

The data from this report come from the November 1, 2024, version of GRID—the GTTAC Record of Incidents Database.

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Terrorist Use of

# Drones

November 26, 2024

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*The GTTAC Record of Incidents Database (GRID) collects and classifies open-source data on terrorism incidents globally and is used to support the development of the Annex of Statistical Information for the Country Reports on Terrorism. Data used in this report are from the GRID. Views expressed in this report are those of the authors and do not necessarily reflect the position of the United States government.*

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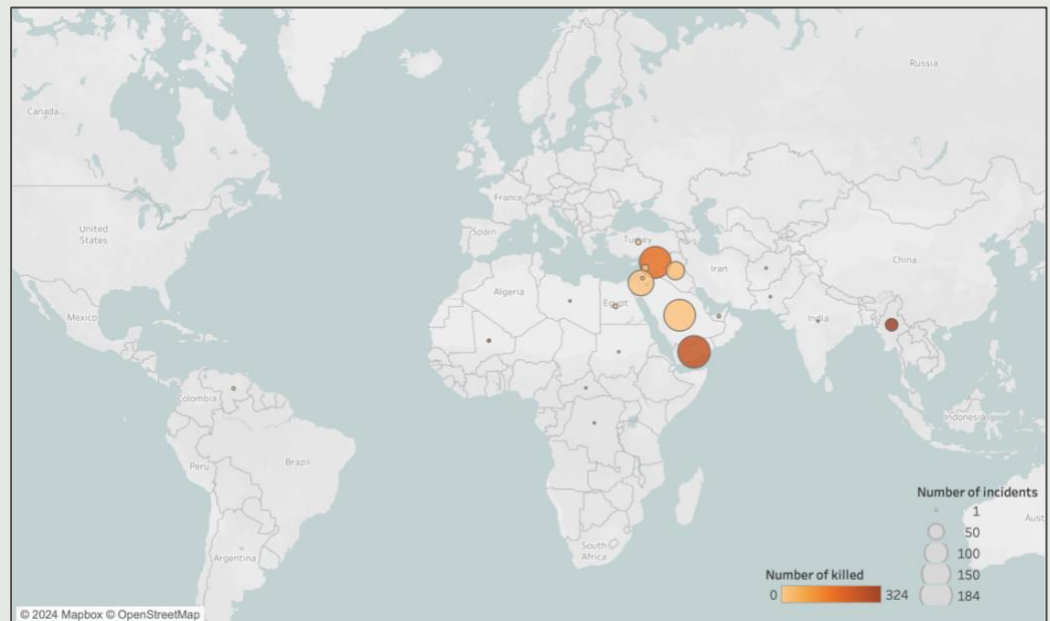
Unmanned aerial vehicles (UAVs, commonly known as drones) have proven to be gamechangers in modern warfare and violent conflicts. Their deployment in the war between Ukraine and Russia, the Karabakh conflict between Azerbaijan and Armenia, and the Libyan Civil War has demonstrated their effectiveness in high-definition surveillance, precision strikes, and causing significant destruction. While militaries compete to incorporate high-tech drones into their arsenals, the rapid adaptation of this technology by malign nonstate actors poses unprecedented challenges to global security and counterterrorism efforts.

Drones offer unconventional capabilities to nonstate actors who lack fighter planes and air

forces, enabling them to conduct remotely controlled or programmed attacks in the air domain. Since military drones are strictly regulated and unavailable to nonstate actors, they primarily rely on over-the-counter drones in their operations. The increasing accessibility and affordability of civilian drones have significantly lowered the barrier to entry for nonstate actors. For just a few hundred dollars, a malign actor can build or purchase a commercially available drone, customize it with add-ons such as release mechanisms, and equip it to carry an explosive payload to its intended target. Over time, drones' payload capacities have increased and their operational ranges have expanded, making the exploitation of this technology increasingly threatening.



Figure 1. Map of Drone Attacks by Nonstate Actors (2018 to September 2024; Source: GRID)



The evolution in drone technology has allowed destructive attacks against major strategic and symbolic targets that would otherwise be unattainable. The use of remote aerial technology has increased the vulnerability of commercial vessels, military installations, production and transfer facilities, communication and transportation hubs, and oil, gas, electric, and nuclear infrastructure to terrorist attacks. Between 2018 and September 2024, the GTTAC Record of Incident Database (GRID) records 810 drone attacks carried out by nonstate groups for terrorist purposes. These incidents drone attacks following October 7, 2023.

