Negative: Loitering Munitions – bad idea

By “Coach Vance” Trefethen

***Resolved: The United States federal government substantially reform the use of Artificial Intelligence technology***

Case Summary: The AFF plan has the US military buy and implement the use of “Loitering” drone-like weapons. They’re sort of a cross between a drone and a missile. They’re like a self-guided missile that can slow down and seek out its target rather than simply being fired from point A to land on point B.

If AFF wants to take “drone” evidence out of the round, use the “Definition” card to prove that LM are a type of UAV which is the definition of a drone.

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Negative: Loitering Munitions

DEFINITIONS

Drones are UAV’s (uninhabited aerial vehicle) and Loitering Munitions are a type of UAV.

Mathias Pilch, Dr. Jurgen Altmann and Dr. Dieter Suter 2021. (Pilch, M.Sc, is a physicist and researcher at Technische Universität Dortmund, Germany. Altmann Jürgen Altmann, PhD, is a physicist and peace researcher at Technische Universität Dortmund, Germany. Suter - PhD., is a physicist, researcher and professor at Technische Universität, Dortmund, Germany) Feb 2021 “Survey of the Status of Small Armed and Unarmed Uninhabited Aircraft” <https://eldorado.tu-dortmund.de/bitstream/2003/40064/1/Pilch_Altmann_Suter_2021_Survey_of_the_Status_of_Small_Armed_and_Unarmed_Uninhabited_Aircraft.pdf> (accessed 10 Feb 2022)

Similar work has been done by the Center for the Study of the Drone at Bard College in the USA. In 2019, it released the Drone Databook (Gettinger, 2019) (with an update in March 2020 (Gettinger, 2020)), evaluating the military drone capabilities of over 100 countries known to possess or operate uninhabited aircraft. It includes lists of military UAV infrastructures and technical specifications of over 170 UAVs of all sizes. Technical specifications of so-called loitering munitions, a special variant of UAVs equipped with a warhead and the ability to loiter in the air for an extended amount of time before attacking with self-destruction, were collected in (Gettinger & Michel, 2017).

TOPICALITY

1. No substantial reform

 Link: Status Quo – U.S. is already producing loitering munitions

[Kelsey Atherton](https://www.brookings.edu/author/kelsey-atherton/) 2021 (*military technology journalist*) [Loitering munitions preview the autonomous future of warfare](https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/) August 4, 2021  <https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/> (accessed 9 Feb 2022)

Nations with advanced drone programs also tend to have loitering munitions in their arsenals. [China](https://web.archive.org/web/20160420115829/http%3A/www.janes.com/article/59623/dsa-2016-china-details-ch-901-uav-and-loitering-munition), [Israel](https://www.iai.co.il/p/harop), [Iran](https://www.usatoday.com/story/news/world/2016/10/26/irans-navy-unveils-suicide-drone/92761598/), [Russia](https://www.armyrecognition.com/defense_news_april_2021_global_security_army_industry/russian_lancet_loitering_munitions_tested_in_syria.html), [Taiwan](https://web.archive.org/web/20190819130354/https%3A/www.janes.com/article/90511/tadte-2019-taiwan-s-ncsist-rolls-out-indigenous-anti-radiation-loitering-munition), [Turkey](https://www.stm.com.tr/en/kargu-autonomous-tactical-multi-rotor-attack-uav), and the [United States](https://www.avinc.com/tms/switchblade) all have domestic loitering munition production.

Link: US Army and Marines already use them

[Kelsey Atherton](https://www.brookings.edu/author/kelsey-atherton/) 2021 (*military technology journalist*) [Loitering munitions preview the autonomous future of warfare](https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/) August 4, 2021  <https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/> (accessed 9 Feb 2022)

Self-guided missiles expand the initial promise of loitering munitions and make air-delivered precision explosions more accessible to a range of military formations. Some loitering munitions, like the modern Harop, can fly for up to six hours, while others, like the Switchblade used by U.S. soldiers and Marines, can fly for about 15 minutes.

