THE
PLOUGHSHARES MONITOR

VOLUME 44 | ISSUE 3

AUTUMN 2023

CLIMATE & SECURITY
Environmental impact of explosive weapons

EMERGING TECH
- The dilemma of dual-use AI
- Perils of Military AI
- One-way attack drones challenge norms

OUTER SPACE
A feminist spotlight

ARMS TRADE
An analysis of Canada's annual report of exports

Climate, peace, and security

Ploughshares meets the challenge of our time with a new venture

"and they shall beat their swords into ploughshares, and spears into pruning hooks; nation shall not lift up sword against nation; neither shall they learn war any more." Isaiah 2:4

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The Ploughshares Monitor
Volume 44 | Issue 3

The Ploughshares Monitor is the quarterly journal of Project Ploughshares, the peace research institute of The Canadian Council of Churches. Ploughshares works with churches, nongovernmental organizations, and governments, in Canada and abroad, to advance policies and actions that prevent war and armed violence and build peace. Project Ploughshares is affiliated with the Kindred Credit Union Centre for Peace Advancement, Conrad Grebel University College, University of Waterloo.

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Project Ploughshares gratefully acknowledges the ongoing financial support of the many individuals, national churches and church agencies, local congregations, religious orders, and organizations across Canada that ensure that the work of Project Ploughshares continues.

We are particularly grateful to The Simons Foundation Canada in Vancouver for its generous support.

All donors of $50 or more receive a complimentary subscription to *The Ploughshares Monitor*. Annual subscription rates for libraries and institutions are: $35 in Canada, $45 (U.S.) in the United States, $50 (U.S.) internationally. Single copies are $5 plus shipping.

Publications Mail Registration No. 40065122.
ISSN 1499-321X.

The Ploughshares Monitor is indexed in the Canadian Periodical Index.

Printed at INNOVATIVE, Waterloo, Ontario.
Printed with vegetable inks on paper with recycled content.

Funded by the Government of Canada

From the Director's Desk

Ploughshares meets the challenge of our time with a new venture

Written by Cesar Jaramillo

We live in a time of unprecedented climate disruption. At Project Ploughshares, we recognize the need to engage with this multifaceted threat, which has profound implications for our mission to build sustainable peace. Thus, I am pleased to announce the genesis of a new initiative that we hope will become a permanent program area focused on the intersection of Climate, Peace, and Security.

A broad understanding of human security

This decision has been taken after extensive consultations. One constant source of advice and expertise has been Kenneth Epps, a former program officer with Ploughshares. The last issue of *The Ploughshares Monitor* featured an interview with Ken that explored some elements of his journey from monitoring conventional arms to tackling climate degradation. His insistence that climate breakdown is not simply an environmental concern but an existential threat requiring human counteraction resonates deeply with the mission of Project Ploughshares. Along with nuclear weapons, climate breakdown represents a direct threat to human civilization itself.

For most of our history, Project Ploughshares has championed a broad and holistic understanding of human security that goes far beyond the resolution or avoidance of armed conflict. True and lasting peace must be based on the fulfilment of basic human needs and the nurturing of resilient societies.

While armed conflicts and both new and old technologies threaten peace and demand our persistent attention, we are coming to a fuller understanding of the ways in which they intersect with – and interact with – the climate emergency to threaten the foundations of a peaceful existence on Earth. The interconnectedness of climate change and global security demands further research and analysis.

Climate affects conflict

The world is witnessing with increasing frequency weather-related catastrophes. Wildfires, floods, extreme temperatures, and windstorms are altering the dynamics of our world and increasing human insecurity.

Climate change exacerbates resource scarcity, which can ignite conflicts among competing communities and nations.

Climate breakdown can trigger forced migration. Displaced populations then strain the often-limited resources of their host communities. In a new environment, traditional livelihoods and cultural identities come under increased threat. These ripple effects can amplify pre-existing tensions and contribute to conflict.

Climate disruptions intensify economic vulnerabilities, particularly in industries and endeavours that are climate-sensitive. All these factors can strain government and the rule of law, resulting in failed or fragile states.

The impact of climate change on military operations is already being felt. We witness its role in exacerbating tensions and fostering extremism.

And, while the potential exists to develop a cooperative response to shared environmental concerns, there is the risk that such adaptation measures will also foster further conflict, as competing interests vie for access to limited adaptation resources.

… and conflict affects climate

The emissions produced by military operations constitute a substantial contribution to global greenhouse gas emissions.

Conventional warfare destroys entire ecosystems.

Furthermore, we must confront the potential environmental devastation resulting from an eventual nuclear detonation or exchange. The immediate and long-term ecological consequences of such an event are horrifying.

Proceeding with caution

The global security community is now acknowledging the complex intersections between climate and security. Various defence organizations are now openly viewing climate change as a security challenge and setting emission reduction targets.

However, as the world gathers resources to tackle this complex challenge, it must guard against framing climate change solely as a security issue.

Such a definition could work against necessary collective action. Overemphasis on military solutions could divert resources from sustainable programs and undermine possible peaceful resolutions.

What is needed is a holistic approach that balances security concerns with environmental imperatives and opportunities for peacebuilding. Climate action and the pursuit of peace must be aligned.

A strategy for Project Ploughshares

In establishing the Climate, Peace, and Security program, Project Ploughshares envisions a strategic sequence of actions.

First and foremost, we intend to engage motivated interns in a comprehensive literature review, delving into the intricate linkages between climate change, peace, and security. This process will serve as a foundational step in consolidating existing knowledge and shaping our program's focus.

Simultaneously, we are committed to forging connections with likeminded organizations and experts, in Canada and beyond, that are already actively addressing related issues. Collaborative efforts will not only enrich our understanding but also foster a network of collective insights and approaches.

Without question, financial support is critical in transforming our vision into a tangible reality. Thus, our next step involves seeking funding from those who share our commitment to promoting global peace through climate resilience. This support will not only sustain the program's activities but also contribute to its growth and evolution. We have made an excellent start in this regard, as one of our supporters has already pledged seed funding. We extend our grateful thanks for that initial support and all that we trust will follow.

With the goal of establishing a dedicated and permanent staff position exclusively focused on Climate, Peace, and Security, we will work diligently to secure the necessary resources. This new position will underscore our commitment to weave climate considerations into the fabric of peace-and-security discourse, so that critical connections are understood and evaluated appropriately.

Project Ploughshares intends to draw inspiration and insight from a diversity of voices, each contributing unique insights into the challenges and opportunities before us. As we navigate these uncharted waters, we invite you, our donors, supporters, and partners, to travel with us. Together, even in the face of unprecedented challenges, we can reshape the conversation around climate, peace, and security – and make steady progress to a more secure world.

What Canadian and international law demand

On June 14, journalists Daniel Boguslaw and Akela Lacy published "House Democrats refuse to say whether they support cluster bomb shipments to Ukraine" on the site of The Intercept, an investigative nonprofit news organization.

Cluster bombs or munitions "fracture before impact, sending out a cascade of small bombs that can impact well beyond their intended target." These weapons are banned under the Convention on Cluster Munitions, an international treaty that Canada has joined, but that the United States, Russia, and Ukraine have not.

The article explored the opposition of "international security advocates," who viewed such shipments as "the disintegration of humanitarian law and the potential for the U.S. to further erode standing norms of civilian protection." Ploughshares Executive Director **Cesar Jaramillo** was quoted as saying that cluster munitions "cause indiscriminate harm to civilians and prolong the impacts of war by leaving unexploded munitions."

Cesar contended that Ukraine's use of cluster munitions "will serve to prolong the fighting and to create the conditions for further humanitarian suffering. Not to mention that in the background there is the specter of nuclear escalation, another category of indiscriminate weapons."

On July 14, *The Globe and Mail* published "Canada won't say if it's in talks to lift ban on arms sales to Turkey" by Steven Chase. Cesar was again a featured source.

The ban was imposed after Türkiye illegally diverted arms purchased from Canada to an ally. As Cesar explained, Canada was responding to Türkiye's "consistent failure to act as a trusted recipient of Canadian military exports. Time and again it has illegally diverted Canadian military goods to conflict zones, deliberately and consistently seeking to conceal its conduct from Ottawa."

