

# CHRONICLES OF WAR

## LETHAL AID:

Reviewing the lethality of  
military assistance pledged  
to Ukraine between February  
and May 2022

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## About the Chronicles of War

The Chronicles of War is an internal SecDev research initiative designed to assess the trajectory of the Russia-Ukraine war during the first month of the war. Relying principally on open sources and key informant interviews in Ukraine and Russia, the focus is on three key areas:

- Security and safety of Ukraine's civilian nuclear infrastructure. The war in Ukraine is the first to occur within a country operating multiple civilian nuclear plants and countless civilian and medical facilities containing radiological materials.
- The cyber dimensions of the Ukraine conflict. Most conflicts now occur in five domains, including cyberspace. The escalatory use of cyberweapons could result in the invocation of NATO Article 5 provisions and pull more countries into the war.
- The perception of fighting by Russian soldiers and civilians. Successful war-fighting often depends on motivated and trained troops and a supportive public. Using digital methods to listen in on soldier conversations and assess wider public sentiment, it is possible to assess the strength, organization and effectiveness of Russia's war effort.

Military aid to Ukraine increased in scale and lethality since Russia's invasion in late February 2022. Russia has repeatedly warned NATO members about the risks of transferring arms and equipment that could increase the intensity of the conflict. There are concerns that the provision of more lethal weapons and equipment could lead to escalatory patterns that would heighten potential confrontations between Russian, European and US forces. To assess patterns of military assistance to Ukraine, SecDev monitored public pledges from supplier countries. Data was gathered and verified to the extent possible from open sources and classified by SecDev analysts. While announcements of military aid do not necessarily translate into physical delivery, they can be used to assess potential escalatory dynamics.

## Key takeaways

- Russia has repeatedly indicated its preparedness to use nuclear weapons and has attacked Ukraine's nuclear facilities. Russia's nuclear forces were put on "special alert" on 27 February 2022. Meanwhile, Russian forces have seized control of the Chornobyl and the Zaporizhzhia nuclear power plants.
- At least 34 NATO members and allies pledged to supply military assistance including weapons, ammunition, equipment and intelligence assets to Ukraine between February and May 2022. After a surge in military aid in February and March 2022, the number of announcements pledging support declined in May 2022.
- The largest contributor of military assistance based on declared pledges was the US (\$4 billion), constituting over 63% of all announced transfers. The US was followed by Canada (\$630 million), the UK (\$536 million), Estonia (\$234 million), Latvia (\$215 million), Australia (\$132 million), France (\$127 million) and Italy (\$120 million).
- SecDev detected an unambiguous shift in the lethality - the accuracy and destructiveness - of announced military assistance over the February-May 2022 period. There was a steady decline in the share of less sophisticated military aid such as non-lethal equipment, training, small arms and light weapons and vehicles. By contrast, there was a sharp increase over the same period in the share of aid devoted to specialized precision weaponry, longer range artillery, electronic warfare systems and intelligence.



# Military assistance to Ukraine

Ukraine has requested and received increasingly sophisticated military assistance from NATO members since the onset of the Russian invasion. After over [50 defense leaders](#) met in May 2022, western countries [pledged](#) a wide range of lethal and nonlethal military assistance that included assault rifles, anti tank missiles, howitzers, helicopters, gunboats, radar systems and mobile multiple rocket launchers to support Ukrainian forces. This [arsenal includes force multipliers including intelligence, surveillance and reconnaissance \(ISR\) assets](#) with comparatively limited oversight. While there are [some concerns](#) that Ukrainian troops lack the technical skills to operate some weapons systems effectively, western support is sending a message to Russia and upgrading Ukraine's long range firepower and [stand-off capabilities](#).

While dozens of countries have publicly pledged military assistance, the [precise details of transfers](#) to Ukraine are often classified or opaque. Nevertheless, a surprising amount of [information](#) is available in open sources and can be used to provide an approximate indicator of support. SecDev assembled a preliminary database of declared military assistance drawing on a search of open and available sources between end February and end May 2022. Specific transactions are categorized where possible according to the country and timing of the declaration along with assistance type, volume, and estimated value (where possible). SecDev also developed a "lethality index" to gauge what types of assistance are increasing the accuracy and deadliness of Ukraine's combat capabilities.