Link: Increased use of loitering munitions is already Status Quo US military policy

Joseph Trevithick 2021 (Fellow at GlobalSecurity.org, specializing in defense and security research and analysis ) 11 Oct 2021 “This Is Our First Look At The Marines' Loitering Munition-Armed Light Armored Vehicle” <https://www.thedrive.com/the-war-zone/42707/this-is-our-first-look-at-the-marines-loitering-munition-armed-light-armored-vehicle> (accessed 9 Feb 2022)

As already noted, UVision's Hero series is already making significant inroads across the U.S. military and is part of a future that is getting ever closer, in which American forces will increasingly be armed with various tiers of loitering munitions.

Violation: Endorsing the Status Quo is the opposite of substantial reform

This debate is essentially over after that piece of evidence. You can’t have a debate when the Affirmative gets up and says their plan is to do the Status Quo. They aren’t substantially reforming something by agreeing with it the way it is. Substantial reform of loitering munitions would have been banning them, not endorsing them.

Impact: Negative ballot

There’s effectively no Affirmative team in the round because no one is advocating substantial reform. If no one affirms the resolution, then no matter who wins, you should write Negative on the ballot.

INHERENCY

1. US Marines are deploying

Marines have already awarded a contract to produce loitering munitions and have plans to use them soon

Joseph Trevithick 2021 (Fellow at GlobalSecurity.org, specializing in defense and security research and analysis ) 11 Oct 2021 “This Is Our First Look At The Marines' Loitering Munition-Armed Light Armored Vehicle” <https://www.thedrive.com/the-war-zone/42707/this-is-our-first-look-at-the-marines-loitering-munition-armed-light-armored-vehicle> (accessed 9 Feb 2022)

“UVision was recently awarded a contract to supply the Hero-120 aerial loitering munition and multi-canister launchers to the United States Marine Corps for its 'Organic Precision Fire Mounted' (OPF-M) program,” Jim Truxel, CEO of UVision USA, UVision's American subsidiary, [said in a statement](https://uvisionuav.com/wp-content/uploads/2021/10/For-release-AUSA-2021-UVision-unveils-its-HERO-Multi-Canister-Launcher-MCL.pdf). “As part of this project, the MCLs will be installed on various platforms. We are proud that this latest development will be used in the field soon.”

2. US Army is getting it too

US Army is buying LM, and the other branches (Navy and Air Force) are studying it too

Joseph Trevithick 2021 (Fellow at GlobalSecurity.org, specializing in defense and security research and analysis ) 11 Oct 2021 “This Is Our First Look At The Marines' Loitering Munition-Armed Light Armored Vehicle” <https://www.thedrive.com/the-war-zone/42707/this-is-our-first-look-at-the-marines-loitering-munition-armed-light-armored-vehicle> (accessed 9 Feb 2022)

Previous [reports have indicated](https://www.thedrive.com/the-war-zone/41219/marines-pick-loitering-munition-to-arm-light-vehicles-and-drone-boats) that there is already another Hero-120 variant, the Hero-120SF, specifically designed for U.S. special operations forces. In March, Northrop Grumman announced [it was working with UVision](https://www.thedrive.com/the-war-zone/39696/northrop-grumman-reveals-sky-viper-chain-gun-and-new-suicide-drone-for-future-helicopters) on an air-launched hybrid Hero-120/Hero-400 design to [meet U.S. Army requirements](https://www.thedrive.com/the-war-zone/35726/the-army-has-unveiled-its-plan-for-swarms-of-electronic-warfare-enabled-air-launched-drones).  UVision is planning to conduct a demonstration of at least some portion of its product line at the Army's Dugway Proving Ground in Utah [sometime this month](https://breakingdefense.com/2021/07/israeli-loitering-munitions-to-get-us-test-in-october/), with representatives from the U.S. Air Force, Navy, Marine Corps, and Special Operations Command (SOCOM) also in attendance. The new MCL could certainly be of interest to the Army and Navy, as well as SOCOM, for ground-based and maritime applications. The Air Force might be interested in variants of Hero for air-launched use, too, having already demonstrated something of a similar capability in a test involving the launch of [an ALTIUS 600](https://www.thedrive.com/the-war-zone/40606/the-army-is-testing-arming-its-light-tactical-vehicles-with-drones) small drone [from the internal bay](https://www.thedrive.com/the-war-zone/40068/xq-58a-valkyrie-uses-weapons-bay-for-first-time-to-launch-smaller-drone) of a larger [XQ-58A Valkyrie](https://www.thedrive.com/the-war-zone/38168/stealthy-xq-58-drone-busts-the-networking-logjam-between-f-22-and-f-35) unmanned aircraft.

