

Under Fire in the Bab al-Mandab: Houthi Military Capabilities and U.S. Response Options

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Dec 8, 2023

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Brief Analysis

The group is using a wide range of weapons and tactics to escalate its disruption of regional maritime security, establishing selective sea denial against Israeli vessels seeking passage through the strait and threatening U.S. warships that show up to protect them.

Given their close relations with the Iranian regime and their traditional hostility toward the United States, Israel, and Saudi Arabia, it is no surprise that Yemen's Houthis have a [long history](https://www.washingtoninstitute.org/policy-analysis/curbing-houthi-attacks-civilian-ships-bab-al-mandab) (<https://www.washingtoninstitute.org/policy-analysis/curbing-houthi-attacks-civilian-ships-bab-al-mandab>) of threatening freedom of navigation through the Bab al-Mandab Strait (BAM). From forcing Riyadh to halt tanker traffic in 2018 to sending Israeli-linked vessels on [costly detours around Africa](https://www.washingtoninstitute.org/policy-analysis/houthi-ship-attacks-are-affecting-red-sea-trade-routes) (<https://www.washingtoninstitute.org/policy-analysis/houthi-ship-attacks-are-affecting-red-sea-trade-routes>) over the past few weeks, the group has been able to exert disproportionate leverage on Red Sea security calculations by wielding an array of Iranian and homemade weapon systems.

Houthi Operations During the Hamas-Israel War

On October 10, just three days after the Gaza war broke out, the Houthis [threatened](https://tass.com/world/1688079) (<https://tass.com/world/1688079>) to fire missiles and drones at Israel in coordination with Iran's "axis of resistance" if the United States intervened in the conflict. Nine days later, they began launching salvos of one-way attack drones and cruise missiles at Israel, mostly aimed at the southern port of Eilat (all of the strikes were intercepted). These attacks were repeated every few days until October 31, when the Houthis escalated by firing a medium-range ballistic missile that Israel intercepted with the Arrow-2 defense system.

Eilat is more than 1,800 kilometers from the Houthis' known missile base near Sanaa and about 1,600 km from the

nearest territory they control, raising questions about the reach of Houthi weapons. In September, the group paraded its new Toophan ballistic missile, which looks identical to Iran's Ghadr-H and -F (maximum range 1,650 and 1,948 km, respectively). On November 9, Israel used an Arrow-3 to bring down a ballistic missile over the Red Sea, a first for the more capable interceptor.

After repeatedly failing to penetrate Israel's defenses, the Houthis switched to different tactics. On November 16, they announced a de facto denial campaign until Israel ends its invasion of Gaza, warning that BAM and surrounding waters would be closed to Israeli-linked vessels and any warships that directly or indirectly protect them. On November 19, a Houthi boarding party landed on the Israeli-owned, Japanese-operated vehicle carrier *Galaxy Leader* using a helicopter, taking the ship and its hostage crew to an anchorage north of Hodeida (for more on this incident, see PolicyWatch 3820 (<https://www.washingtoninstitute.org/policy-analysis/houthi-ship-attacks-are-affecting-red-sea-trade-routes>)). On November 25, the Houthis targeted the Israeli-linked container ship *CMA CGM Symi* in the Indian Ocean using a one-way attack drone.

U.S. Navy vessels have been threatened as well. On November 26, when the destroyer USS *Mason* **foiled** (<https://www.navy.mil/Press-Office/News-Stories/Article/3602383/combined-multinational-effort-averts-attempted-seizure-in-the-gulf-of-aden/>) an attempted seizure of the Israeli-owned chemical tanker *Central Park* in the Gulf of Aden 100 km off Yemen's coast, two Houthi ballistic missiles were reportedly launched at the warship, splashing down about 16 km away. Although U.S. authorities announced that the missiles were not intended to cause any harm to the *Mason*, antiship ballistic missile attacks are becoming a reality of life in the BAM area. On December 4, another salvo landed near the British-owned bulk carrier *Unity Explorer*. The fact that these antiship missiles have yet to hit a moving vessel could stem from insufficient training, experience, intelligence data, or accuracy.

Possible Iranian Role

Many observers expect that Iran will soon step in to improve Houthi targeting, both by sharing timely intelligence and by modifying the group's missile navigation systems. Tehran might also provide the recently developed Shahed-136 suicide drone variant with an electro-optical seeker head, which makes it a true loitering munition capable of seeking out and precisely attacking a moving target. The Houthis are not yet known to possess this capability.