The review identified 34 countries involved in supplying Ukraine with military aid, from Australia and Japan to NATO members. SecDev identified over 250 separate pledges of military assistance by late May 2022. After a spate of such announcements of weapons, munitions and related equipment to Ukraine in February, March and April, public pledges started declining significantly in May. The total estimated value of declared transfers also declined. SecDev identified progressively more lethal military assistance being pledged in April and May compared to late February and March. Indeed, the proportion of assistance falling into the highly lethal categories was 73 percent in May as compared to just 11 percent in late February and early March. Ukraine will likely continue seeking increasingly lethal equipment: the president's office [may request](#) 200-300 multiple rocket launchers, 2,000 armored vehicles and 1,000 drones from NATO in June.

The increasing potency of western-supplied military assistance is viewed with concern by Russia, precipitating calls for escalation in domestic media and among selected officials. Russia has [repeatedly warned](#) the US about arming Ukraine with sophisticated weapons, including long-range missile systems. Moscow has sent [formal diplomatic notes](#) to Washington DC noting that US and NATO shipments of the "most sensitive" weapons systems to Ukraine were "adding fuel" to the conflict and could generate "unpredictable consequences". The letter was sent after Biden approved an [\\$800 million](#) package including Stinger anti-aircraft systems, Javelin anti-armor systems, drones, small arms and light weapons and millions of rounds of ammunition. As the US approves up to [\\$20 billion](#) in military support to Ukraine (to add to the \$4 billion already spent), Russia threatens it could cross a "red line" and increase the risk of direct confrontation. These issues are [recognized](#) by the Ukraine, the US and NATO allies.

# Disaggregating military aid

SecDev identified at least 34 countries making 252 announcements about military assistance to Ukraine between late February and the end of May 2022. The accounting in Figure 1 compliments, and moves beyond, [other inventories](#) of weapons and equipment transfers from independent research

organizations. By far the largest contributor was the US, with a total of 41 announcements, followed by the Czech Republic, UK, Canada, the Netherlands and Poland. Where a single announcement included multiple categories of military aid, these were treated as separate pledges and accounted for individually. The extent to which the transfer end use of material is being monitored varies by weapons system, though [concerns are rising](#) that they may fuel [black market](#) sales.