HARMS / SIGNIFICANCE

1. No threat from China

Neither China nor Russia are a threat to the US

Vijay Prashad 2018 (Indian historian, editor and journalist. He is a writing fellow and chief correspondent at [Globetrotter](https://independentmediainstitute.org/globetrotter/), a project of the Independent Media Institute) A paranoid America is greatly exaggerating Russian power 22 Feb 2018 <https://www.salon.com/2018/02/22/a-paranoid-america-is-greatly-exaggerating-russian-power_partner/> (accessed 5 June 2021)

But it remains a defensive statement. Neither China nor Russia is making a push to become the global powerhouse. They are merely seeking to rebalance a world order that has — since the end of the Cold War — tilted unhealthily towards the United States. So is Russia a threat? Is China a threat? The question really is, to whom? They are threats to any assertion of US dominance over the planet. But they are no threat to the United States as such. They are committed to a multi-polar planet: a sensible solution in our very unstable and dangerous times.

China isn’t interested in replacing US hegemony

World Economic Forum 2019 (international organization for public-private cooperation; non-profit foundation headquartered in Switzerland) Is a U.S. – China power transition inevitable? 15 Jan 2019 <https://www.weforum.org/agenda/2019/01/is-a-us-china-power-transition-inevitable/> (accessed 5 June 2021)

Perhaps most critically, though, China has evinced little desire to replace the United States in its present capacity. While increasingly global in scope, Beijing's foreign policy remains parochial in objectives, aimed more at sustaining its growth and cementing its centrality within the Asia-Pacific than at furnishing global public goods. The economist Charles Kindleberger [observed (TXT)](http://bev.berkeley.edu/fp/readings/WorldinDepression.txt) in 1973 that the Great Depression persisted “because the international economic system was rendered unstable by British inability and United States unwillingness to assume responsibility for stabilizing it.” We may witness a variant of this dynamic nine decades on, with neither the lone superpower nor its putative replacement able or willing to invest in the current order's modernization. Should that dynamic indeed prevail, China might continue to chip away at America's margin of pre-eminence without actually ascending to the commanding heights of geopolitics.

SOLVENCY

1. Easily fooled

Loitering munitions, like all visual AI systems, are easily fooled and could even backfire on their users

[Kelsey Atherton](https://www.brookings.edu/author/kelsey-atherton/) 2021 (*military technology journalist*) [Loitering munitions preview the autonomous future of warfare](https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/) August 4, 2021  <https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/> (accessed 9 Feb 2022)

 In 2020, [researchers at McAfee](https://www.mcafee.com/blogs/other-blogs/mcafee-labs/model-hacking-adas-to-pave-safer-roads-for-autonomous-vehicles/) published a demonstration showing that with a little tape applied to a 35 mph sign, a Tesla car in self-driving mode could be fooled into speeding up to 85 mph. Another example of [typographic attack](https://openai.com/blog/multimodal-neurons/), demonstrated by the OpenAI institute, fooled a computer vision system into seeing a fruit as an iPod by attaching a handwritten note with the word “iPod” on it to the fruit. (These are just a few of a large number of [adversarial techniques](https://papers.nips.cc/paper/2018/file/8562ae5e286544710b2e7ebe9858833b-Paper.pdf) used to fool computer vision systems.) The certainty of error in computer systems has been the subject of extensive work in the arms control community. One recent report from the [United Nations Institute for Disarmament Research](https://unidir.org/known-unknowns) found that in addition to error from data or coding, spoofing or other adversarial measures could misdirect an autonomous system. By feeding misleading data to a known loitering munition, an adversary could direct it to crash away from its target, even possibly returning deadly to where it was launched.

