkan-3, and 1 Quds-2 cruise missile), compared to 25 in February and 3 in January.

## Next Stages in Houthi Strike Operations

On or just before March 12, the Houthis showcased a number of new systems and variants at an arms exhibition in Sanaa. These and other revelations indicate that the next steps in Houthi strike capabilities will likely include the following:

- **Increasing accuracy in artillery rockets.** Houthi artillery rockets have progressed from the Badr-1 (unguided), to the Badr-1P and Badr-F (guided with a claimed circular error probable of 3 meters), to new variants called Sair, Qasim, and Nakal (the Houthis claimed to use a Sair in the March 25 strike). If the latest systems can combine accuracy with slightly extended range, they could seriously disrupt the Saudi airbase in Khamis Mushait, the linchpin for the [defense of Marib \(https://www.washingtoninstitute.org/policy-analysis/saving-yemen-peace-process-blunting-houthi-push-marib\)](https://www.washingtoninstitute.org/policy-analysis/saving-yemen-peace-process-blunting-houthi-push-marib).
- **Use of Sammad-4 unmanned combat aerial vehicles (UCAVs).** A bomb-dropping UCAV variant of the Sammad like the

one shown at the exhibition would allow the Houthis to use a single drone for repeated attacks against a wide variety of Red Sea targets, including ships and air defense systems.

- **Use of delta-wing attack drones and Quds-2 cruise missiles.** Also shown at the March exhibition, Waid is the Houthi name for the loitering munition that Iran used to attack Saudi pipelines and the Abqaiq oil facility in May and September 2019, respectively. Those attacks came from Iraq at a range of up to 600 miles; in Houthi hands, a weapon with such reach would improve their strike capabilities against Red Sea coastal targets and possibly parts of Riyadh. The Quds-2 cruise missile, the Houthi name for Iran's 430-mile-range Ya-Ali missile, was highlighted at the exhibition as well, and will likely turn up in Yemen in greater numbers soon, further threatening Red Sea targets.
- **Potential development of Burkan-4.** The range jump from Burkan-2H (650 miles) to Burkan-3 (900 miles) was a worrisome 38% increase. Eilat, at the southern tip of Israel, is just 1,100 miles away from certain Houthi launch areas, and the rest of Israel (along with various parts of Egypt and Jordan) are within 1,250 miles. In other words, with an additional range increase of just 20%, Houthi missiles (or Sammad drones) would be capable of striking Israel—which may explain why some of that country's overstretched missile defenses are already redeploying to face Yemen.

## Policy Implications Beyond the Yemen War

If the Houthis overrun Marib, Yemen's energy hub, they will effectively win the war they launched in 2014 when they overran Sanaa. Even without Marib, they now control the capital, two major Red Sea ports, and most of the population, which they can use as cannon fodder on the battlefield and human shields off of it. Thus, either a win or a draw would ensconce the Houthis as a new "southern Hezbollah" on the Red Sea—mirroring the position of Lebanese Hezbollah on the Mediterranean—with a growing arsenal of ballistic missiles, cruise missiles, and drones capable of threatening the Suez Canal, the Bab al-Mandab Strait, the Gulf states, the Red Sea states, and perhaps even Israel. To counter this threat during the remainder of the war and afterward, the United States should take the following steps:

- **Prevent further Houthi expansion.** U.S. interests are not served by the Houthis controlling Marib, which may be a springboard for further expansion southward and eastward. Washington should leverage a full range of tools to prevent this outcome, such as: designating various leaders of Ansar Allah (the Houthi movement's formal name) under Executive Order 13611, the authority used for blocking the property of individuals who threaten "the peace, security, or stability of Yemen"; undermining Houthi leaders by disclosing intelligence on their corruption or Iranian ties; and conducting nonlethal U.S. demonstrations of force in support of Marib's defense, such as information operations broadcasts and resupply airdrops to the defenders.
- **Tighten the screws on Houthi strike forces.** The United States and its partners should intensify their efforts to map out missile and drone procurement networks and expose them to kinetic, cyber, financial, and counter-smuggling operations. Southeast Yemen and Oman are the primary import locations, so they should receive the most scrutiny. Separately, any international peace deal and sanctions relief must be conditioned on the Houthi part of Yemen removing Iranian technicians and coming back into compliance with the Missile Technology Control Regime—which means giving up all of its missiles.
- **Build shared early-warning networks in the Red Sea.** Given the growing threat that the emerging "southern Hezbollah" poses to Saudi Arabia, Egypt, Israel, and Jordan, Washington should quietly convene a closed-door meeting of this Red Sea security quartet and develop medium-term plans for southward-facing defensive cooperation (<https://www.washingtoninstitute.org/policy-analysis/saudi-air-defense-problem-us-opportunity>).
- **Think the unthinkable.** Although the war to roll back the Houthi coup has become a political lightning rod in the United States, Washington should undertake a dispassionate review of its policy toward the Houthis, assessing their future intentions toward not only U.S. personnel and facilities in the region, but also Israel, international shipping, Saudi Arabia, Iran, and Hezbollah. If such a review concludes that the Houthis are likely to be a U.S. adversary in the future

regardless of how the Yemen conflict ends, then officials should start thinking about a containment strategy now rather than later. Given the group’s growing long-range arsenal and its commitment to its official motto of “Death to America, death to Israel, curse the Jews, victory to Islam,” such contingency planning already seems prudent.

*Michael Knights, the Bernstein Fellow with The Washington Institute, has visited Yemen and the Gulf coalition states multiple times to observe military operations during the war. Institute research assistant Henry Mihm provided data analytics for this PolicyWatch.* ♦

---

## RECOMMENDED

---



### BRIEF ANALYSIS

## Targeting the Islamic State: Jihadist Military Threats and the U.S. Response

February 16, 2022, starting at 12:00 p.m. EST (1700 GMT)



Ido Levy,  
Craig Whiteside

(/policy-analysis/targeting-islamic-state-jihadist-military-threats-and-us-response)



### BRIEF ANALYSIS

## Challenges to Taliban Rule and Potential Impacts for the Region

Feb 9, 2022



Mohamed Mokhtar Qandil

(/policy-analysis/challenges-taliban-rule-and-potential-impacts-region)



### BRIEF ANALYSIS

# The Middle East at the Olympics: Six Countries Compete While Great Power Politics on Display

Feb 9, 2022

◆  
Carol Silber

(/policy-analysis/middle-east-olympics-six-countries-compete-while-great-power-politics-display)

## TOPICS

Arab-Israeli Relations (/policy-analysis/arab-israeli-relations)

Gulf & Energy Policy (/policy-analysis/gulf-energy-policy)

Military & Security (/policy-analysis/military-security)

Proliferation (/policy-analysis/proliferation)

## REGIONS & COUNTRIES

Egypt (/policy-analysis/egypt)

Gulf States (/policy-analysis/gulf-states)

Iran (/policy-analysis/iran)

Israel (/policy-analysis/israel)

Jordan (/policy-analysis/jordan)