He went on to say: "Applicable domestic and international export controls do not allow for exemptions based on political considerations or quid pro quo arrangements."

This topic was again covered on July 26, when *The Globe and Mail* published a feature co-authored by Cesar and Ploughshares Researcher **Kelsey Gallagher**. "Canada risks letting Turkey off the hook, by prioritizing politics over arms control" explores concessions Canada might be willing to make with Türkiye in exchange for its support of Sweden's bid to join NATO.

Cesar and Kelsey argue, yet again, that Canada should maintain its ban on weapons sales to Türkiye, which "has displayed a worrying pattern of diverting Canadian military equipment to unauthorized end-users and end-uses, with little regard for international law or the protection of civilians."

A new global focus

The intricate relationship between climate, peace, and security requires a holistic and collaborative approach involving governments, nongovernment and international organizations, and local communities.

Canada, with its vast expanse, must play a pivotal role. The Canadian government's response should begin with a fundamental shift in priorities. Resources should be reallocated from shortsighted combat programs to initiatives that address the multidimensional security impact of climate change. Such an operation will include redirecting military spending to missions that contribute to peacekeeping, conflict resolution, and climate adaptation efforts.

As the world pivots toward a sustainable future, acknowledging and mitigating the environmental impact of military activities become essential. Canada's defence sector can become a leader in adopting sustainable practices.

We must all become stewards of peace. At Project Ploughshares, we continue to do our part to meet the challenge of this time. □

Cesar Jaramillo is the Executive Director of Project Ploughshares. He can be reached at cjaramillo@ploughshares.ca.

Limiting the environmental impact of explosive weapons

Written by Morgan Fox

The International Committee of the Red Cross (ICRC) defines explosive weapons as "munitions activated by the detonation of a high-explosive substance, creating primarily a blast and fragmentation effects, and their delivery systems." These weapons kill or maim many civilians, destroy infrastructure, and damage the natural environment. In all these ways, they threaten human and global security.

Civilians unduly harmed

Explosive weapons in populated areas (EWIPA) disproportionately harm civilians. Data assembled by Action on Armed Violence indicates that 90 per cent of those killed and injured by EWIPA are civilians. And this source of harm can linger – sometimes for decades – because some explosive weapons fail to detonate on initial impact. Unexploded ordnance (UXO) can detonate long after a conflict has ended, killing and maiming a new generation.

Harm to the built and natural environments

The damage that explosive weapons cause to human infrastructure threatens the health and wellbeing of people (and other creatures) residing in the conflict zone – and sometimes far beyond it. As we see in Ukraine, Iraq, Yemen, and Syria, the use of explosive weapons cuts off access to clean water, compromises sewage systems and other critical infrastructure, releases hazardous materials and fumes into the environment, hinders the provision of medical treatment, and contributes to the outbreak of communicable diseases.

Explosive weapons also harm and destroy the natural environment, causing wildfires and floods. This damage is amplified by the effects of climate change – extremely high temperatures and violent storms.

Mitigating the environmental impact

Recent diplomatic, legal, and political actions indicate a growing interest in mitigating the environmental consequences of explosive weapons, particularly in populated areas.

In late 2020, for example, the ICRC released a new version of its Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflict – the first update since the guidelines were released in 1994. The 2020 version sets out "rules and recommendations relating to the protection of the natural environment under international humanitarian law (IHL)." IHL includes, for example, the Rome Statute of 1998, which labels causing widespread, long-term, and severe damage to the natural environment a war crime.

In 2022, the United Nations (UN) Interna-

tional Legal Commission released a set of draft principles concerning the protection of the environment in relation to armed conflicts; these principles were then recommended to the UN's General Assembly. The UN Security Council has also recently discussed the conflict-environment nexus, although some UNSC members continue to question any direct connection between climate change and armed conflict.

Existing arms control agreements already include some obligations relating to environmental protections. For example, the Anti-Personnel Mine Ban Convention and the Convention on Cluster Munitions both require that requests to delay explosive ordnance clearance include information on the environmental impacts of delays.

A political declaration on EWIPA, minus environmental protections

The Political Declaration on Strengthening the Protection of Civilians from the Humanitarian Consequences arising from the use of Explosive Weapons in Populated Areas was formally adopted by 83 states in November 2022. Declared a "milestone declaration" by the ICRC, it obliged signatories "to help avoid civilian harm, including by restricting or refraining as appropriate from the use of explosive weapons in populated areas. when their use may be expected to cause harm to civilians or civilian objects" (Article 3.4). If universally adopted, the declaration could significantly alleviate civilian suffering and increase respect for IHL.

However, the final version of the declaration mentions the environment only once, in the preamble: "The environment can also be impacted by the use of explosive weapons, through the contamination of air, soil, water, and other resources." While these effects have obvious consequences for humans, the declaration says nothing about mitigating them.

Even with this significant omission, this declaration should be viewed positively, as the first in a series of actions that aim to limit the harm, including environmental harm, caused by explosive weapons. It should be seen as a floor rather than a ceiling, with signatories encouraged to implement measures that go beyond what is required.

Keeping the environment in the picture

Armed conflict has devastating effects on the environment, killing flora and fauna, and damaging forests and fields and wetlands. But such losses are seldom given due consideration, either during an armed conflict or after hostilities end. We must recognize that the natural environment's wellbeing, health, and survival are inseparable from our own.

Explosive weapons have caused the environment profound harm; recovering from that damage will require large amounts of financial and political support, preferably as part of a larger effort to combat climate change. Thus, future peace talks must devote attention to environmental protection and remediation.

This approach should apply to Ukraine because the Russian invasion has profoundly harmed both the natural and built environments. For example, the destruction of the Nova Kakhovka dam has caused widespread flooding; shelling has triggered wildfires; and the deployment of a great number of gas-powered armoured vehicles has dramatically increased the volume of greenhouse gases released into the atmosphere.

Whenever they take place, peace talks to resolve the conflict in Ukraine should attend to the need to reconstruct the natural as well as the built environments. The end goal should be a green and sustainable peace. □

Morgan Fox has an Honours BA in politics, philosophy, and economics from Queen's University in Kingston, Ontario. She was a Ploughshares Peace Research intern in summer 2023.

An academic note

At the end of June, "Contested spaces and everyday peace politics in Northern Ireland," co-authored by Seán Brennan and Ploughshares Senior Researcher **Branka Marijan**, was published online in the academic journal *Treatises and Documents: Journal of Ethnic Studies.*

Hidden harms: A feminist spotlight on space security

Written by Jessica West and Abishane Suthakaran

As the 2024 launch date of the NASA-led Artemis mission to return humans to the Moon draws near, the face of space activities is changing. Artemis astronauts include the first Canadian (Jeremy Hansen), the first woman (Christina Koch), and the first person of colour (Victor Glover) to be selected to reach the lunar surface. This diversity is intentional, emblematic of a new global push to make outer space more inclusive.

Such a step in representation feels both monumental and minuscule.

Astronauts are the most tangible link between humanity and outer space. They are legally assigned the role of "envoys" of humankind in the Outer Space Treaty. However, Western space exploration also continues European/American colonial patterns of exploitation and exclusion of women and of Black and Indigenous people and other people of colour. The first American woman astronaut, Sally Ride, and the first Black astronaut, Guy Bluford, flew on separate missions in 1983, more than two decades after Alan Shepard's historic ride. Mae Jemison became the first Black American woman to go into space only in 1992. The United Nations reports that, as of 2021, only 11 per cent of astronauts had been women.

At Project Ploughshares, we have similar feelings about the work we have undertaken to employ a feminist lens to uncover the hidden human harms and inequalities linked to security in outer space. Although a modest effort, our work highlights the need to change both the face – and the underlying values and concepts – of space security.

