- BUSINESS

Weapon Makers Declare War on Drones

A new arms race in anti-drone technology is emerging, as airports and militaries face an increasing menace from unmanned aircraft

Boeing displayed a hobbyist drone that had been downed by an anti-drone system, at a recent arms fair in Abu Dhabi. PHOTO: ROBERT WALL/THE WALL STREET JOURNAL

55 COMMENTS

By

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Arms makers are targeting the growing menace of drones at airports and on battlefields with a rush to develop new missile systems, radar jammers and laser cannons.

U.S. forces, along with Middle East allies and Russian troops, have been forced to confront hostile drone operations. Commercial flights at some of the world's busiest hubs—in New York, London and Dubai—have been grounded in recent months amid concerns that nearby drones could endanger airliners.

The rising number of incidents has put the threat in the public eye and propelled interest in anti-drone technology. Defense industry officials say armed forces still account for most spending.

Three Ways to Kill a Drone

Counter-drone technology options differ depending on the target.

Note: Ranges are approximate.

Sources: staff reports; Lockheed Martin; ST Engineering Electronics; Poly Technologies

The anti-drone market should exceed $1.2 billion in annual sales next year and top $1.5 billion in 2021, Frost & Sullivan estimated. While that is a fraction of the spending each year on combat aircraft, the fast-growing category could become a lucrative new revenue stream for weapons makers.

Drones are "starting to become a really big problem," said Hakan Buskhe, chief executive of Swedish defense company Saab AB. Anti-drone equipment "is something we are in discussion on with many countries and authorities around the globe."

For airports, the principal way to counter drones is to disrupt their radio and navigation links. Industry executives say few tech suppliers have invested in the technology so far, although London Gatwick airport has said it has bought unspecified military-grade counter-drone equipment. Gatwick endured three days of disruption in December because of malicious drone use, during which police were cleared to shoot down the drone. The opportunity never arose.

Armed forces, in contrast, typically have more leeway to use lethal force to down unmanned aircraft because they don't have to worry about nearby airplanes and civilians. That has prompted a global arms race among manufacturers to develop new anti-drone technology. Often the same companies that sell drones also market equipment to down them.

Drone ArmiesThe number of countries that operate militarydrones of different sizes jumped over the pastdecade.Source: Center for the Study of the Drone .countries20092019Less than330 lbs330-1,3001,300+0255075100125150

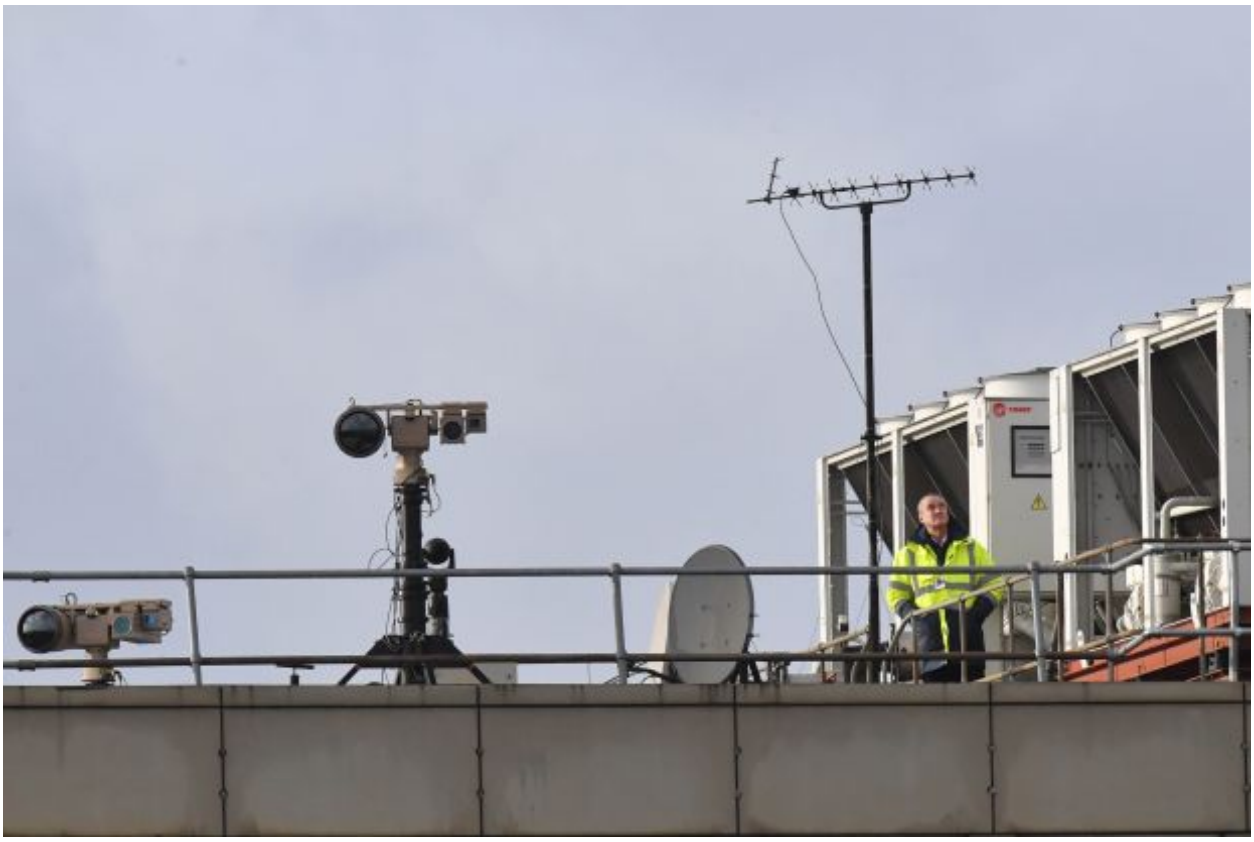
Counter-drone systems designed for armed forces vary in complexity because the unmanned-aircraft threat is diverse, ranging from modified hobbyist equipment to sophisticated military systems.