**Figure 1.** Cumulative announcements by countries pledging military assistance to Ukraine (February - May)

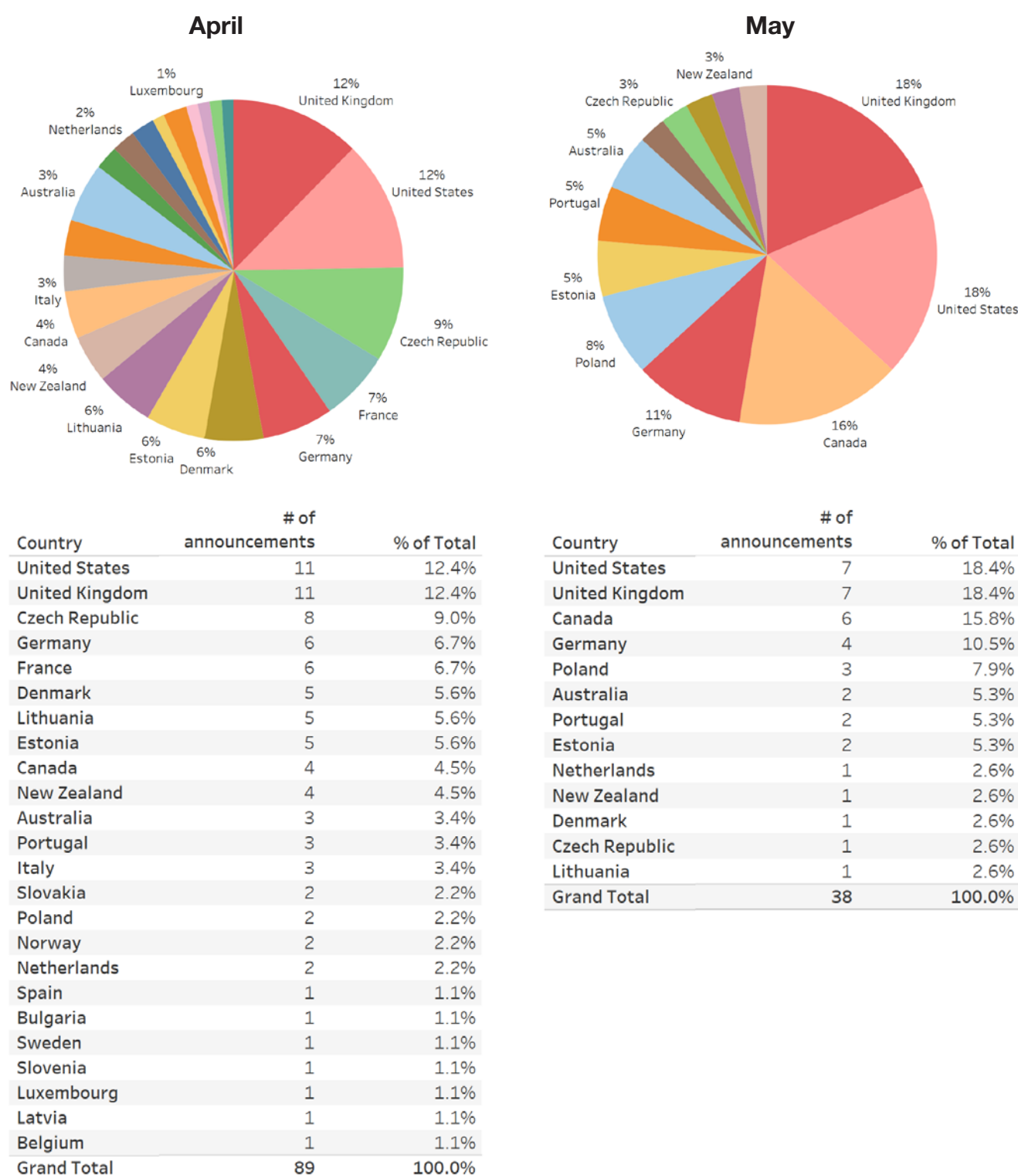
Country	February 2022	March 2022	April 2022	May 2022	Grand Total
United States	1	22	11	7	41
Czech Republic	11	7	8	1	27
United Kingdom	1	3	11	7	22
Canada	5	4	4	6	19
Germany	2	5	6	4	17
Netherlands	11		2	1	14
Poland	6		2	3	11
Denmark	3		5	1	9
Lithuania	2		5	1	8
Estonia			5	2	7
Portugal	1		3	2	6
France			6		6
Australia		1	3	2	6
Spain	1	3	1		5
Slovakia	3		2		5
New Zealand			4	1	5
Sweden	2	1	1		4
Norway	2		2		4
Luxembourg	3		1		4
Latvia	2	1	1		4
Italy	1		3		4
Belgium	3		1		4
Slovenia	2		1		3
Greece	3				3
Finland	3				3
Ireland	2				2
Croatia	2				2
Turkey		1			1
South Korea		1			1
Romania	1				1
North Macedonia		1			1
Japan		1			1
Bulgaria			1		1
Albania		1			1
Grand Total	73	52	89	38	252

SecDev detected a sharp reduction in announced military assistance to Ukraine after April 2022. Specifically, there was a 57% decline in the number of announcements between April and May (Figure 2). As the number of countries making pledges declined, so did the overall volume of announced aid. This decline could be a result of a deliberate

shift in strategy to avoid publicly broadcasting transfers to Russia. After a surge in pledges in February and March, it is equally possible that the bulk of transfers have already been transferred and there is less of a material requirement to provide additional weapons, munitions and parts and components at this juncture in the conflict.