Expanding the boundaries of Women, Peace, and Security

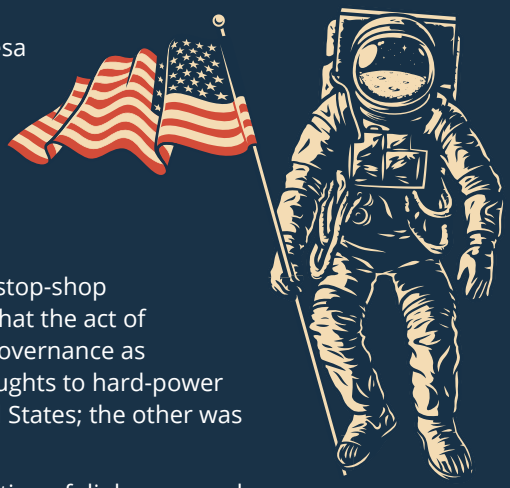
Three decades after landmark United Nations (UN) Security Council Resolution 1325 (Women, Peace, and Security [WPS]) urged member states to increase participation by women and incorporate gender perspectives into peace and security efforts, discussions of outer space security have yet to include a WPS perspective.

The WPS lens has focused on traditional armed conflict, with little attention given to non-traditional security environments and contexts below the threshold of armed conflict, including outer space. And the human implications of strategic competition and hardware in outer space have been ignored.

It's time to refocus.

At the recently concluded UN Open-Ended Working Group on Reducing Space Threats, Canada was one of a few states to raise the issue of gender, calling for the full and equal participation of women and an assessment of how space threats can impact people differently based on social identities such as gender. Canada is committed to the integration of Gender-based Analysis Plus in all defence activities. This process, "used to assess how different women, men and gender diverse people may experience policies, programs

Jessica on U.S. space diplomacy



On May 30, Breaking Defense Space and Air Force reporter Theresa Hitchens published "US 'Space Diplomacy' strategy seeks to counter 'competitors' soft-power plays." The article introduced the State Department's "first-of-its-kind strategy for using diplomatic tools to maintain U.S. leadership in space, including efforts to woo emerging space players away from 'strategic competitors.'"

Hitchens goes on to say, "While the new strategy is largely a one-stop-shop articulation of current U.S. space policies, several experts noted that the act of publishing the document does signal a focus on diplomacy and governance as important national strategies in their own right, and not afterthoughts to hard-power considerations." Two of the quoted experts were from the United States; the other was Ploughshares Senior Researcher **Jessica West**.

Jessica approved of the strategy's focus on diplomacy: "This elevation of diplomacy and governance is essential and should be applauded; we need more of this." But she wasn't naïve about the policy goals: "Despite the focus on diplomacy and governance and references to 'humanity', it's not a warm and fuzzy policy. It is firmly rooted in national interest — which is fair. It also clearly gives voice to an emerging view of space governance as a mode of strategic competition over the future direction of the rules in outer space. This competition is viewed as fact. But it's also concerning. We face a risk of fragmenting governance in outer space. Avoiding this requires leadership to listen and engage with competitors and those who think differently."

and initiatives," provides Canada with a base from which to contribute to this effort.

Project Ploughshares supported this global effort by hosting a series of virtual consultations in July intended to consider alternative approaches and perspectives to peace, security, and disarmament by focusing on feminism and the human connections to space security.

What we heard

1 A focus on women and gender alone is insufficient.

Although our work was originally prompted by the question "How is the future of conflict gendered?" and the WPS framework, this focus is too limiting. As Kimberlé Crenshaw explains, "all inequality is not created equal." Systems of power rooted in identity, including gender, race, class, disability, and sexuality, are compounding and intertwined with hierarchies of economics and geography. A truly feminist analysis rooted in intersectionality is needed to explore the multiple, overlapping factors of advantage and disadvantage that shape human activities, experiences, and vulnerabilities in outer space.

The value of such a perspective was evident in discussions about safe and secure access to the Internet, which in parts of the world is dominated by private space services. These services are a growing target of warfighting in space. While such violence puts all users at risk, some people are more at risk; safe access and use are far more precarious for people who experience overlapping and compounding inequalities rooted in gender, race, and sexual orientation.

Our discussion underscored that gender experiences are not uniform and feminist perspectives vary around the world. Consultation participants from developing countries emphasized that entrenched gender roles are reinforced by job scarcity and uneven economic development, which restrict participation by women – especially women of colour and ethnic minorities. Rather than being an equalizer, novel space technology

can serve to exacerbate existing social and economic inequalities.

2 Participation is a necessary first step.

Questions about how the harms and benefits of space security are distributed and experienced are rarely raised. One reason: those who face disproportionate or different harms are rarely in the room. Thus, participation is a key tenet of the WPS agenda. Participation by women, people of colour, and those from the Global South in the diplomacy of space security has historically been abysmal.

But it's not enough to diversify the faces in the room. Even in integrated spaces, patterns of entrenched gender, racial, and geopolitical dominance are difficult to overcome. Participants emphasized that existing governance structures are patriarchal, hierarchal, and archaic, limiting the ability to include voices often intentionally excluded in the first place. Such exclusion is fortified by unequal resources, discussions in technospeak, and informal constraints on what counts as "expertise."

Focusing on "inclusion" and "equitable" processes can reinforce unfair power structures. For example, current efforts to expand participation by commercial and civil society organizations can, if care is not taken, strengthen already strong Western voices. Consultation participants stated clearly that modes of participation must be expanded to change the conversation. Recruitment, resources, and mentorship are essential; spaces must be made more accessible by and welcoming to diverse voices.

Finally, greater access to, and more diverse participation in, space governance must be used to attain and sustain a deeper level of inclusion in the creation of ideas, values, and structures that shape space governance.

3 Language, concepts, and ideas must change.

Expanded participation allows different people to bring in their distinct histories, experiences, and knowledge, which can help to advance long stagnant diplomatic discussions and invigorate practical approaches to space governance.

There is ample research demonstrating the gendered and colonial thinking that prevails in language about space activities, from "manned" spaceflight to notions of space as a "frontier" or "wild west." Such language is harmful because it perpetuates exclusion, marginalization, and bias. Under these conditions, the knowledge and contributions of women and Indigenous peoples and First Nations, for example, are erased or buried.

Prevailing approaches to security in outer space that emerged during the Cold War are rooted in values of national security, strategic competition, and stability, enabling a buildup of military capabilities while overlooking the interests and needs of the less powerful. And a belief in manifest destiny has sustained unsustainable environmental practices.

A more peaceful and inclusive future in outer space requires new concepts and ideas for space governance. In addition to insights gleaned from intersectional, decolonial, and humanitarian perspectives – which have inspired renewed momentum for disarmament elsewhere – participants noted the value of practices rooted in ecology, cooperation, and an ethics of care. One example was the Australian Indigenous concept "care of country," which includes past, present, and future generations.

4 A human view of space security is complicated.

Our original research question is also limited by its narrow conceptualization of conflict and harm. Discussions unearthed myriad ways in which space is implicated in the unequal distribution of benefits and harms. People view outer space as a valuable resource that permits essential services such as Internet access, supports civilian infrastructure, spurs new knowledge, and even satisfies more niche needs such as combating gender-based violence with space data and communication. Among the countless uses and users of space, we must ask which are deemed critical and prioritized.

A secure use of space by some can be harmful to others. Participants pointed to the mining of resources and appropriation of land to power

space programs, the ability to use satellite imagery and geo-location to inflict violence, the growing privatization of data, and environmental impacts on the atmosphere and night sky.

5 Leading is listening.

The series of consultations revealed a strong desire to participate in the conversation. A project that we had envisioned as a few people talking about gender and space quickly expanded into a series of vibrant global online gatherings. One participant noted that in her 30 years of practising space law, she had never before attended a workshop focused on feminism. A small step but still monumental.

Participants also expressed anger and frustration about the barriers that still prevent large swaths of the world's population from participating and influencing space activities, governance, and decision-making. They were exasperated with the persistent relegation of questions about gender, race, class, ability, and sexuality to the margins of these processes when such questions are key to how we pursue and conduct ourselves in outer space.

There is no "gendered" perspective on space security because experiences of gender are impacted by race, sexuality, class, history, geography, ability, and other identities. Intersectionality requires not only acknowledging these differences but creating the space to learn from them. Leadership requires listening. □

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Jessica West is a Senior Researcher at Project Ploughshares. She can be reached at jwest@ploughshares.ca.