2. More study needed

We need to answer serious questions about loitering munitions before using them

[Kelsey Atherton](https://www.brookings.edu/author/kelsey-atherton/) 2021 (*military technology journalist*) [Loitering munitions preview the autonomous future of warfare](https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/) August 4, 2021  <https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/> (accessed 9 Feb 2022)

For policymakers, loitering munitions present urgent questions about how to govern the use of autonomous weaponry. Originally created to meet a particular military need, advancement in sensors, miniaturization, computer processing, and communication networks means that loitering munitions are at the cutting edge of autonomous weapons. It is tempting to assume that loitering munitions are a specialized weapon with a finite set of targets, but policymakers should avoid this simple narrative and instead ask hard questions about degrees of autonomy, how machines select targets, and in what way this weapon design can be coded to be compliant with the laws of war.

3. Won’t defeat tanks

Tanks can easily defend against LM

Nicholas Drummond 2021 (Defense industry consultant who advises industry, government, and armies on defense topics, most related to capability development and equipment acquisition. His first career was in the British Army, where he served as an infantry officer in the Welsh Guards ) 25 Apr 2021 “HAVE LOITERING MUNITIONS MADE TANKS OBSOLETE?” <https://uklandpower.com/2021/04/25/have-loitering-munitions-made-tanks-obsolete/> (accessed 10 Feb 2022) (brackets added)

The challenge is to protect armoured vehicles against loitering munitions. This is not as difficult as it may seem. Active protection systems (APS) fitted to main battle tanks can already reliably defeat ATGMs [anti-tank guided missiles]. The success Israel has achieved fitting the Trophy APS to its Merkava IV MBT has restored its battlefield primacy. Once again, it can move with near impunity. If you want to defeat an Israeli tank, you will likely need another tank that fires APFSDS ammunition, although even the effect of long rod penetrators has also been diminished by APS.

4. Won’t work without other reforms that aren’t in the AFF Plan

Buying the hardware by itself doesn’t solve. Must reform complex defense ecosystem at same time

Heiko Borchert, Torben Schütz, Joseph Verbovszky 2021 (Borchert - Borchert Consultiing & Research AG. Schutz - [Helmut Schmidt University / University of the Federal Armed Forces Hamburg](https://www.researchgate.net/institution/Helmut-Schmidt-University-University-of-the-Federal-Armed-Forces-Hamburg). Verbovszky – Johns Hopkins Univ. School of Advanced International Studies) May 2021 Beware the Hype- What Military Conflicts in Ukraine, Syria, Libya, and Nagorno-Karabakh (Don’t) Tell Us About the Future of War [https://www.researchgate.net/publication/351614718\_Beware\_the\_Hype\_What\_Military\_Conflicts\_in\_Ukraine\_Syria\_Libya\_and\_Nagorno-Karabakh\_Don't\_Tell\_Us\_About\_the\_Future\_of\_War](https://www.researchgate.net/publication/351614718_Beware_the_Hype_What_Military_Conflicts_in_Ukraine_Syria_Libya_and_Nagorno-Karabakh_Don%27t_Tell_Us_About_the_Future_of_War) /link/60a0ee9792851cfdf3388438/download (accessed 10 Feb 2022)

Based on our analysis this paper argues that, while offering important insights, all four conflicts are well anchored in current warfighting paradigms, hardly show unique ways of operating and employing assets and are thus not game changing. Rather the impression of “disruption” on the battlefield stems from an overemphasis of singular aspects that downplays the fact that armed forces need comprehensive proficiency in many different dimensions in order to provide added value with the use, for example, of UAV. UAV alone do not make the difference; they need to be integrated in a complex defense ecosystem to do so.