**Figure 2.** Declining announcements of military assistance in April and May

SecDev documented the range of military assistance pledged to Ukraine. The level of detail



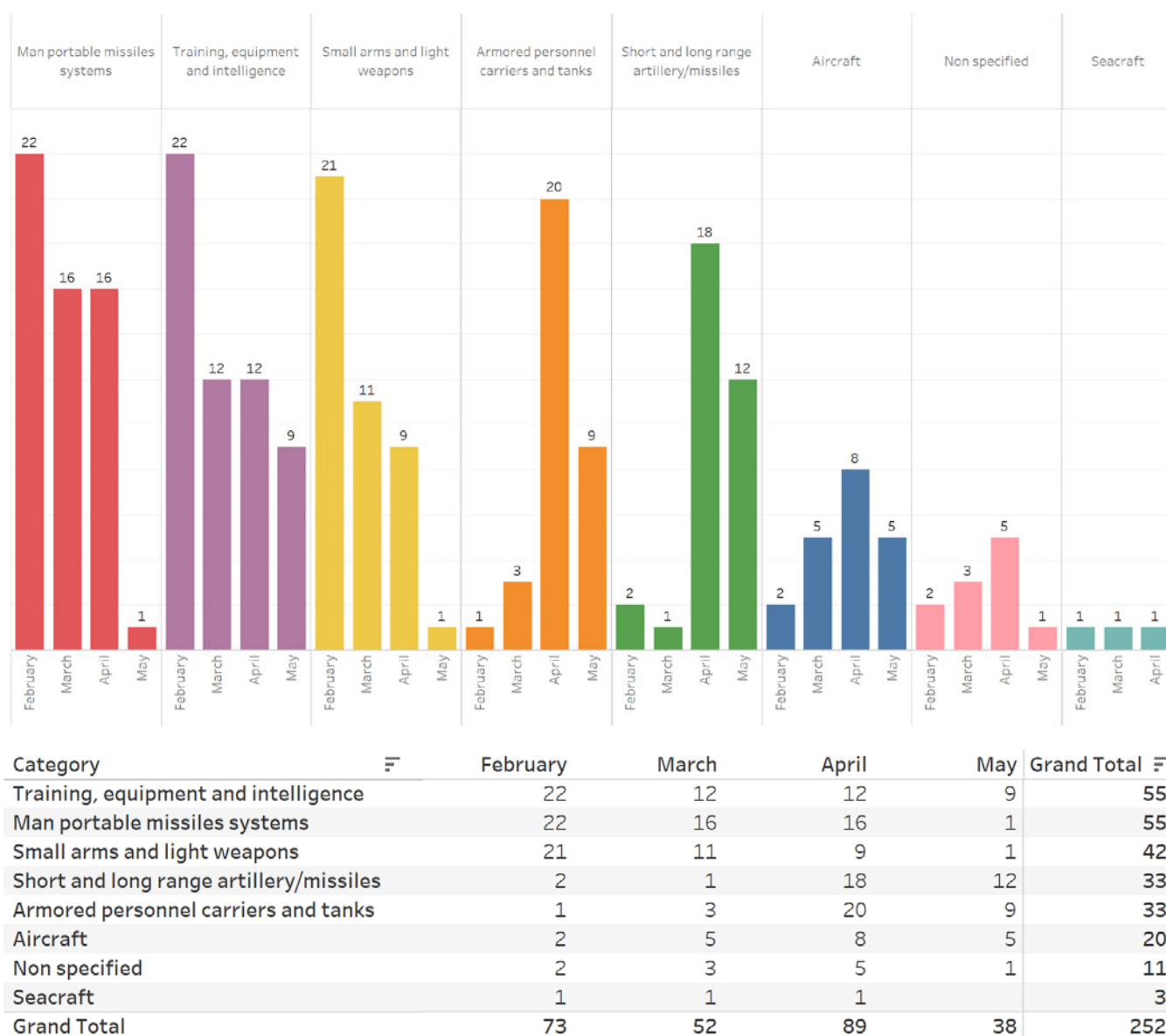
and specificity varies from announcement to announcement. However, the key arms types can be disaggregated into aircraft (fighter jets, helicopters and military drones), armored personnel carriers and tanks, ships, short and long-range artillery, man-portable air defense systems, small arms and light weapons (and ammunition), training, equipment including body armor and night vision devices and a wide range of intelligence assistance (Figure 3). There are also several announcements

that do not specify the type or value of military assistance provided. In some cases, announcements explicitly documented the weapons type, volume and value while in others, categories were generic or unspecified. There is invariably a correlation between the number of announcements and the overall volume of publicly pledged military assistance.

