

***With kamikaze-style drones, the advantages are 'huge,' but so are the headaches, top Marines say***

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*US Marine Corps/Cpl. Jennessa Davey A US Marine launches a Switchblade drone during an exercise at Marine Corps Base Camp Pendleton in California, September 2, 2020.*

*Fighting in Ukraine and other recent conflicts have demonstrated the utility of loitering munitions. The US Marine Corps is pursuing those munitions in an effort to make its units lighter and more capable.*

*The Corps is also looking for ways to defend its units from those munitions.*

*"Kamikaze" drones like the ones being used in Ukraine offer troops on the ground major advantages, US Marine Corps leaders say, but the Corps is still figuring out how to defend Marines from these weapons.*

*The ability of these drones, known as loitering munitions, to linger over the battlefield gives Marines more flexibility, Marine Corps Commandant Gen. David Berger told an audience at the Modern Day Marine expo in Washington, DC.*

*Traditional mortars and artillery systems are limited to ballistic trajectories — "it fires, it descends, all predictable, all on a pre-positioned target," Berger said.*

*The advantage of a weapon that can be deployed "all the way down to the squad level," be launched by Marines from a mortar tube or from another vehicle, and then "loiter for 40, 45 minutes" before being directed to a target or finding the target itself "is huge," Berger said.*

*Those munitions can be launched before a target's "precise location" is known and the loiter time "gives you so much flexibility to engage either targets that are concealed or targets that are moving," Berger said.*



*US Marine Corps/Pfc. Sarah Pysher A US Marine prepares a Switchblade drone for launch during an exercise at Camp Lejeune in North Carolina, July 7, 2021.*

*Loitering munitions are a high-profile part of [US military aid to Ukraine](#). As of May 10, the US had provided nearly 1,000 of them: 700 Switchblade drones and 121 Phoenix Ghost drones.*

*The US has been sending Ukraine the Switchblade 300, a lighter model designed for anti-personnel missions. The US Defense Department is still [working to acquire](#) the Switchblade 600, a heavier-duty variant designed for armored targets.*

*Little is known about the Phoenix Ghost, but it is "akin" to the Switchblade, according to chief Pentagon spokesman John Kirby, who said in April that it can "be used to give you a sight picture of what it's seeing, of course, but its principal focus is attack."*

*Both drones have started arriving in Ukraine, and the Switchblade [is already seeing action](#).*

*Loitering munitions were put to similar use in the war between Azerbaijan and Armenia in 2020.*

*Swarms of such drones are "a low-cost, low-risk way" to help Ukraine mount effective attacks on Russian artillery and missile batteries, Benjamin Jensen, a senior fellow at the Center for Strategic and International Studies, [wrote in March](#).*



*Azerbaijan Defense Ministry via AP An Azerbaijani Defense Ministry photo shows Azeri forces destroying an Armenian anti-aircraft system, September 27, 2020.*

*US Marines have employed loitering munitions for some time. The Switchblade was used by Marines in Afghanistan [a decade ago](#) to attack small targets, such as insurgents placing bombs.*

*More recently, [the service has sought](#) loitering munitions that can be launched from vehicles or by individual Marines.*

*A recent update on the Corps' Force Design 2030 — which envisions a lighter, more mobile Corps that can deploy small units for dispersed operations — notes that distributing loitering munitions "within our small units provide[s] the close-combat lethality enhancements long-envisioned by infantry Marines."*

*Those weapons can have a demoralizing effect on opponents, Berger said. "From an infantry ground guy perspective, it's incredibly frustrating to know that there's a loitering munition up above your head. There's a psychological impact," Berger said Tuesday. "You don't know whether it's got a camera system or a lethal warhead on it, but it has*

*US and NATO countries are dispatching planes filled with military equipment for Ukraine – here are some of the weapons sent to hold back Russian tanks and aircraft The US and other NATO countries have sent thousands of weapons to Ukraine in recent weeks.*

*The shipments include anti-armor and anti-aircraft missiles which could be used against Russian tanks and helicopters .*

*The weapons are being used by Ukrainian fighters to push back Russian forces. As fighting in Ukraine enters its third week, [reports this week](#) revealed heavily-laden military cargo jets are pouring into an airfield across the border, stacked with weapons and military equipment to help Ukraine's forces hold back the advance of Russian troops.*

*Throughout the buildup to Russia's invasion of Ukraine, NATO countries, including the US, insisted they would not send troops to the region amid concern that the presence of their personnel on the ground would lead to a dangerous escalation of the conflict.*

*That stance has continued since Moscow ordered its troops into Ukraine on the morning of February 24. Instead, NATO nations and other countries are supplying Ukraine's defence forces - vastly outgunned and outnumbered by Russia's military - with weapons and equipment that Kyiv hopes will be able to help staunch Russia's advance.*

*Around 17,000 anti-armor weapons have been sent to Ukraine in the last number of weeks and are being pressed into use against Russian tanks and other hardware. As of March 8, Ukrainian fighters had destroyed over 1,000 armored personnel carriers, 303 tanks, 120 artillery systems and 80 helicopters, [The Kyiv Independent](#) claimed.*

*With heavy transport aircraft continuing to deliver consignments of equipment critical for Ukraine's defense, we take a look at some of the weapons being sent to Ukraine as it tries to hold back Russia's advances.*

*But the Corps is still grappling with how to defend its own troops from that threat. One way to do so is reducing Marines' "vulnerability to being detected" with camouflage, concealment, or deception, Maj. Gen. Benjamin Watson, commander of the Marine Corps War-fighting Laboratory's Futures Directorate, told reporters during the expo.*



*US Marine Corps/Cpl. Alina Thackray Marines mount a sensor on a Marine air defense integrated system vehicle somewhere in Southwest Asia, April 22, 2019. US*

*There are "two ways to go" if detected, Watson said: "How do you either counter the system directly ... or how do you keep the system from hitting you if it does in fact sense you."*

*The Corps is working "material and non-material solutions" to the drone threat as a part of a broader effort to improve its air- and missile-defenses, Maj. Gen. Eric Austin, director of the Corps' Capabilities Development Directorate, said at a press event.*

*"In some cases, it's cover and concealment. In other cases, it's material solutions," such as the vehicle-mounted Marine Air Defense Integrated System, Austin said.*

*The Corps and other service branches have put special emphasis on countering small unmanned aerial systems, which have [already been used against US troops](#) and for which current defenses [are not well suited](#).*

*"You don't want to be launching [Patriots against small UAS](#), right? That's cost-imposing the wrong way," Austin said.*

*The Corps is "pretty good" at detecting drones "for the most part," Austin told reporters Tuesday, "but the defeat mechanisms are challenging because there's kinetic and non-kinetic defeat mechanisms."*

*"There's really novel concepts coming out," Austin added, "but again, it's really complex when you think about setting the counter-small UAS capability in someone else's sovereign territory or in the continental US. There's a lot of policy implications here."*