The Drone Challenge: Why They Are Hard to Intercept and How Much It Costs to Shoot Them Down

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In recent years, drones have gone from niche technology to key players in modern conflicts. Their massive use in Ukraine, the Middle East, and even in European skies has shown how effective, economical, and difficult to counter they can be. At the same time, they have highlighted the opposite problem: the extremely high costs of intercepting them compared to the relatively low price at which they can be produced and launched.

The Rise of Drones in Conflicts

The war in Ukraine has been the main laboratory for the use of drones for military purposes. Kiev has used them to strike deep targets, while Moscow has used them in massive attacks against civilian and energy infrastructure. But this is not an isolated phenomenon: from 2023 onwards, drones have played a central role in conflicts in the Middle East, from Hamas attacks on Israel to Houthi rebel operations in Yemen, to clashes in Lebanon with Hezbollah.

Even Europe has been involved: Poland has reported Russian incursions into its airspace, while in Denmark some airports have recorded intrusions that have created flight safety issues.

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Why They Are So Hard to Stop

The secret to the success of drones lies in their simplicity. Small, fast, and low-cost, often built with materials not easily detectable by radar, they manage to evade defense systems designed for larger threats, such as ballistic missiles or fighter jets.

Moreover, drones can operate in swarms, saturating enemy defenses with dozens or hundreds of units simultaneously. In these cases, it becomes almost impossible to shoot them all down without exhausting available resources.

The Cost Problem

While producing a commercial drone modified for military use can cost a few thousand euros, shooting it down may require an interceptor missile costing hundreds of thousands or even millions of euros. Poland's example is emblematic: in 2024, during an incursion of about twenty drones attributed to Russia, only four were shot down.

According to German sources, the Patriot system deployed in Rzeszów did not come into action because launching its missiles, costing between 250,000 and 3 million euros, would have been economically unsustainable compared to drones with a unit value of about 40,000 euros. The Bundeswehr then spoke of a “huge problem” in the cost-benefit ratio.

Europe and the “Drone Wall”

The difficulty in countering this threat has prompted the European Union to study innovative solutions. Thus was born the project of the so-called “drone wall”: an integrated system of sensors, radars, electronic jammers, and low-cost countermeasures, designed to protect NATO's eastern borders from Russian intrusions.

The European Commission has put resources on the table from the Safe instrument, with a ceiling of 150 billion euros, to accelerate the creation of this anti-UAV shield. According to the Commissioner for Defense and Space, Andrius Kubilius, the system could be completed within a year.

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Future Scenarios: The Swarm War

Military experts warn that the real risk is not individual drones, but coordinated attacks with swarms of hundreds of units. The most feared scenario involves waves of cheap UAVs launched to saturate defenses, followed by more sophisticated drones or even missiles. In this context, relying solely on high-cost interceptors becomes unsustainable.

For this reason, research is focusing on new solutions: high-energy lasers, microwave systems, “drone hunter” drones, and low-cost projectile weapons. The goal is to create a multi-layered defense capable of responding flexibly to different types of threats.

Conclusion

Drones represent the clearest demonstration of how warfare is changing. Economical, adaptable, and difficult to neutralize, they have shifted the balance between attack and defense, forcing governments and armed forces to rethink strategies and investments.

The challenge is not only about shooting down drones, but also about the ability to develop sustainable and effective systems capable of defending infrastructure and populations without straining military budgets. The war of the future will also be – and above all – a war between drones and countermeasures, where technology and costs will decide who has the advantage.

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