Iran has also apparently helped the group extend its reach in the Red Sea. The Houthis control Hodeida province, encompassing most of Yemen's Red Sea coastline and the ports of Hodeida and al-Salif/Ras Issa, which handle about 70 percent of the country's imports and foreign aid. Yet the internationally recognized government controls parts of Taizz province near BAM as well as the long Gulf of Aden coastline. To project power southward, Houthi naval forces must therefore either sail past the busy strait (which is hardly monitored) or use "motherships" already located in the Gulf of Aden.

In the past, Iran's military maintained a spy and armory ship called the *Saviz* just north of BAM, but it was **badly damaged** (<https://www.washingtoninstitute.org/policy-analysis/iran-and-israels-undeclared-war-sea-part-2-potential-military-escalation>) in April 2021 by what was said to be an Israeli drone or missile strike. Since then, the Islamic Republic of Iran Navy (IRIN) has increased its "antipiracy and intelligence collection" presence in the area, with the frigate *Alborz* **currently operating** (<https://www.tasnimnews.com/fa/news/1402/09/10/2998256/دربادار-ایرانی-مطرح-کرد-حضور-همزمان-دو-ناوشکن-ایرانی-در-خلیج-عدن-و-دریای-سرخ>) in the Red Sea and the frigate *Jamaran* in the Gulf of Aden.

Sea-Denial Capabilities

Since 2015, and especially since their ceasefire with Saudi Arabia, the Houthis have accumulated significant area-denial capabilities, mostly provided by Iran. In some cases, they have received complete weapons systems or kits

to be assembled in Yemen; in other cases, Iran has provided technological know-how and equipment to either modify existing Houthi weapons or locally produce Iranian designs using smuggled components and assemblies. As a result, the Houthis can selectively disrupt freedom of navigation around the BAM using a range of capabilities and tactics, some of which have been employed in recent attacks:

- Limpet mines
- Board-and-seize operations using small boats and/or helicopters
- Manned or remotely guided torpedo attacks using specially trained divers
- Short-range rocket fire from speedboats
- One-way attack drones such as the Shahab, Qasef, and Waid
- Various antiship cruise missiles that can reach from 80 to 300 km, including the Sayyad and Sejjil
- Antiship ballistic missiles, which offer the longest reach (up to 300 km) but require timely targeting intelligence provided by drones, vessels, or partner forces (e.g., Iranian drones or naval assets in the area).

Houthi Sea-Denial and Anti-Ship Missiles									
Missile	First Reported	Length (m)	Diameter (mm)	Warhead Weight (kg)	Propulsion	Range (km)	Guidance	Notes	
F-1000 (Houthi version)	2018	6.27	400	100	1-stage	100	inertial/terrain		
F-1000 (Houthi version)	2018	6.27	400	100	1-stage	100	inertial/terrain		
Al-Musabih-1 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-2 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-3 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-4 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-5 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-6 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-7 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-8 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-9 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-10 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-11 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-12 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-13 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-14 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-15 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-16 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-17 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-18 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-19 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		
Al-Musabih-20 (Houthi)	2018	6.8	380	100	1-stage	100	inertial/terrain		

(/sites/default/files/2023-12/houthi-seadenial-antiship-missiles-table-POL3821.jpg)

In 2022, the Houthis also claimed to have an antiship ballistic missile called Tankil with a range approaching 500 km, closely resembling Iran’s Raad-500 missile. Yet the examples displayed at a **September 21, 2023, military parade** (<https://www.washingtoninstitute.org/policy-analysis/yemens-southern-hezbollah-celebrates-coup-anniversary-deadly-fashion>) in Sanaa looked like mockups. The new Haatem ballistic missile (similar to Iran’s Kheibar Shekan, which has a claimed range of 1,450 km) was revealed to be a mockup as well, indicating that the Houthis were trying to project a significantly longer-range precision-strike capability than what they actually possess.



(/sites/default/files/2023-12/houthi-haatem-missile-comparison-POL3821.jpg)

A supposed Haatem precision-guided ballistic missile at a September 2023 Houthi military parade (top) compared to an Iranian Kheibar Shekan ballistic missile (bottom). Close examination of the photo and video footage from the parade reveals that the Houthi example is a mockup lacking all the features of an operational missile (e.g., warhead-body attachment points, rivets, external connection ports). Photo credit: Al Masirah Television (top), IRIBUTV (bottom).