As illustrated on the map (Figure 1), drone attacks are concentrated predominantly in the Middle East, particularly in Yemen, Syria, Saudi Arabia, Israel, and Iraq. The Houthis, Hizballah, and the Islamic Resistance in Iraq are among the most frequent perpetrators of drone attacks (Figure 2). Iran-backed groups (e.g., the Houthis, the Islamic Resistance in Iraq, Hizballah, and Hamas) are responsible for more than 70% of all worldwide drone attacks since 2018, using modified [civilian off-the-shelf drones or Iranian-supplied military-type drones](#). These groups have escalated their drone attacks in response to the Israeli invasion of Gaza in the aftermath of Hamas’s October 7 attack.

## GTTAC Defining Terrorism

An incident is deemed a terrorist act if it conforms with Title 22, Section 2656f, of the U.S. Code. It is therefore defined as a violent act carried out by nonstate actors that meets the following inclusion criteria:

- The violent act aims to attain a political, economic, religious, or social goal.
- The violent act includes evidence of an intention to coerce, intimidate, or convey some other message to an audience (or audiences) larger than the immediate victims.
- The violent act occurred outside the precepts of international humanitarian law, as far as it targeted non-combatants.

The Global Terrorism Trends and Analysis Center includes only those incidents for which all three criteria were met. In some cases where terrorists initiate an action that targets military forces rather than non-combatants, this would be considered an incident.



Yemen tops the list, highlighting the extensive use of drones by the Houthis for domestic Yemeni government targets. On January 18, 2020, Houthi militants launched a missile and drone attack on a Yemeni military training camp in Ma'rib during evening prayers, killing 79 soldiers and injuring 150 others—one of the deadliest assaults driven by unmanned aerial vehicles.

The Houthis also have carried out transnational attacks targeting Saudi Arabia, Israel, and commercial vessels in the Red Sea. The Houthis lead the list of nonstate actors with 326 drone incidents, resulting in 249 deaths and 404 injuries. They have launched several barrages of drone and missile attacks on Saudi Arabia, targeting critical energy infrastructure, including oil and natural gas facilities, causing significant economic damage and disrupting the global oil market.

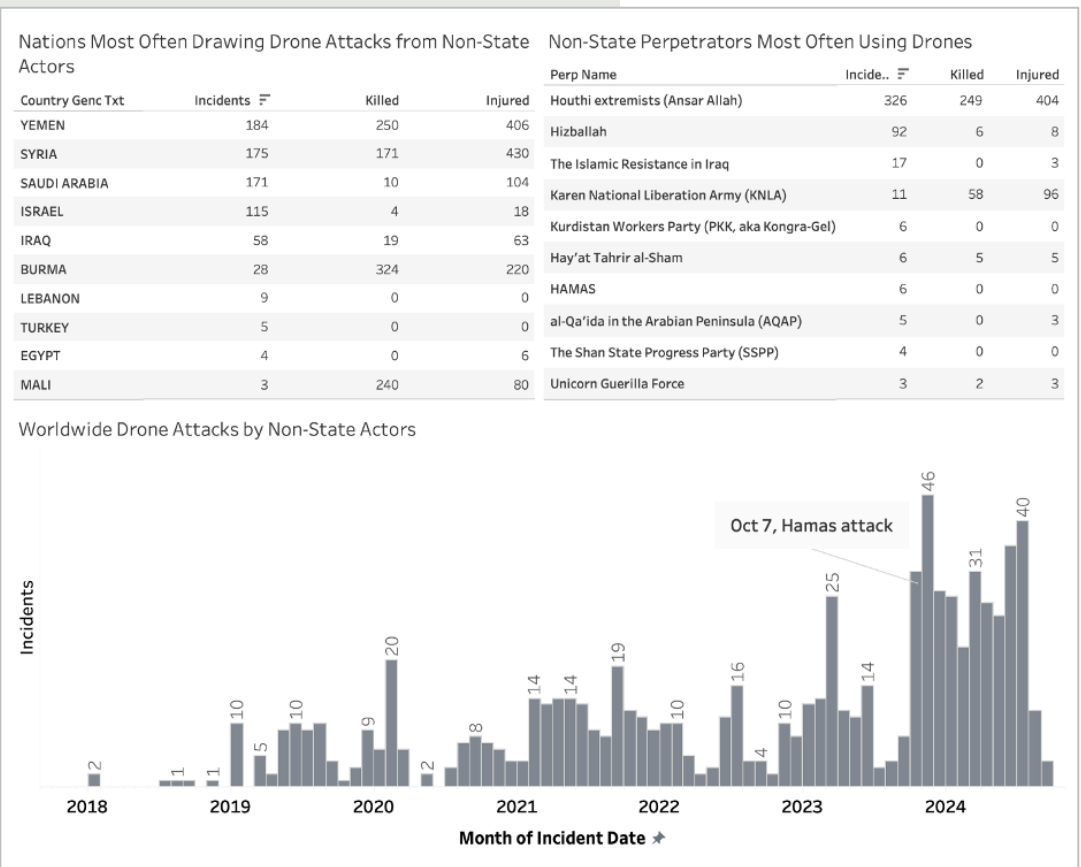
On October 7, 2023, Hamas attacked Israel with more than a thousand fighters breaching southern Israel. During the attack, Hamas used quadcopter drones to target Israel's observation towers near the Gaza border and other military installations, including a machine-gun