Lockheed Martin Corp. , the Pentagon's biggest weapons maker by sales, last month teamed with Germany's Diehl Defence GmbH and Sweden's Saab AB to sell a system for taking down drones, aircraft and missiles. It uses missiles to shoot down larger drones, while its radar also can spot smaller ones.

The companies are trying to sign the United Arab Emirates as a launch customer for the project, Scott Arnold, Lockheed's vice president for air and missile defense, said at a recent Abu Dhabi arms fair.

The Falcon Weapon System consists of multiple vehicles that can move with ground troops to provide an air-defense umbrella. One truck carries a radar to spot the threat, another truck is a command post, while a third truck fires heat-seeking missiles to take down threatening aircraft.

Other counter-drone systems are designed to be carried by individuals.



Anti-drone equipment deployed on a rooftop at London Gatwick airport in December, after drones were spotted over the airfield. PHOTO: JOHN STILLWELL/PA WIRE/ZUMA PRESS

Singapore's ST Engineering Electronics Ltd. sells a 6.6-pound radar gun powered by a 24-pound battery backpack that can jam a drone's GPS signal and disrupt the radio link to its operator. The system has a radio-frequency detector with a range of 1.2 miles and comes with a camera that can identify drones 550 yards away.

A version of the system was used to protect last year's summit meeting in Singapore between President Trump and North Korean leader Kim Jong Un. It is being marketed for export, but the company hasn't said who, if anyone, is buying.

Diehl Defence, in addition to its work with Lockheed, has developed a system to fire electronic bursts at a drone to fry its electronics. It has a range of more than 0.6 miles and comes in a smaller, civil version with about half that range.

The military version can be vehicle-mounted to move with front-line troops and protect their camp, and can take down sophisticated drones that don't depend on GPS or links with an operator.

The U.S. and others are already experimenting with even more futuristic technologies.

Boeing Co. in 2015 used a laser to shoot down a small drone and it has since delivered such equipment to the U.S. Army. The Mobile Expeditionary High Energy Laser was mounted on a Stryker combat vehicle and used in exercises, including last year. Boeing says the system, demonstrated with up to 10 kilowatt of power, functions like a welding torch that can heat up a target hundreds of yards or more away.

China has developed a truck-mounted laser. State-owned Poly Technologies Inc. says its system has a range of up to 4 kilometers in its high-power version. It hasn't disclosed if the laser is used by the Chinese military or exported.

So far, no technology has emerged as a clear winner.

The rush to counter drones comes with potential pitfalls, industry analysts say. Some systems being bought might not be effective against the drones the buyer wants to defeat, said Arthur Holland Michel, co-director of Bard College's Center for the Study of the Drone.

"Everyone is so preoccupied by this threat they are willing to give anything a try," he said.