Space Café Canada

Bringing space down to Earth

On June 2, Ploughshares Senior Researcher **Jessica West** spoke with James Slifierz, co-founder and CEO of SkyWatch, a Waterloo-based Canadian space company that makes commercial Earth observation (EO) data accessible to clients, most of whom want to monitor something on Earth, like a field or natural disaster. SkyWatch works with operators of satellites and ground stations to build information pipelines, accessing data from 95 per cent of commercial EO satellites. Extracting meaningful information requires efficient data management, advanced algorithms, and robust processing capabilities.

The current lack of industry standardization, the difficulty customers have in accessing data, and the high cost of processing and analyzing data make data unaffordable or unavailable for many potential clients at present. Slifierz explained how artificial intelligence (AI) could be a game-changer, by automating tasks that were previously done manually.

Slifierz believes that EO data, which supports much of the infrastructure on Earth, will soon be as much a part of our daily lives as GPS. But EO has the potential to do more, if clients and the public trust that the images have not been manipulated. He identified robust verification processes, compliance with regulations, and cybersecurity measures as crucial elements in safeguarding the data's integrity and security.

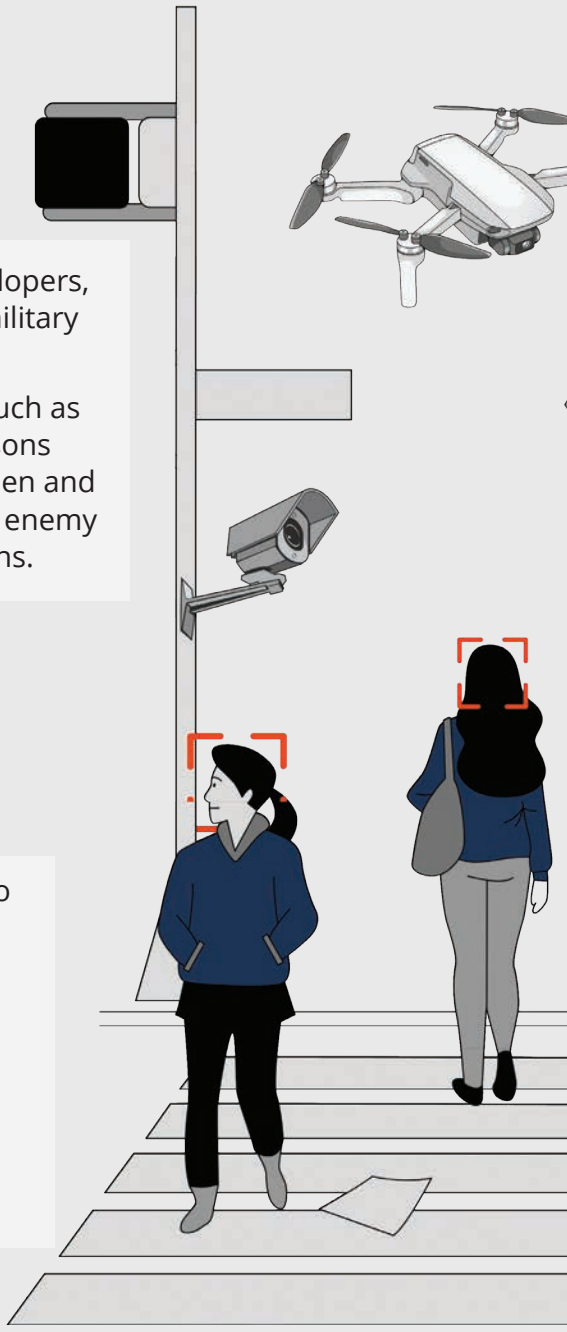
SkyWatch invests in space to make Earth a better place. Mr. Slifierz noted that we wouldn't understand the climate crisis without the information gathered by space technology.

The complete interview can be found on the SpaceWatch.Global website.

4 PERILS OF MILITARY AI

Artificial intelligence (AI) amplifies systemic we that could escalate armed conflict.

As a leader in AI development, Canada must address these risks in global discussions on responsible military use of artificial intelligenc



1 AI is biased.

AI reflects the biases of the data it is fed, the biases of its developers, and the original reason for its creation. Much AI used by the military first had a civilian function.

These biases have been noticed in emerging AI technologies such as facial recognition, which often fails to correctly categorize persons with darker complexions or distinguish among images of women and gender minorities. Biases can lead to mistaking a friend for an enemy or vulnerable civilians for opposition forces in combat situations.

2 AI-assisted weapons dehumanize.

AI-assisted weapons reduce humans to data points – objects to be observed or targeted.

This datafication eliminates a critical human element from warfare. According to the Campaign to Stop Killer Robots, "machines lack inherently human characteristics like compassion and understanding of human rights and dignity, which are necessary to make complex ethical choices and apply the laws of war." Properly trained military personnel are necessary to make appropriate moral and ethical decisions.

Written and illustrated by Laine McCrory

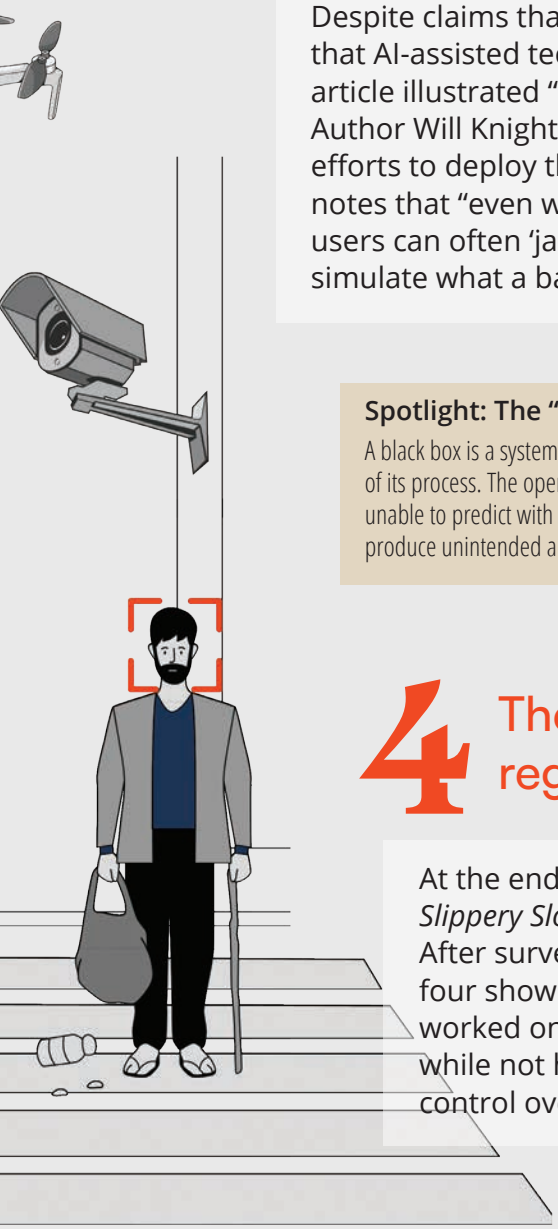
eaknesses and can produce unintended consequences

e.

3 AI-assisted technology is unpredictable and unreliable.

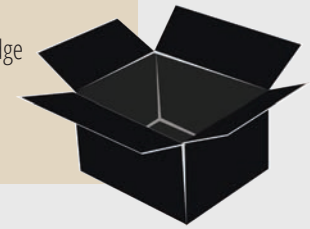
No matter how much work is put into programming for all possible outcomes, the unexpected can happen when AI-assisted weapons are deployed.

Despite claims that AI-assisted weapons will be more accurate, there is evidence that AI-assisted technologies are easily highjacked or hacked. A recent *Wired* article illustrated "the propensity for the cleverest AI chatbots to go off the rails." Author Will Knight saw this as a "fundamental weakness that will complicate efforts to deploy the most advanced AI." As well, security expert Paul Scharre notes that "even when AI models correctly refuse to perform a harmful task, users can often 'jailbreak' the model through simple tricks, such as asking it to simulate what a bad actor would do."



Spotlight: The "Blackbox" of AI

A black box is a system that can be understood in terms of inputs and outputs, without any knowledge of its process. The operator or owner of the system will not know why it does what it does and is unable to predict with any certainty the final outcomes of the system's use. This unpredictability can produce unintended and dire consequences in battle.