In the aftermath of the attack and Israel's subsequent military operations in Gaza, Iran-backed groups such as Hizballah, the Islamic Resistance in Iraq, and the Houthis conducted more than 90 drone attacks into Israel. However, most of these attacks were intercepted by Israel's air defense systems or allied systems before reaching Israeli territory. Only one person in Israel has been killed by a drone attack since October 7, demonstrating the efficacy of its air defense systems.

## Understanding the Data

GRID records only those incidents that meet its criteria for inclusion. While some incidents do meet those criteria, this is not necessarily representative of some of the complex and multifaceted drone incidents.

**Figure 2. Drone Attacks by Nonstate Actors (2018 to September 2024; Source: GRID)**





Iran-backed groups—including the Houthis, Hizballah, Hamas, and the Islamic Resistance in Iraq—have increasingly adopted drones to target U.S. military installations, defense systems managed by American and Israeli forces, and international commercial vessels in the Red Sea. GRID records indicate that U.S. military installations overseas were targeted 117 times with drones. In January 2024, the Islamic Resistance in Iraq used a one-way kamikaze drone to target the Tower 22 military base in Jordan near the Syrian border, killing three U.S. soldiers and wounding 40 others.

The Houthis, in particular, have used aerial drones and missile strikes to attack commercial vessels in the Red Sea, where approximately [\\$1 trillion in](#) goods transit annually. Since the Gaza war began in October 2023, the Houthis have targeted more than 90 commercial vessels with missiles and drones, sinking or seizing several vessels and killing seafarers. The Houthis have also employed unmanned surface vessels to target commercial vessels. In June, they successfully struck a commercial vessel with a drone boat and caused considerable damage.

As the use of drones increases, comprehensive risk assessments are crucial to protect vulnerable places and populations from drone attacks. Without robust detection and mitigation systems, vital assets remain exposed to significant threats. However, existing systems do not guarantee 100% protection. Perpetrators can deploy drone swarms—a coordinated, simultaneous use of numerous drones—to overwhelm air defense systems.

A major challenge for policymakers is the disproportionate cost of conducting drone attacks versus countering them. For example, an Iranian-made [Shahed-136 kamikaze drone costs around \\$50,000](#), can travel 1,600 miles, and carry a 110-pound warhead. In contrast, intercepting a single drone with a counter-drone system can [cost up to \\$2 million—20 times the cost of the drone](#)—creating an economic burden that can deplete resources allocated for defense and national security. This imbalance underscores the strategic advantage drones provide to malign actors. As drone technology reshapes terror tactics—enabling nonstate actors to carry out low-cost, high-impact, disruptive and destructive attacks—governments remain unprepared to adequately protect their critical assets and infrastructure from this emerging air-domain threat.