**Figure 3.** Cumulative pledges of military assistance to Ukraine, by type of assistance (Feb - May)

Country	Aircraft	Armored personnel carriers and tanks	Man portable missiles systems	Seacraft	Short and long range artillery/missiles	Small arms and light weapons	Training, equipment and intelligence	Non specified	Grand Total
United States	7	3	8	2	7	4	9	1	41
Czech Republic	1	3	2		6	12	3		27
United Kingdom	2	5	5		3		5	2	22
Canada	1	1	4		3	3	6	1	19
Germany	1	3	7		1	3	2		17
Netherlands		1	2	1	1	4	5		14
Poland	2	3	2		2	1	1		11
Denmark	1	2	2		2	1	1		9
Lithuania		1	3		1	2	1		8
Estonia		2	1		2	1	1		7
Portugal		2			1	2	1		6
France			2		1		2	1	6
Australia	1	3	1		1				6
New Zealand						1	4		5
Spain		2	1			1	1		5
Slovakia	1		3		1				5
Latvia	1		1				1	1	4
Italy			2			1		1	4
Belgium			2			2			4
Luxembourg		1	1				1	1	4
Sweden			2				2		4
Norway			2				1	1	4
Slovenia		1				1	1		3
Greece			1		1	1			3
Finland			1			1	1		3
Croatia						1	1		2
Ireland							2		2
Turkey	1								1
South Korea							1		1
Romania							1		1
Japan							1		1
Albania								1	1
Bulgaria	1								1
North Macedonia								1	1
Grand Total	20	33	55	3	33	42	55	11	252