UAV strategy will end in disaster if we don’t first build a centralized mechanism to integrate all the AI data

Norine MacDonald and George Howell 2019 (Norine MacDonald Q.C. is a Visiting Distinguished Research Fellow, INSS, National Defense University and founder of RAIN Research. George Howell is a policy analyst and co-founder of RAIN Research, focusing on the nexus between artificial intelligence and strategic defense issues) Killing Me Softly Competition in Artificial Intelligence and Unmanned Aerial Vehicles (article is undated but references material published in Dec 2019) <https://ndupress.ndu.edu/Portals/68/Documents/prism/prism_8-3/prism_8-3_MacDonald-Howell_102-126.pdf> (accessed 8 Dec 2021)

“Multidomain warfare involves colossal amounts of heterogenous data streams that can be exploited only with the help of AI. While the ability to manage this data colossus in real time promises tremendous advantages, failure to draw meaning from that information could spell disaster.” UAVs are sensing organs that receive information from the external world. Currently, AI is moving forward on individual platforms; however, a centralized situational awareness AI core and a decentralized AI nervous system are required to synchronize and aggregate the overwhelming amount of sensor data necessary. A shift in thinking from a platform-centric approach to one creating the core architecture to syndicate such systems is essential: AI-supported weapons, platforms, and operating systems rely on custom-built software and hardware that is specifically designed for each separate system and purpose. There is currently no master mechanism to integrate the scores of AI-powered systems operating on multiple platforms. This AI core and nervous system priority must be part of both short-term and long-term planning, in recognition of its force multiplication potential. It also must be considered as a key element of any manned/unmanned strategy, to avoid being offset by a more AI-empowered and -integrated competitor. The AI core and AI nervous system must be recognized as a strategic necessity, be part of urgent short-term planning, inserted into all medium-term and long-term planning as the highest priority, and properly financed in budgetary allocations.

NEG wins because: Data management strategy should “receive much more attention” than the latest UAV technology

Heiko Borchert, Torben Schütz, Joseph Verbovszky 2021 (Borchert - Borchert Consultiing & Research AG. Schutz - [Helmut Schmidt University / University of the Federal Armed Forces Hamburg](https://www.researchgate.net/institution/Helmut-Schmidt-University-University-of-the-Federal-Armed-Forces-Hamburg). Verbovszky – Johns Hopkins Univ. School of Advanced International Studies) May 2021 Beware the Hype- What Military Conflicts in Ukraine, Syria, Libya, and Nagorno-Karabakh (Don’t) Tell Us About the Future of War [https://www.researchgate.net/publication/351614718\_Beware\_the\_Hype\_What\_Military\_Conflicts\_in\_Ukraine\_Syria\_Libya\_and\_Nagorno-Karabakh\_Don't\_Tell\_Us\_About\_the\_Future\_of\_War](https://www.researchgate.net/publication/351614718_Beware_the_Hype_What_Military_Conflicts_in_Ukraine_Syria_Libya_and_Nagorno-Karabakh_Don%27t_Tell_Us_About_the_Future_of_War) /link/60a0ee9792851cfdf3388438/download (accessed 9 Dec 2021)

Deeply integrating UAV and EW into the force structure is likely to go hand in hand with changes in the command and control procedures and structure in order to provide for seamless interaction. Deep integration is likely to prompt questions with regard to defining the “ownership” of new assets and delineating the areas of responsibilities among the services involved. **[END QUOTE**] These issues are about to become even more important when considering the fact that organizational integration and data-related integration can be separated from each other. One of the major challenges stemming from the ubiquitous use of sensors across all domains is data management. Currently, there is a preference for cloud-based solutions at all levels, but the benefits of clouds might be deceiving given assumptions about the prevalence of heavy adversarial “electromagnetic fire” in future conflicts. In addition, edge-based technologies might enable stronger horizontal interaction in the future that could collide with vertical organizations currently dominating. [**THEY CONTINUE LATER IN THE CONTEXT QUOTE**:] Organizational adaptation and agility should thus receive much more attention as indicators of possible force transformations underway than the current focus on the latest technology.

