



*Picture Credits: British, Ukrainian & Indian militaries*

### ***The Rise of Low-Cost, High-Impact Weaponry: A Paradigm Shift in Warfare***

A silent yet revolutionary shift is transforming military strategy and battlefield doctrines worldwide. The proliferation of inexpensive yet highly accurate weapons is forcing a fundamental rethink in modern warfare—so much so that it feels as if the wheel is being reinvented.

This shift in focus from expensive, high-end weaponry to cost-effective, precision-based alternatives gained momentum with the Ukraine-Russia conflict. One of the most critical lessons military strategists have learned from this war is the importance of equipping infantry soldiers with affordable yet intelligent weaponry.

Beyond the devastating impact of low-cost combat drones on battle tanks, the Ukrainian infantry's weapon of choice has been the shoulder-launched Javelin missile. Manufactured by Raytheon Technologies in the United States, each Javelin missile costs approximately \$200,000. In contrast, a modern Russian T-90 tank—often destroyed by these missiles—costs around \$3 million. This stark cost disparity highlights the strategic advantage of outfitting infantry with low-cost, high-precision

weapons like the Javelin. The conflict has demonstrated that well-deployed infantry units, supported by spotter drones and shoulder-launched missiles, can effectively neutralize armoured assaults.

### ***The Game Changer: Spotter Drones***

One of the most significant innovations in this evolving warfare landscape is the widespread use of inexpensive spotter drones. Often equipped with cameras no more sophisticated than those found in smart phones, these drones provide a battlefield perspective that was previously unavailable. Their capabilities are further enhanced by artificial intelligence (AI), allowing them to operate autonomously with minimal human intervention. This autonomy reduces their reliance on radio signals, making traditional jamming techniques largely ineffective.

As the war continues into its fourth year, both Ukrainian and Russian forces have seized the opportunity to innovate, developing new weaponry and tactics. One of the most notable advancements by Ukraine is the Magura V5 sea drone—a small but formidable naval weapon.

### ***The Magura V5: Revolutionizing Naval Warfare***

The Magura V5 is a compact, battery-powered sea drone measuring 5.5 meters in length and weighing around 1,000 kilograms. It boasts an impressive range of 800 kilometres and can carry up to 200 kilograms of explosives, designed to detonate upon impact.

These drones are typically deployed in swarms of five or six against Russian warships. While Russian vessels can detect the incoming drones, their response time is often too short to neutralize the threat. Most Russian warships are designed to counter torpedoes and aerial threats, not small, fast-moving surface drones. Travelling at speeds of approximately 80 km/h and blending into the waves—especially at night—these drones are challenging to detect. Even if most are intercepted, the probability of at least one making contact and causing significant damage remains high.

Ukraine has already successfully sunk three Russian warships using Magura V5 drones. Each drone costs about \$270,000, meaning a full attack squad of five costs just over \$1 million—while the Russian ships they target are valued between \$350 million and \$400 million. The contrast is staggering: millions of dollars in losses, numerous casualties, and no Ukrainian lives at risk in these operations.

However, military experts worldwide are expressing concern over this new class of low-cost sea drones, fearing their potential use by terrorists and pirates, which could threaten global maritime security.

### ***The Future of Warfare: Directed Energy Weapons and Glide Bombs***

In response to these emerging threats, several countries are developing countermeasures. A recent BBC report highlighted the Dragon Fire—a laser-directed energy weapon being developed by the UK. Designed to shoot down drones and other aerial threats, Dragon Fire is a game-changer in terms of cost efficiency. While current surface-to-air missile systems cost around \$1.8 million per unit, a single Dragon Fire shot costs just \$13. The UK, the United States, China, France, India, Israel, and Turkey are all investing heavily in similar directed-energy weapons.

Another rapidly advancing technology is glide bombs—low-cost, highly accurate munitions launched from aerial platforms such as high-altitude jets and drones. Unlike traditional missiles, glide bombs do not have propulsion systems; they rely solely on gravity and aerodynamic guidance. Equipped with GPS and increasingly supported by AI, these bombs can strike targets with pinpoint accuracy.

Because glide bombs generate minimal heat and are relatively small, they are difficult to detect by radar. Furthermore, since they lack heat-producing engines, heat-seeking missiles—designed to track infrared signatures—are almost useless against them. The cost of these weapons ranges between \$20,000 and \$30,000, making them significantly cheaper than the high-cost missiles designed for similar missions.

### ***A New Era of Warfare***

***As these cost-effective yet highly destructive weapons become more advanced and widespread, their demand is expected to surge, further driving down costs. Their impact on battlefield strategies is undeniable—many experts are now questioning the viability of traditional tank warfare in the face of these emerging threats.***

***Navies, too, are being forced to reassess their reliance on large battleships and aircraft carriers, as they scramble to develop new defensive systems against these next-generation weapons. This technological evolution is also reshaping geopolitical priorities, particularly the sudden urgency for countries to secure vast reserves of rare earth metals—essential for manufacturing the advanced microchips at the heart of modern weaponry.***

***The world is witnessing a transformation in warfare unlike anything seen before. As nations adapt to these changes, the very nature of military power is being redefined. Whether this shift leads to greater security or new forms of conflict remains to be seen—but one thing is certain: the future of war will never be the same again.***