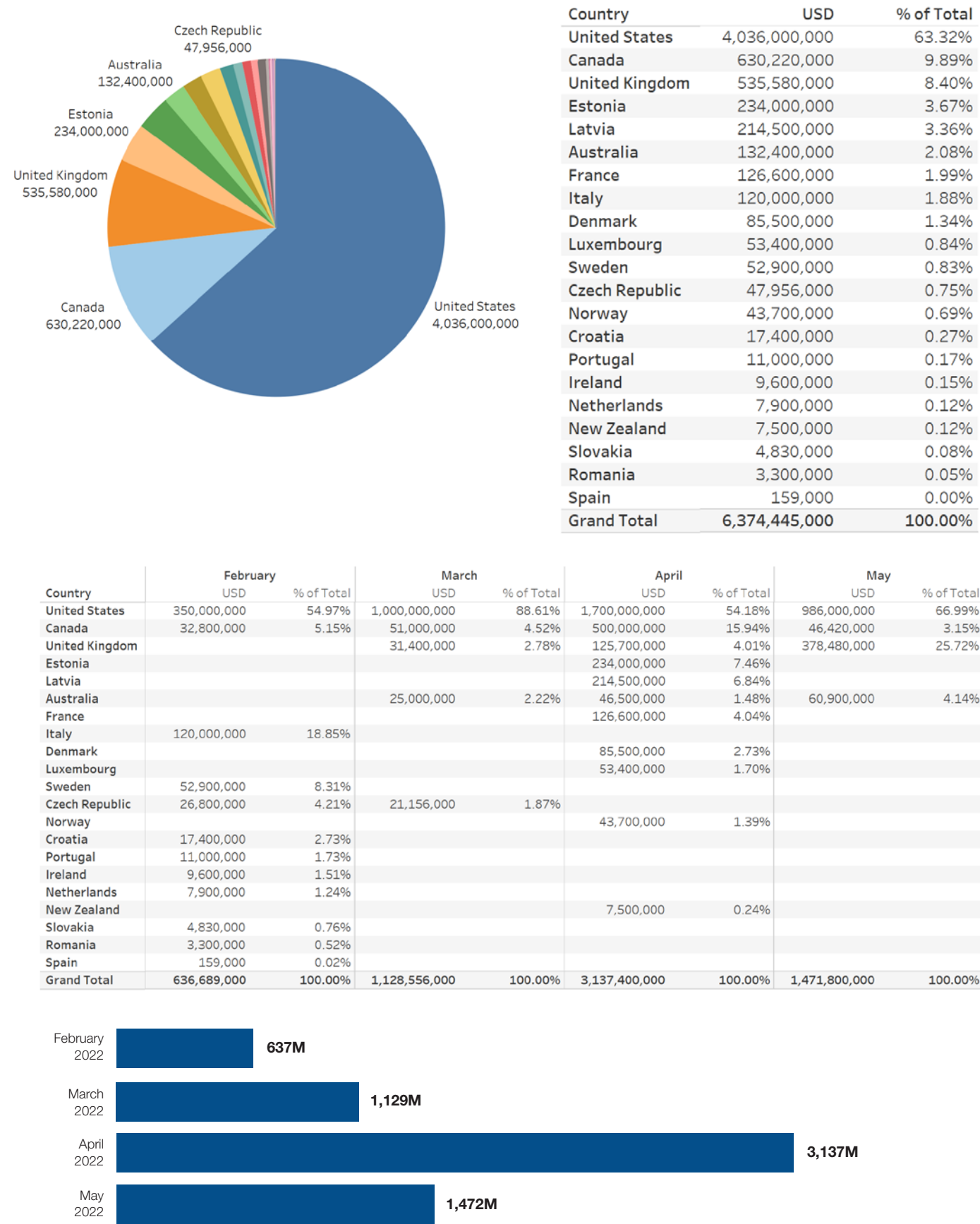




A sizable segment of the total sample of pledged military assistance included information on the approximate value of the shipments. While not necessarily representative, these announcements provide insight into the relative financial contributions of military aid provided by a selection of western countries to Ukraine. SecDev only included data from announcements where values were explicitly mentioned in authoritative media outlets and did not verify or validate this information through secondary sources.

A deeper analysis could shed light on the real overall value of publicly announced transfers. Even so, the US's declared transfers amount to over US\$ 4 billion, over 63% of all announced transfers. By comparison, Canada announced assistance of US\$ 630 million, the UK some US\$ 536 million, Estonia US\$ 234 million, Latvia US\$ 215 million, Australia US\$ 132 million, France US\$ 127 million and Italy US\$ 120 million (Figure 4). Baltic countries committed vastly more resources as a proportion of their GDP. There was a dramatic decline in the value of assistance - some 53% - between April and May 2022.

Figure 4. Estimated value of a sample of pledged military assistance (February - May)



A growing [concern](#) in some quarters is that the increasing sophistication and “lethality” of arms transfers to Ukraine could prompt a harsh escalatory response from Russia. According to Kremlin spokesperson Dmitry Peskov: “the tendency to pump weapons, including heavy weapons into Ukraine and other countries, these are actions that threaten the security of the continent [and] provoke instability.” To avoid this risk the US has [required Ukraine](#) to assure that weapons systems, particularly high mobility artillery rocket systems (HIMARS), will not be used against targets on Russian territory. According to Secretary of State Anthony Blinken: “Ukrainians have given us assurance that they will not use these weapons against targets in Russian territory.” The US ruled out providing the Army Tactical Missile System which has a range of 190 miles for precisely this reason. As [noted](#) by Director of National Intelligence, Avril Haines, the US wishes to support Ukraine but does “not want to ultimately end up in World War III, and we do not want to have a situation in which actors are using nuclear weapons.”

To better understand potential risks, SecDev developed a preliminary index to distinguish the accuracy and destructiveness of military assistance by type. The index categorizes weapons and assistance according to a score from 1-6. An underlying assumption is that the higher the score, the more it could contribute to escalatory dynamics with Russia. At the lowest end of the index are (1-2) training and logistical support, non-lethal equipment and small arms, light weapons and ammunition. In the medium to significant ranges are (3-4) short range artillery and light armored vehicles, man-portable air defense systems, heavy artillery, armored personnel carriers, light attack drones and patrol boats. At the highest end of the index (5-6) are tanks, electronic warfare systems, aircraft, fixed wing attack drones, specialized high precision weapons and intelligence (Figure 5).