Fake missiles aside, the maximum current reach of Houthi antiship missiles appears to be 300 km if launched from their territory. This means a ship approaching BAM from the Gulf of Aden could be threatened by a missile fired from as far north and inland as Dhamar, while a ship using the Maritime Security Transit Corridor (MSTC) could be targeted from Sanaa (see below for more on this corridor).

One-way attack drones present a longer-range threat, albeit a less destructive one. The only known Houthi version

capable of targeting a moving ship is the Shahab, derived from the Sammad family. Equipped with an electro-optical (apparently daylight only) terminal guidance seeker head, the drone is believed to have a maximum range between 600 and 1,200 km while carrying a relatively small warhead of about 40 kilograms.



A Houthi Shahab drone. Photo credit: Al Masirah Television.

Recommendations

Securing the Bab al-Mandab and surrounding waters is key to ensuring the unhindered passage of trade throughout the region, including the Gulf of Aden, one of the world's busiest shipping lanes. To safeguard international commerce and a host of other regional interests, the United States should take the following steps:

- **Consider targeting Houthi missile and drone launch sites, coastal radar sites, and related weapons storage sites** as a message to the Houthis that their recent actions will not be tolerated. Although their attacks have produced few results so far, they might eventually hit the jackpot if permitted to continue their apparent trial-and-error approach. When the Houthis fired antiship missiles at U.S. Navy vessels in October 2016, the United States struck several coastal radar sites with Tomahawk cruise missiles, which seemed to halt further Houthi launches at the time.
- **Redesignate the Houthi movement as a Foreign Terrorist Organization**, impose more U.S. sanctions (<https://www.washingtoninstitute.org/policy-analysis/goldilocks-approach-sanctioning-yemens-houthis>), and press relevant UN bodies to declare Houthi activities in international waters as maritime terrorism according to (<https://www.imo.org/en/About/Conventions/Pages/SUA-Treaties.aspx>) the 1988 Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation.
- **Increase support to the Yemeni Coast Guard**, which is run by the internationally recognized government. With the help of relevant British and UN bodies, the United States could provide better training and better-equipped vessels with more effective defensive capabilities, as well as improved intelligence collection and sharing capabilities so that they can assume expanded roles beyond coastal and port security. In March, a U.S. delegation met with (<https://www.centcom.mil/MEDIA/NEWS-ARTICLES/News-Article-View/Article/3318176/us-leaders-deepen-maritime-cooperation-during-yemen-visit/>) senior Coast Guard representatives in Yemen and discussed future opportunities to deepen bilateral and multilateral naval cooperation as part of the Combined Maritime Forces (CMF), of which Yemen is a member. Expanding such contacts would help coordinate regional maritime security efforts, bolster partner capacity and interoperability, and fill security vacuums in various regional waterways.
- **Position U.S. strategic and tactical reconnaissance assets closer to (and in some cases within) the region** to establish better awareness of Houthi missile and drone capabilities and activities. Now that the Gaza war has resumed at full scale, Iran will likely ask its Houthi partners to escalate their kinetic efforts at some point by directly targeting U.S. naval assets. The presumed goals of such action would be twofold: to raise the cost of maintaining an active U.S. military presence in the region and increase U.S. pressure on Israel to implement an indefinite ceasefire.
- **Establish an international naval task force** with unified command and expanded authorities to protect all shipping

traffic in the Red Sea and surrounding waters. This entity should be empowered to engage in forceful defensive combat action if necessary to deter Iran and its proxies from further destabilizing activity.

- **Closely monitor Iran’s naval forces** (both IRIN and the Islamic Revolutionary Guard Corps Navy) for any sign that they are positioning more of their surface units and long-range drones in the BAM region to directly or indirectly facilitate Houthi targeting accuracy. U.S. and coalition forces should be prepared to thwart such activity if necessary.
- **Persuade entities such as the CMF, the International Maritime Security Construct, and its operational arm, Coalition Task Force Sentinel, to establish a networked maritime air and missile defense capability.** This effort could echo the CMF’s 2017 creation of the MSTC (<https://combinedmaritimeforces.com/maritime-security-transit-corridor-mstc/>), which combines four existing internationally recognized shipping corridors in the region and enables partners to better focus their naval presence and surveillance efforts.

Farzin Nadimi is a senior fellow with The Washington Institute and author of its recent study “[The Next Generation of Iranian Ballistic Missiles](https://www.washingtoninstitute.org/policy-analysis/next-generation-iranian-ballistic-missiles-technical-advances-strategic-objectives) (<https://www.washingtoninstitute.org/policy-analysis/next-generation-iranian-ballistic-missiles-technical-advances-strategic-objectives>).” ❖

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