4 The creation of AI-assisted tech is poorly regulated.

At the end of 2019, PAX published a report by Frank Slijper entitled *Slippery Slope: The arms industry and increasingly autonomous weapons*. After surveying 50 global arms producers, it was determined that only four showed "best practices." The 30 that were of "high concern" all worked on "technologies most relevant to lethal autonomous weapons while not having clear policies on how they ensure meaningful human control over such weapons."

Laine McCrory is an MA candidate in the joint program in Communication and Culture at Toronto Metropolitan University and York University. She is the Project Ploughshares Multimedia Assistant.

The dilemma of dual-use AI

Written by Branka Marijan and Rebekah Pullen

Six hours is all it took for an artificial intelligence (AI) model to suggest 40,000 new possible biochemical weapons. The sheer chaos and humanitarian devastation that would be caused by the realization of any of these ideas, which include incredibly toxic nerve agents, are unfathomable.

Co-opting civilian tech for war

The AI model that offered these blueprints is used by scientists to discover new drugs. This demonstration of a benign technology's potential for destruction underscores both the inherent dual-use nature of AI and the ease with which beneficent tools can be perverted.

Both militaries and the arms control community are familiar with dual-use technologies. It seems likely that militaries have been adapting civilian technologies for combat for as long as militaries have existed. Previous arms control efforts, such as the Chemical Weapons Convention, have had to contend with misuses of common household items. Recent conflicts, particularly the war in Ukraine, have shown how a variety of productive technologies have been used on battlefields with, it seems, minimal alteration.

The incorporation of AI technologies into conflict contexts blurs the line between civilian and military use even more. Current military operations can employ a range of AI-assisted tech, from facial recognition technology that identifies possible enemies and war dead to sensors and navigation aids that are used in selecting targets. In Ukraine, computer vision technology that allows AI to interpret information from images or video is being used to scan surveillance drone and video footage. In this way Ukraine can track Russian troop movements and identify suspected war criminals.

It seems certain that AI technologies developed initially for civilian purposes will continue to be adapted in future conflicts.

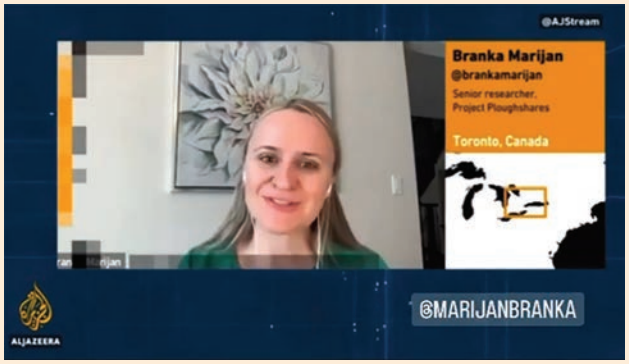
The quandary of civilian-led advances

Large investments in civilian AI technologies and building pressure to release updated models mean that most of the interesting AI advancements are happening in the commercial sector. Technological spinoffs of the previous generation, like GPS, happened in reverse, with commercial goods developing from defence innovations.

Experts don't agree on the extent to which civilian applications of technologies, including AI, can be easily and effectively adapted for defence purposes but it is certainly the case that the challenge facing the arms control community grows as AI advances. As a system enabler that can be easily applied to civilian or military tech, AI poses unique challenges for arms control.

For example, it can be difficult to capture the extent of dual-use applications of individual technologies. And private-sector developers are not considering possible military uses when they create a design, making it harder for arms control experts

Alerting the world to autonomous weapons



In late spring and early summer, Ploughshares Senior Researcher **Branka Marijan** travelled the globe – virtually.

Branka was interviewed by Kostas Mavraganis for HuffPost Greece. The original questions and answers were conducted in English and then translated into Greek. The article's English title is "AI wars: How AI weapons are changing war, what are the risks." In this piece Branka explains the varying uses of AI by the military and which are most troubling. She also evaluates "flash wars" – as yet hypothetical collisions between automated systems. Branka sees them as a "cause for concern" because "mistakes or unintended consequences" in the use of AI systems "could, in a tense geopolitical situation, escalate into conflict." She also evaluated AI as a "power multiplier" for smaller countries. Her final message was one common to her analysis of AI in military systems: states must ensure "substantial human control" over weapons.

Branka also provided a video clip that was featured on an episode of Al Jazeera's program *The Stream* entitled "Is an AI arms race underway?" In the clip (slightly edited here), Branka sums up several key ideas relating to the reliability of AI, human control, and accountability:

> There's a lot of discussion about AI and bias or that AI hallucinates – simply makes things up. And those concerns are really acute in the complex and dynamic environment that a war zone is. After all, we're talking about decisions over human lives, potentially. And so, I think what's really key to understand is the role of AI in transforming human decision-making and particularly the use of AI in weapons systems. There is an ongoing discussion at the UN [United Nations] on autonomous weapons systems, which really has focused on issues of human control, so ensuring that humans are the ones that are ultimately making the decisions to select and engage targets. And also accountability, so that we can hold someone accountable for the decisions that are made by an AI system.

And Branka conducted a webinar hosted by the AI Centre of Brunei University London in the United Kingdom. Asked to provide an overview, she brought together in a coherent package the ideas mentioned above, along with others that can be found in her *Monitor* articles and Ploughshares reports over the past several years. The question period focused on the recent AI Act of the European Parliament and new law that the Red Cross feels is necessary to respond to such transformative technology. Answers revealed a general reluctance by states to constrain in any way the ability of their military forces to maximize AI functionality. But although the webinar acknowledged that tech companies exert a lot of power, the message viewers were left with was that it is still possible to regulate how humans use tech in warfare.

to anticipate potential misuses of the technology. Quite simply, while civilian developers know that their products might have dual uses, they are not designing with dual uses in mind.

As a system enabler, AI tech is hard to contain. As well, as Haruki Ueno notes in the 2023 publication "Artificial intelligence as dual-use technology," "since AI is a form of software, outcomes can easily leak or get stolen through the Internet."

The active engagement of defence research agencies in researching potential defence uses of civilian technologies adds more complexity to arms control endeavours. Perhaps China's military-civil fusion strategy has received the most attention for its expansive view of the integration of the broader economy and defence sector but China is not the only country fixating on civilian technologies for defence. The United States first unveiled a dual-use strategy in 1995; the Pentagon's defence research arm, the Defense Advanced Research Projects Agency, currently explores the adoption of civilian technologies.

Indeed, most militaries devote research and development resources to adapting civilian technologies. Ueno describes the potential transfer of developments or know-how from this research to

Studying technology governance

On August 18, Ploughshares Senior Researchers **Branka Marijan** and **Jessica West** were on an expert panel at the inaugural Balsillie School of International Affairs Technology Governance Summer School.

Jessica outlined the centrality of space in daily life and highlighted concerns with the securitization of space governance. Branka focused on the adaptation of commercial artificial intelligence (AI) for military applications. Both expressed concern over dual-use technologies, which have both civilian and military users and purposes. Interestingly, commercial space actors actively court militaries, while the picture is more complicated in the AI sector.

Along with other panelists, Branka and Jessica urged Canada to do more to regulate existing and emerging technologies. Prompted by student questions, both favoured diplomacy to navigate the changing global order with its various visions for the governance of technologies.

"terrorist or hostile countries" as AI's dual-use dilemma. But this dilemma extends beyond defence research and development. Arms control efforts must address a nimble technology with multiple attack vectors, without being overly restrictive or limiting legitimate uses of the technology.

The use of adapted civilian AI technologies in a combat zone could expose the military operators to unexpected vulnerabilities, including cyber attacks. No one can predict how technology that was not designed to be used in such a dynamic and safety-critical context will perform; the chance of causing greater harm than anticipated creates operator distrust of the technology. Distrust can only grow with research findings that demonstrate that the most advanced current models are impossible to secure against malicious attacks. These weaknesses, which adversaries will seek to exploit, could undermine any advantage the technology offered.