DISADVANTAGES

BIG LINK TO DISADS 1, 2, and 3

Loitering munitions are autonomous weapons (or soon will be)

[Kelsey Atherton](https://www.brookings.edu/author/kelsey-atherton/) 2021 (*military technology journalist*) [Loitering munitions preview the autonomous future of warfare](https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/) August 4, 2021  <https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/> (accessed 9 Feb 2022)

For decades, loitering missiles have been on the forefront of autonomous lethality. Historically, loitering munitions were used to target things like radars but are increasingly being used to attack humans. And as they make this transition in targeting capability, loitering munitions represent a bridge between today’s precision-guided weapons that rely on greater levels of human control and our future of autonomous weapons with increasingly little human intervention.

1. Civilians mistakenly targeted

Loitering munitions have significant risk of mistakenly attacking civilians

[Kelsey Atherton](https://www.brookings.edu/author/kelsey-atherton/) 2021 (*military technology journalist*) [Loitering munitions preview the autonomous future of warfare](https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/) August 4, 2021  <https://www.brookings.edu/techstream/loitering-munitions-preview-the-autonomous-future-of-warfare/> (accessed 9 Feb 2022)

While loitering munitions can persist in the sky only as long as their limited flight time, the matter of target discrimination is crucial, especially as these machines are designed for targets other than missile batteries and radar. Autonomy in targeting systems, especially in targeting-and-firing systems, comes with significant risk. In much the same way that a pressure-sensitive landmine cannot distinguish between an armed soldier and a farmer, an algorithm that converts sensor data into attack triggers is at risk of harming the wrong target.

 A.I. cannot avoid civilian casualties

Michael T. Klare 2019 (professor emeritus of peace and world security studies at Hampshire College and senior visiting fellow at the Arms Control Association) Autonomous Weapons Systems and the Laws of War, March 2019https://www.armscontrol.org/act/2019-03/features/autonomous-weapons-systems-laws-war (accessed 1 June 2021)

These questions arise with particular significance regarding two key aspects of international humanitarian law, the requirement for distinction and proportionality in the use of force against hostile groups interspersed with civilian communities. Distinction requires warring parties to discriminate between military and civilian objects and personnel during the course of combat and spare the latter from harm to the greatest extent possible. Proportionality requires militaries to apply no more force than needed to achieve the intended objective, while sparing civilian personnel and property from unnecessary collateral damage. These principles pose a particular challenge to fully autonomous weapons systems because they require a capacity to make fine distinctions in the heat of battle. It may be relatively easy in a large tank-on-tank battle, for example, to distinguish military from civilian vehicles; but in many recent conflicts, enemy combatants have armed ordinary pickup trucks and covered them with a tarpaulins, making them almost indistinguishable from civilian vehicles. Perhaps a hardened veteran could spot the difference, but an intelligent robot? Unlikely. Similarly, how does one gauge proportionality when attempting to attack enemy snipers firing from civilian-occupied tenement buildings? For robots, this could prove an insurmountable challenge.

2. Civilians intentionally targeted

Autonomous weapons using characteristics of the target create a mindset that leads to increased targeting of civilians by dehumanizing the enemy

Ray Acheson 2019 (Director of Reaching Critical Will, the disarmament program of the Women’s International League for Peace and Freedom) March 2019 “Campaign to Stop Killer Robots” (accessed 8 Dec 2021) https://www.stopkillerrobots.org/wp-content/uploads/2019/04/Campaigners-Kit-FINAL\_EN.pdf

An autonomous weapon, using algorithms and software to determine and engage targets, also goes even further in “emasculating” or dehumanizing the “enemy” than any previous weapon technology. A weapon operating without meaningful human control will rely on characteristics of objects to sense a target, including the objects’ infrared emissions, shape, or biometric information. This reduces people to objects, undermining human dignity. It also, as scholar Lorraine Bayard de Volo points out, “invites and legitimates a masculine response.” Affected populations, viewing the perpetrators of drone strikes as a predatory male, are incentivized to adopt the masculine protector role in their communities, to fight back against the aggressor.
AUTONOMOUS GENDER-BASED VIOLENCE AND REINFORCING VIOLENT MASCULINITIES
This in turn reinforces conceptions and practices of violent masculinities, and can lead to gender based violence against men. In conflict, civilian men are often targeted—or counted in casualty recordings—as militants only because they are men of a certain age.