**Figure 5.** Index of Lethality: military assistance pledged to Ukraine (February - May)

Lethality score	Rank points	Assistance Type
1 - Minimum	1	Training and logistical support
1 - Minimum	1	Non-lethal personal military equipment (e.g. helmets, bulletproof vests, night vision equipment, medical aid, food packs and encrypted handsets and radios)
2 - Low	2	Small arms and light weapons (e.g. assault rifles, machine guns, RPGs, ammunition, grenades and anti-personnel mines)
3 - Medium	3	Short range artillery, mortars and munitions (below 120mm)
3 - Medium	3	Light armored and non armored transport vehicles
3 - Medium	3	Man-portable air defense systems (e.g. anti-aircraft and anti-tank/armor weapons such as Javelins and Singers)
4 - Significant	4	Heavy / long range artillery (e.g. heavy artillery, howitzers, artillery towing vehicles and shells of 155mm and above)
4 - Significant	4	Armored personnel carriers
4 - Significant	4	Light attack and reconnaissance drones (i.e. rotary operated wing)
4 - Significant	4	Patrol boats and remotely operated underwater vehicles
5 - High	5	Tanks
5 - High	5	Electronic warfare systems
6 - Maximum	6	Aircraft and fixed wing military UAVs (e.g. Bayraktar) and associated munitions
6 - Maximum	6	Specialized high-precision weapons (e.g. precision loitering munitions, anti-ship missile systems, long-range multiple launch rocket systems and smart munitions)
6 - Maximum	6	Intelligence support assets including C4ISR systems, access to targeting data (SIGNINT, ELINT, HUMINT), imagery and precise GPS, and other intelligence sharing from NATO and US space, sea and drone based systems

SecDev organized military assistance according to their overall lethality index score by month. While the sample is based on open sources and is incomplete, it offers a number of instructive insights. As expected, the analysis detected an unambiguous shift in the destructive potential of weapons shipments - and thus potential escalatory dynamics over the February-May 2022 period. The total share of transfers in the lower categories (1 and 2)

declined dramatically between February and May - from almost 55% of all transfers to roughly 11%. Mid-range level transfers (3-4) increased from roughly 38% to 54% between February and May. The most noticeable increases occurred in the most lethal classes of weapons (5-6) from just 7% of all transfers in February to over 35% May.

Figure 6. Lethality of announced weapons transfers to Ukraine (February - May)