Weaponizing AI not easy

In the end, we can take comfort in the realization that developing AI weapons, particularly more sophisticated weapons, is still not simple – for militaries or non-state groups. As well, arms control mechanisms already in place – such as those for chemical warfare agents – would limit or prevent some weapons development, including the biochemical weapons mentioned earlier.

The ability to run or develop advanced systems requires access to specific hardware that is increasingly difficult to access, particularly by non-state groups. For example, there are new export controls on sophisticated chip technology, which is needed to run more advanced models. And much of the developing tech is controlled by a few companies that have the expertise to protect their products.

Still, it is inevitable that legitimate and malicious actors will find ways to access AI-assisted technologies, which they will then weaponize in some form. Ensuring that a regulatory framework emerges to guide these developments and prevent misuse or abuse will be critical.

Recognizing and limiting the damage

Arms control mechanisms must be modernized to address all these challenges.

The 2020 UNIDIR report *Modernizing Arms Control: Exploring responses to the use of AI in military decision-making* considers some ways to modernize arms control so that the dual-use nature of AI is addressed. The authors focus on export controls but see the opportunity to update other national policies that relate to the responsible uses of technology by militaries. More international discussion is needed to better understand what the regulatory toolkit needs to contain and to develop global norms that will prevent the most egregious misuses of technology.

It is in the interest of all states to develop a better understanding of potential dual-use applications, to control access to certain technologies, to put in place safeguards and regulations to prevent misuse, and to anticipate the unintended consequences of premature integration of commercial AI technologies into conflict contexts. □

Rebekah Pullen, a PhD candidate at McMaster University, is a Ploughshares Research Assistant, supported by a Mobilizing Insights in Defence and Security (MINDS) grant of the Canadian Department of National Defence.

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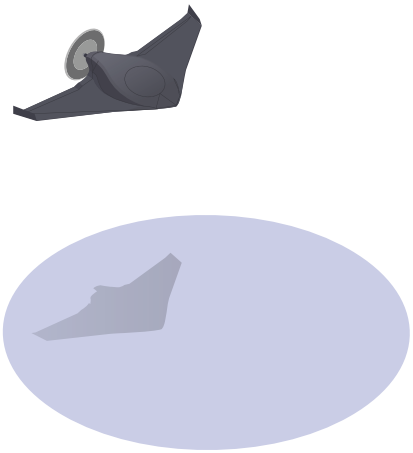
How one-way attack drones challenge security norms in Ukraine – and beyond



Written by Dmytro Sochnyev

In 1849, citizens of Venice, under siege by a formidable Austrian army, observed an extraordinary sight: the launch of hundreds of uncrewed balloons laden with incendiary bombs and timed fuses. Although most balloons were blown off target by strong winds – some even back toward their launch sites – the Austrians had unknowingly experimented with an ancestor of the one-way attack (OWA) drone, an increasingly common weapon in contemporary arsenals.

Precision for pennies

Today's OWA drones, also known as kamikaze or suicide drones, are uncrewed, expendable aircraft. Varying greatly in size, sophistication, and operation, they still share an objective: the remote and/or autonomous delivery of an integrated munition to a selected target. Dan Gettinger observed in a recent study, *One-way attack drones: Loitering munitions of the past and present*, that there are more than 180 OWA drone designs in development or active use.

An OWA drone is not a wonder weapon. It is outclassed in speed, range, precision, and payload by conventional ground- and air-launched missiles. Conventional artillery still delivers larger munitions in greater quantity for more effective fire support. Fixed-wing aircraft, both crewed and uncrewed, are reusable and offer better reconnaissance and coordination capabilities. Why then did now-retired United States Marine Corps General Kenneth F. McKenzie Jr. claim in 2021 that drones presented a "new and complex threat" to U.S. air superiority?

The threat lies in the economics. OWA drones provide reasonable strike capabilities for a fraction of the cost of conventional weapons systems and without the need for a robust industrial capacity, large defence budget, and extensive technical expertise. During the recent civil war in Yemen, Houthi rebels were able to sustain a strike campaign against targets in Saudi Arabia and other Gulf states by using Iranian-supplied Shahed-136 and modified Qasef and Sammad drones. Joël Postma notes in "Drones over Nagorno-Karabakh: A glimpse of the future of war?" that Azerbaijan effectively employed Israeli-supplied Harop drones against Armenian logistics, convoys, and older air defence systems during the 2020 Nagorno-Karabakh war.

Now consumer drones are being modified for combat, allowing even poorly funded and trained groups to strike targets at range. Between 2015 and 2017, the Islamic State used converted quadcopters to carry out between 60 and 100 attacks a month on coalition forces in Syria. In 2018, opposition forces allegedly added a basic explosive and household parts to an off-the-shelf drone in an attempt to assassinate Venezuelan President Nicolas Maduro.

From basements to battlefields

This democratization of drone procurement has reached new levels in the war in Ukraine. Burgeoning drone production lines, made up of volunteers operating in basements and warehouses, and sup-

ported by financial donations from home and abroad, help to supply frontline combat units on both sides. Ulrike Franke, senior fellow at the European Council on Foreign Relations, estimates that the Ukrainian armed forces alone are now expending more than 10,000 drones per month.

Channels on Telegram, a popular messaging app, publicly report on solutions to tactical obstacles, experiments with input materials, and mass production breakthroughs. One Russian volunteer assembly group claims that a drone with a three-kilogram payload and a range of between seven and nine kilometres should cost no more than $442 (U.S.). A pro-Ukrainian volunteer group recently uploaded a compilation of strikes on Russian armour conducted by six first-person view (FPV) attack drones. The group claimed that these FPV attack drones, which allow the pilot to see what the drone sees, cost $2,100 (U.S.) to prepare. What pilots of such drones see is often disseminated online in an unprecedented supply of wartime propaganda.

OWA drones thereby produce a "shot-exchange" deficit for defenders. FPV attack drones have been observed disabling and even destroying much more expensive Russian and Ukrainian armour and equipment. Targeted vehicle crews have sought to hide from the drones by employing a bizarre assortment of improvised cages and nets, with varying degrees of success. Ukrainian air defences have been forced to deploy expensive and scarce surface-to-air missiles against Shahed drones to prevent damage to critical infrastructure. Older cannon-based systems, like the German Gepard, are more effective, but their shorter range requires a density of coverage that is not always possible. What we are seeing is that, in at least some asymmetrical circumstances, the more poorly equipped adversary can overcome qualitative disadvantages in equipment and economy through the sheer quantity of cheap and expendable OWA drones.

Russian and Ukrainian militaries are now racing to develop electronic countermeasures to eliminate the drone advantage. Electronic warfare (EW) systems, such as special EW rifles that are directed at drones to jam their communications, have proven effective at a tactical level against commercial drones that don't have protected electronics. In many instances, EW has succeeded in intercepting pilot information or hijacking drones.

For example, many Chinese DJI drones, the most common commercial drones in Ukraine, have specialized receivers that collect position and movement information on most DJI drones and their pilots. This AeroScope system was initially designed by DJI for use by law enforcement. As the DJI site states, "The data obtained allows AeroScope users to monitor drone activity in their airspace and work with law enforcement to identify violators." However, in the current conflict in Ukraine, Ukrainian officials have complained that this feature has been used by Russians to reveal Ukrainian drone operators and target their positions.

Could the worst be yet to come?

The most terrifying chapter of OWA drone development could still lie ahead. If EW system proliferation prevents pilots from directly navigating guided OWA drones, militaries could employ drones with artificial intelligence (AI) to deliver the munition without human guidance. Several militaries are already experimenting with "drone swarms" that collaborate to determine, select, and engage targets autonomously.

Indeed, pilot operators, which already represent a bottleneck in OWA drone deployment, could be eliminated altogether. An Australian AI company has already claimed to have developed AI that is "better than humans at identifying targets." If arms manufacturers can produce enough autonomous drones, a future battlefield could be saturated with intelligent munitions that methodically eliminate targets. Human soldiers and civilians could be at the mercy of the targeting algorithms – a terrifying prospect far beyond what the Austrians envisioned in 1849. □

Dmytro Sochnyev has a BA in International Relations from the University of Toronto and is currently working on a Master's in International Affairs at the Hertie School in Berlin. He was a Ploughshares Peace Research intern in summer 2023.