3. Escalation of conflicts

Autonomous weapons using AI increase the risk of conflict escalation over Status Quo

Prof. Cai Cuihong 2019 (professor of international relations with the Center for American Studies at Fudan University, China.) The shaping of strategic stability by artificial intelligence, Oct 2019 THE IMPACT OF ARTIFICIAL INTELLIGENCE ON STRATEGIC STABILITY AND NUCLEAR RISK Volume II East Asian Perspectives (accessed 9 Dec 2021) https://www.sipri.org/sites/default/files/2019-10/the\_impact\_of\_artificial\_intelligence\_on\_strategic\_stability\_and\_nuclear\_risk\_volume\_ii.pdf

Third, the intention behind the use of AI may be misunderstood, increasing the risk of conflict escalation. With the development of technology and the evolution of the global situation, national actors may increasingly use AI weapons. But how well they send unambiguous signals to demonstrate their intent is a challenge when performing these tasks. Instead, these activities may be interpreted as a serious provocation to security interests, leading to a more stringent response from the target country. This could result in unnecessary conflict escalation. Moreover, autonomous weapons are highly dependent on perception and exchange of information about the external environment. As a result, the likelihood of accidents and human-induced malicious interventions increases. For example, if a drone is subjected to a hack or other form of electromagnetic interference while performing a reconnaissance mission and this results in abnormal behaviour such as a crash, an impact or an explosion, the target may misjudge or make an escalatory response.

4. War with China

Link: Loitering munitions will be used to create drone swarms

Dan Gettinger and Arthur Holland Michel 2017 (Center for the Study of the Drone at Bard College; an interdisciplinary research institution that examines the novel and complex opportunities and challenges presented by unmanned systems technologies in both the military and civilian sphere) “Loitering Munitions in focus” <https://dronecenter.bard.edu/files/2017/02/CSD-Loitering-Munitions.pdf> (accessed 9 Feb 2022)

Several U.S. defense programs are developing technologies for large swarms of drones equipped with a range of different payloads that can carry out a variety of missions, including lethal strikes. Some of these programs employ loitering munitions, like the AeroVironment Switchblade or Raytheon Coyote. In the future, drones similar to the loitering munitions featured in this guide could come to dominate the airspace far more than any single drone does today.

Link: Marine Corps plans to use loitering munitions in swarm attacks against China

David Larter 2020 (naval warfare reporter for Defense News) 9 Dec 2020 “The US Marine Corps wants grunts packing deadly swarming drones” <https://www.defensenews.com/naval/2020/12/09/the-us-marine-corps-wants-grunts-packing-deadly-swarming-drones/> (accessed 9 Feb 2022)

The [U.S. Marine Corps](https://www.defensenews.com/naval/2020/06/01/in-his-fight-to-change-the-corps-americas-top-marine-takes-friendly-fire/) is looking to equip its infantry units with a man-portable, [swarming](https://www.defensenews.com/unmanned/2020/04/20/darpa-to-foster-urban-drone-swarm-tech-with-nine-new-contracts/)loitering munition that experts say is part of its shift toward [countering China](https://www.defensenews.com/naval/2020/02/12/heres-the-us-marine-corps-plan-for-sinking-chinese-ships-with-drone-missile-launchers/)with a light and deadly seaborne infantry force. **[END QUOTE]** The so-called “Organic [Precision Fires](https://www.defensenews.com/digital-show-dailies/ausa/2020/10/14/are-the-us-army-and-us-marine-corps-competing-for-missions-in-the-pacific/) - Infantry Light” program is seeking ground-launched drones that can be deployed with no more than two people, have a range of up to 20 kilometers, loiter for 90 minutes, swarm, be jam resistant and be able to take out enemy troops and materiel, according to a November request for information. [**HE GOES ON LATER IN THE CONTEXT QUOTE**:] The[Marine Corps](https://www.defensenews.com/naval/2020/03/05/to-combat-the-china-threat-us-marine-corps-declares-ship-killing-missile-systems-its-top-priority/) has been trying to reshape itself as a primarily maritime force that can distribute forces over a massive battlefield such as the South China Sea, operating inside the Chinese weapon engagement zone that may be too dangerous for many military assets to operate inside until certain key objectives can be seized or neutralized. This has led the force to look at ways to pack as much capability into small, disbursed groups of Marines, something the portable drone swarms could support.