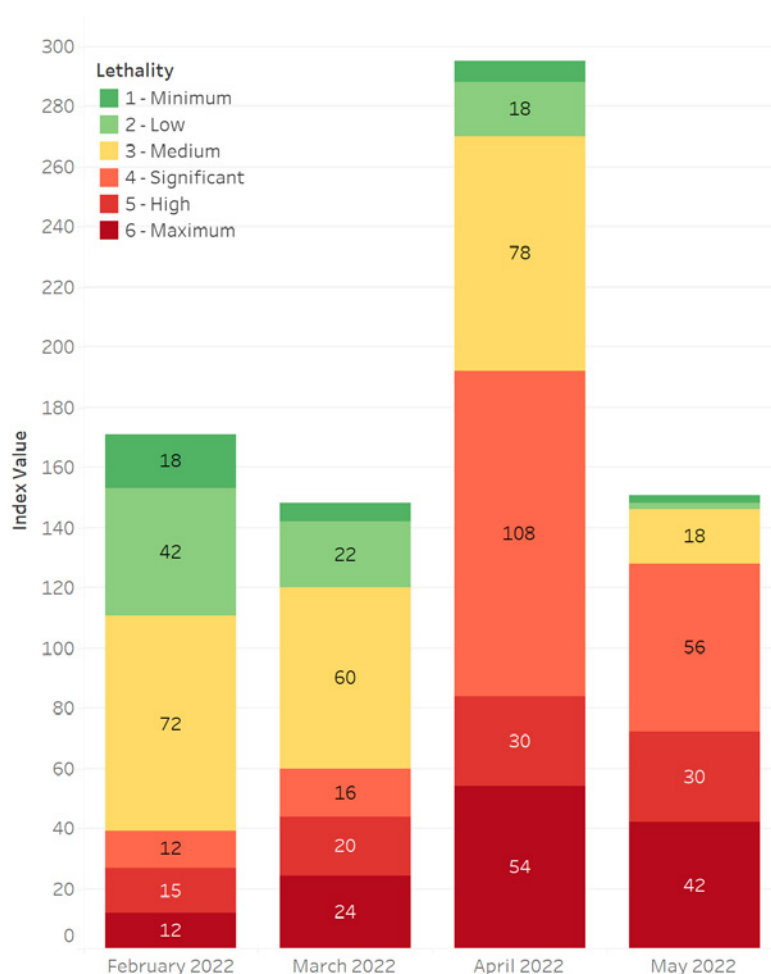


SecDev reviewed the monthly change in lethality assistance between February and May 2022. Figure 6 displays the total number of announcements for each “category” of pledged assistance. It shows progressive declines in minimum (1), low (2) and (3) medium categories over the three months. By contrast, there was a sharp increase in reported military aid transfers falling in the significant (4), high (5) and maximum (6) categories over the same

period. Figure 7 presents the cumulative lethality index by month. The scores reflect similar trends and are consistent with the narrative that NATO members and allies are ratcheting-up the supply higher up in the lethality score. SecDev will continuously review and update its classification systems and underlying data as more public information becomes available.

**Figure 7.** Reviewing the lethality of military aid transfers (February - May)

Lethality	February 2022		March 2022		April 2022		May 2022	
	Index Value	%	Index Value	%	Index Value	%	Index Value	%
1 - Minimum	18	10.5%	6	4.1%	7	2.4%	3	2.0%
2 - Low	42	24.6%	22	14.9%	18	6.1%	2	1.3%
3 - Medium	72	42.1%	60	40.5%	78	26.4%	18	11.9%
4 - Significant	12	7.0%	16	10.8%	108	36.6%	56	37.1%
5 - High	15	8.8%	20	13.5%	30	10.2%	30	19.9%
6 - Maximum	12	7.0%	24	16.2%	54	18.3%	42	27.8%
Grand Total	171	100.0%	148	100.0%	295	100.0%	151	100.0%





## Risky future

Awareness about patterns of military assistance are important to understand escalatory dynamics, including the use of progressively destructive - even nuclear - weapons. Russian authorities have [promised](#) to hit new targets if Ukraine receives longer-range rockets. Yet most assessments of military transfers are undertaken on an [annualized basis](#) and based on a review of export and import data. While offering critical understanding, they may be less applicable in active conflict settings. Alternative methods drawing on public sources, including [ground-truthing](#) weapons with researchers on the ground, can help generate new and timely insight about military assistance - especially of munitions - in dynamic kinetic environments. There are limitations to such approaches of course, not least when it comes to verifying the authenticity of statements and on-site inspections of transferred material.

The risks of escalation between Russia and NATO countries is real. The US and Ukraine have [discussed](#) these threats. And the dangers are not limited to western convoys and military supply chains in Ukraine. Russia has [said](#) it will respond “proportionately and appropriately” to NATO military build-up in Poland and other countries as well. Methods and tools to [assess escalation tendencies](#) are more urgently needed than ever. SecDev combines open source methodologies and advanced machine learning techniques to analyze and forecast security trends in Ukraine and around the world. In addition to monitoring military assistance, SecDev is also [quantifying the risks](#) of nuclear escalation between Russia and neighboring countries, the value of primary commodities in Ukraine and the online ecosystem in Russia. While data availability on sensitive issues is often partial and uneven, by collecting and collating multiple data sources, it is possible to better assess trends and assess risks with the intention of mitigating them.

## About SecDev

[SecDev](#) is an agile research and innovation firm helping clients navigate digital-geopolitical, geospatial and geodigital risk. SecDev builds value through innovation in strategic foresight, data science and urban analytics. SecDev's team is fluent in technology, global in scope and results-oriented. SecDev empowers clients, such as national governments, technology companies and international organizations, to make informed choices that deliver value in the digital-urban age.



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