Canada's arms exports in 2022

Written by Kelsey Gallagher

Canada publishes an annual report on its exports of conventional weapons. The most recent report, *2022 Exports of Military Goods*, reveals that Canada continues to export high volumes of arms around the world, with more than half reported transfers going to an authoritarian state.

Overview

According to the *2022 Exports of Military Goods* report, last year, Canada exported military goods valued at $2.122-billion to destinations other than the United States. This total was the lowest since 2017 and 37 per cent lower than the total for 2021 but remains significantly higher than the total for any year in the period 1978-2017.

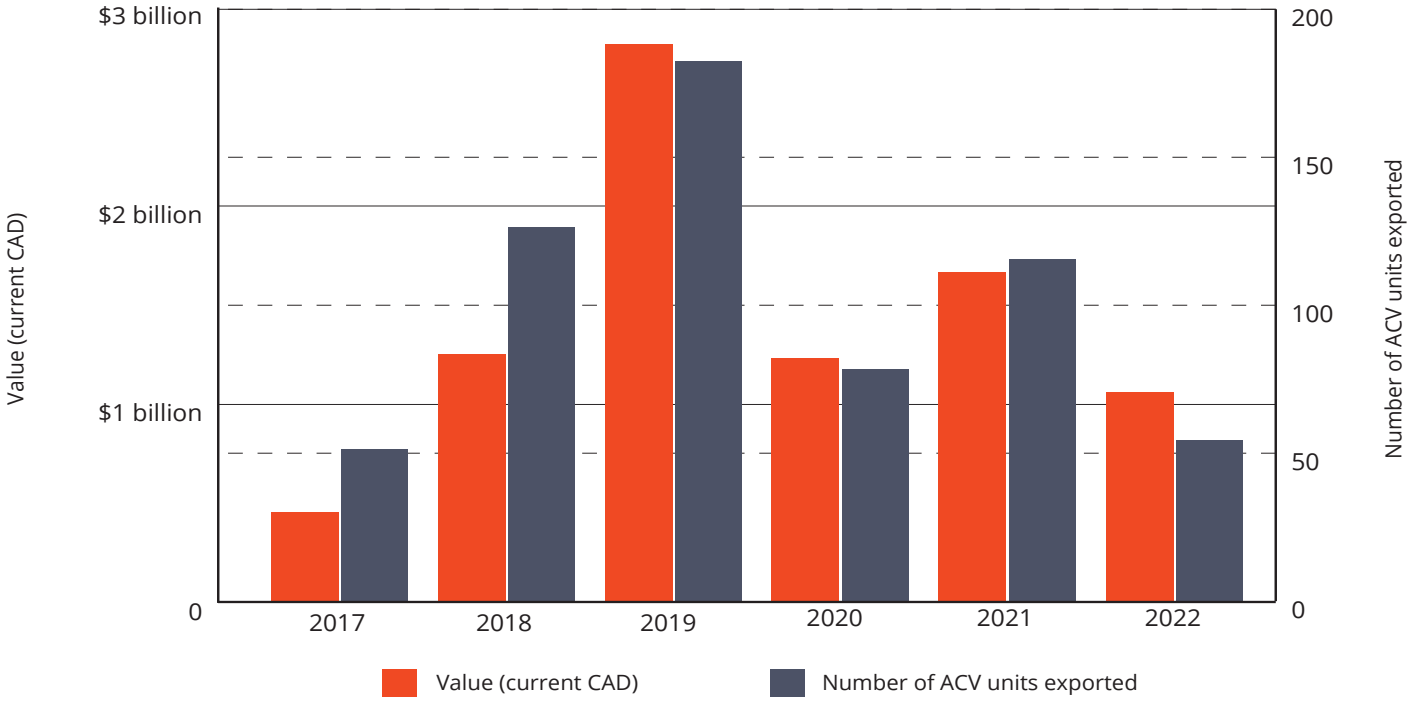
This reduced figure was largely the product of fewer transfers to Saudi Arabia of light armoured vehicles (LAVs), which remained the major item sent to that country. The value of exports to Saudi Arabia still reached $1.151-billion – approximately 54 per cent of all reported non-U.S. exports.

From a different report we can get additional perspectives on exports to Saudi Arabia. Canada also reports its arms exports to the United Nations Register of Conventional Arms (UNROCA), providing data on units of materiel shipped to foreign states. According to the UNROCA report, Canada supplied 55 Armoured Combat Vehicles (or "ACVs," the category of goods applicable to LAVs) to Saudi Arabia in 2022, down from the 116 supplied in 2021 and 2019's high point of 183. Information sent to UNROCA has been included in previous *Exports of Military Goods* reports but for unknown reasons was not included in the 2022 edition. Fortunately, this information is still accessible through UNROCA.

It is also not clear why weapons exports to Saudi Arabia continue to be permitted by Canadian officials and at such high volumes. Arming Saudi Arabia's authoritarian government poses demonstrable human rights risks, as exemplified during the Saudi-led intervention in the war in Yemen. Supplying LAVs worth billions of dollars to Saudi Arabia constitutes a breach of Canada's obligations under the Arms Trade Treaty.

Despite all the information provided in the 2022 report, many details of Canada's arms transfers remain off the public record. Principally, the report failed to include most of Canada's arms exports to the United States. As well, most shipments of military aid to Ukraine were not integrated into the total reported value.

Canada's Armoured Combat Vehicle (ACV) Exports to Saudi Arabia (2017-2022)



Source: Global Affairs Canada/United Nations Register of Conventional Arms

Arms exports to the United States

While the United States is generally considered Canada's largest military customer, the Canadian government does not provide substantial data on these exports.

Until 2017, the Government of Canada provided almost no information on military exports to its southern neighbour. Since then, it has reported the value of a small subset of Group 2 arms exports, including small arms and light weapons, ammunition, bombs, torpedoes, rockets, missiles, and associated components. The reported value for 2022 was $57.4-million.

However, Project Ploughshares conservatively estimates the total value of contracts for Canadian military exports to the United States at well over $1-billion annually.

Other top customers in 2022

Canada shipped weapons valued at $970.7-million to another 76 countries and territories.

In recent years (except for 2020), the total value of Canadian arms exported to recipients other than the United States and Saudi Arabia has been higher than at any point in the last two decades. This reflects both increases in global military expenditures as well as Canada's willingness to meet demand. Some of Canada's biggest customers in 2022 imported more arms than ever before.

At the top of this group was NATO ally Germany at $221.6-million, with the largest export category, for armoured vehicles and associated components, valued at $137.6-million. Canadian arms exports to Germany were the highest since that country's reunification in 1990.

In second spot was the United Kingdom at $104.5-million. This NATO ally was particularly interested in exports categorized as "technology," valued at $23.9-million.

Third was Poland, also in NATO. The total value of goods, at $61.9-million, reached a new high, surpassing the previous high in 2021, when the total was $12.7-million. The largest export category was imaging and countermeasure equip-

ment ($24.7-million).

India was fourth, with a highest-ever total of $54.8-million. The largest export category was for naval vessels, equipment, and associated components ($27.1-million), likely tied to India's expansion of its Navy.

Qatar was in fifth spot, with exports valued at $49.2-million. Again, the highest value ever for Canadian-made military goods and an increase of 122 per cent over the previous high of $22.1-million in 2019. Most of the exports in 2022 were military training goods and simulation equipment. Last year, Qatar was also added to Canada's Automatic Firearms Country Control List, signaling a closer arms trade relationship between Ottawa and Doha that could produce higher levels of military exports in upcoming years.

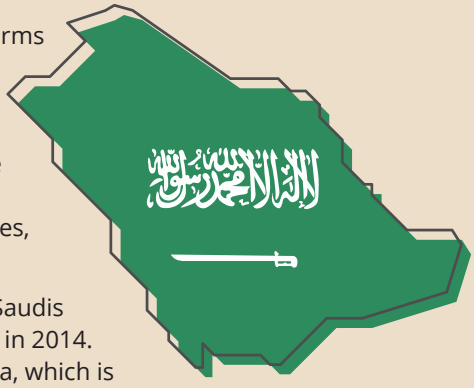
Ukraine took sixth spot, with military goods valued at $47.5-million. The bulk (valued at $45.2-million) were armoured vehicles and associated components – a mix of Senator armoured vehicles manufactured by Mississauga's Roshel and Armoured Combat Support Vehicles manufactured by London's General Dynamics Land Systems-Canada. However, this represents only a small subset of the total value of Canadian military goods shipped to Ukraine last year.