Impact: Nuclear attack on the United States by Russia or China in response to a swarm attack

Michael T. Klare 2019 (professor emeritus of peace and world security studies at Hampshire College and senior visiting fellow at the Arms Control Association) Autonomous Weapons Systems and the Laws of War, March 2019https://www.armscontrol.org/act/2019-03/features/autonomous-weapons-systems-laws-war

The Pentagon envisions a time when large numbers of drone ships and aircraft are released to search for enemy missile-launching submarines and other critical assets, including mobile ballistic missile launchers. At present, U.S. adversaries rely on those missile systems to serve as an invulnerable second-strike deterrent to a U.S. disarming first strike. Should Russia or China ever perceive that swarming U.S. drones threaten the survival of their second-strike systems, those countries could feel pressured to launch their missiles when such swarms are detected, lest they lose their missiles to a feared U.S. first strike.

5. Hype will backfire

Link & Brink: Defense Dept. is already over-hyped about AI. Further emphasis will create despair when it doesn’t meet the hyped expectations

[MARC LOSITO](https://warontherocks.com/author/marc-losito/) & [JOHN ANDERSON](https://warontherocks.com/author/john-anderson/) 2021. (Losito is a first-year Master of Public Policy candidate at Duke University and an active-duty U.S. Army Warrant Officer; holds a degree from Norwich University and has served in the military and Special Operations Forces for 20 years. Anderson is a U.S. Army Reserve military officer focused on applying AI and machine learning to mission critical problems.  He has served in the U.S. Army for nearly 20 years; holds degrees from Univ of North Carolina at Chapel Hill and Columbia Business School ) 10 May 2021 THE DEPARTMENT OF DEFENSE’S LOOMING AI WINTER <https://warontherocks.com/2021/05/the-department-of-defenses-looming-ai-winter/> (accessed 22 June 2021)

The Department of Defense is on a full-tilt sugar high about the potential for AI to secure America’s competitive edge over potential adversaries. AI does hold exciting possibilities. But an artificial AI winter looms for the department, potentially restraining it from joining the rest of the world in the embrace of an AI spring. The department’s [frenzy for AI](http://www.foreignaffairs.com/articles/united-states/2021-04-06/perils-overhyping-artificial-intelligence) is distracting it from underlying issues preventing operationalization of AI at scale. When these efforts fail to meet expectations, the sugar rush will collapse into despair.

Link: Hype let-down will lead to future de-prioritizing of AI weapons systems

[MARC LOSITO](https://warontherocks.com/author/marc-losito/) & [JOHN ANDERSON](https://warontherocks.com/author/john-anderson/) 2021. (Losito is a first-year Master of Public Policy candidate at Duke University and an active-duty U.S. Army Warrant Officer; holds a degree from Norwich University and has served in the military and Special Operations Forces for 20 years. Anderson is a U.S. Army Reserve military officer focused on applying AI and machine learning to mission critical problems.  He has served in the U.S. Army for nearly 20 years; holds degrees from Univ of North Carolina at Chapel Hill and Columbia Business School ) 10 May 2021 THE DEPARTMENT OF DEFENSE’S LOOMING AI WINTER <https://warontherocks.com/2021/05/the-department-of-defenses-looming-ai-winter/> (accessed 22 June 2021)

The resultant feedback loop will deprioritize and defund AI as a critical weapon system. This is known as an “AI winter,” and the Department of Defense has been here twice before. If it happens again, it won’t be because the technology wasn’t ready, but because the Department of Defense doesn’t know enough about AI, has allowed a bureaucracy to grow up between the people who will use AI and those developing it for them, and is trying to tack “AI-ready” components onto legacy systems on the cheap.

Impact: Turn AFF harms

AFF claims AI is critical to military superiority, so anything that sets it back makes the AFF harms worse.