Canadian military support for Ukraine

The value of exports to Ukraine discussed above does not include most of the Canadian military aid provided to Ukraine following the Russian invasion in February 2022. By August 2023, the total value of this support, both provided and pledged, was well over $2-billion.

The Government of Canada does not treat military aid as normal arms exports. Military aid is subjected to a parallel and opaque regulatory risk assessment outside conventional per-

Arms sales to the Saudis still news



In a June 4 article, "Saudi Arabia is top export destination for Canadian arms after United States in 2022," Steven Chase, a senior parliamentary reporter for *The Globe and Mail*, wrote about a newly released Global Affairs Canada report that rated Saudi Arabia as the "most important customer for Canadian-made military goods after the United States." He noted, "Global Affairs does not publish the full value of annual military exports to the United States but arms trade monitor Project Ploughshares, based in Waterloo, Ont., estimates it significantly exceeds $1-billion."

The article related Canada's trading history with Saudi Arabia since the Saudis agreed to buy a record number of light armoured vehicles from Canada in 2014. Chase observed: "Last year was the 11th year in a row where Saudi Arabia, which is ranked among the worst countries in the world for human rights by Freedom House, has been Canada's second-biggest customer of military goods."

He then wrote: "**Kelsey Gallagher**, a researcher at Project Ploughshares, noted the half-decade diplomatic quarrel between Ottawa and Riyadh [that began in 2018] had no apparent material influence on the value of military exports to Saudi Arabia over the years. He pointed out that these shipments hit new highs over that period."

Then, on July 25, "Canada funneled arms to Saudis during Yemen war via opaque U.S. program" by Kelsey and co-author Anthony Fenton appeared on the website of the Breach, "an independent media outlet producing critical journalism to help map a just, viable future."

Readers of *The Ploughshares Monitor* will be familiar with articles by Kelsey and by Ploughshares Executive Director Cesar Jaramillo on the arms trade between Canada and Saudi Arabia, particularly the multi-billion-dollar contract for the light armoured vehicles (LAVs) produced in London, Ontario. This latest article fills in some of the history of this expanding economic relationship, including the role of the United States.

Values do not include exports to the United States. Values for years before 2022 have been adjusted for inflation and therefore appear higher than the values originally reported in earlier *Exports of Military Goods* reports.

Source: Project Ploughshares/Global Affairs Canada

mitting processes. One byproduct is that the value of Canadian military aid is not included in the annual *Exports of Military Goods* report, thus misrepresenting the actual value of Canadian arms transfers.

Using available public information, Project Ploughshares estimates that in 2022 Canada transferred approximately $500-million in military aid to Ukraine. This figure does not include transfers pledged in 2022 that were exported after December 31, 2022 or goods discussed in the previous section.

Getting a better picture

The *2022 Exports of Military Goods* report does provide some welcome clarity on how Canadian officials understand and mitigate some risks associated with arms transfers, particularly those linked to potential human rights violations and arms diversion. Such information will give civil society greater insights into Canada's regulatory regime.

However, major segments of Canada's annual arms exports remain in obscurity. If Canadian officials were to report fully on all Canada's annual arms transfers, the grand total for 2022 would almost certainly jump from $2.1-billion to more than $3.6-billion.

While Canada's *Exports of Military Goods* report has made positive steps toward transparency in recent years, it has not yet achieved as much transparency as it could. Canada's reporting regime should be amended to achieve that end, particularly in relation to arms exports to the United States and military aid. □

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Kelsey in Ottawa

On June 8, Ploughshares Researcher **Kelsey Gallagher** appeared before the Canadian House of Commons Standing Committee on Foreign Affairs and International Development (FAAE) in a session on Canada's sanctions regime. Also at this session was Ali Maisam Nazary, the Head of Foreign Relations for the National Resistance Front of Afghanistan. Both made opening remarks and then responded to questions from FAAE members.

In his opening five-minute statement, Kelsey focused on "transparency and regulatory gaps facing Canada's export of dual-use technologies and military goods," which he described as "technologies with both civilian and military end-uses" that "are subject to strict export controls" and are "particularly susceptible to illicit proliferation."

Kelsey then explored how Russia has integrated dual-use goods into numerous weapons systems deployed in its invasion of Ukraine. And he noted that when the invasion began in February 2022, "Canada revoked export and brokering permits to Russia for controlled goods, which include conventional weapons, dual-use goods, and all other categories of technology listed under Canada's Export Control List."

However, Kelsey noted that, while "Canada's reporting record on arms exports is relatively transparent," Canada "publishes almost no information on its actual export of dual-use goods." He called for "greater scrutiny and transparency." He went on to say: "An examination of the extraterritorial application of Canadian sanctions could also reveal other weaknesses in Canada's regulatory regime. Of particular interest are alleged sanctions violations by companies with deep Canadian roots that also perform operations abroad."

Kelsey cited the Streit Group, an armoured vehicle manufacturer that he calls "perhaps Canada's most controversial arms supplier," for finding ways to "evade arms embargoes." In his view, "the Streit Group provides a roadmap for other arms suppliers who may wish to dodge Canadian export controls and sanctions." He concluded his opening statement with recommendations on how the Canadian government can prevent Canadian arms from reaching "sanctioned states and actors."

Some of these recommendations were expanded upon in the question period. He pointed, repeatedly, to brokering controls as a new tool "to address sanctions violators that exploit offshore export havens" because "brokering has been identified as a major driver of insecurity in the international arms trade." He noted, "One of our recommendations was for the Government of Canada to review how effective its implementation of brokering controls is."

As brokering controls have not always worked in the past, Kelsey advised, "If the current toolkit isn't working, then the toolkit has to be amended." He recommended "pouring resources into the tools that we already have to upscale their effectiveness" and looking to "other states parties to multilateral treaties like the [Arms Trade Treaty] and other arms control treaties, such as the Wassenaar Arrangement, to find best practices in applying the regulations that we already have" on brokering controls.

Kelsey noted that dual-use goods are "a hot topic" now, with "Russia and other states … seeking dual-use goods because their supply chains have been cut off." But, he admitted, "we really don't know the extent of this problem because there is almost zero transparency on Canada's export of dual-use goods …. The only specific type of information that we have on dual-use permits is when they've been denied." He urged Canadian officials to "look at systems right now that are actually not deemed to be dual-use but certainly are."

When asked about other countries that should be sanctioned by Canada, Kelsey mentioned Saudi Arabia and the United Arab Emirates. When asked, he agreed with the questioner that there might be some merit to adding Russia to Canada's area control list, "a mechanism whereby a state is listed and everything that goes to that country can only be sold, basically, with an export permit"; the only country currently on this list is North Korea. As he noted, it would stop "the provision of weapons—things like dual-use goods … and also commercial, off-the-shelf items that should be listed as dual-use but are not."

The complete transcript of the session can be found at:
https://www.ourcommons.ca/Committees/en/FAAE/Meetings#2023-06-08.

Our core values

On June 20, Ploughshares Executive Director Cesar Jaramillo called for all parties involved in the war in Ukraine "to engage in meaningful **dialogue**, recognize the **limitations of military force**, and seek a **negotiated settlement** that is built on the principles of **fairness, justice, mutual security,** and respect for **territorial integrity** and the right to **self-determination**."

On July 11, Project Ploughshares published a statement, *On the U.S. Decision to Transfer Cluster Munitions to Ukraine*. It begins: "Project Ploughshares strongly condemns the decision made by the United States to transfer cluster munitions to Ukraine." It ends with a call to "all parties to the current conflict in Ukraine to ensure the **protection of civilians** and uphold the principles of **international humanitarian law**."

Our words reflect our values. If they also reflect YOUR values, please consider making a special donation to Project Ploughshares today.

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