

Why the world is worried about Russia's 'tactical' nuclear weapons

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The war in Ukraine has led to a resurgence of fears about the use of nuclear weapons. Russia is armed to the teeth with nukes, as are several of Kyiv's Western backers.

If the conflict spiraled beyond Ukraine, it could pit nuclear powers against each other. Russian President Vladimir Putin made a clear reference to such a scenario in a national address on Wednesday that called for a partial military mobilization in the face of setbacks in the war.

"In the face of a threat to the territorial integrity of our country, to protect Russia and our people, we will certainly use all the means at our disposal," Putin said.

For several months, the United States has been sending private communications to Moscow warning Russia's leadership of the grave consequences that would follow the use of a nuclear weapon, according to U.S. officials. On Friday, the White House said it saw no reason for the United States to adjust its nuclear posture "at this time."

But the strategic landscape has been complicated by the roughly 1,500 "tactical" warheads Russia has stockpiled since the Cold War ended. These smaller nuclear weapons, which are far less powerful than the ones the United States dropped on the Japanese cities of Hiroshima and Nagasaki during World War II, are designed to be used on the battlefield.

The smaller size of the weapons, some experts fear, could break down the nuclear taboo. They warn against underestimating what are still weapons of mass destruction, with the potential to cause widespread casualties from radiation alone.

Sarah Bidgood, director of the Eurasia program at the James Martin Center for Nonproliferation Studies in Monterey, Calif., said it was hard to estimate the level of risk that Russia would use a tactical nuke in Ukraine, but that it was clear that Russia relied on its nuclear weapons, including tactical weapons, to give it flexibility in managing the risk of escalation.

"Russia could introduce nuclear weapons into a conflict when it felt it had run out of conventional options and was facing an existential threat," she said. But, she added, "we don't have a good sense for what all of Putin's red lines are here, or what he regards as an existential threat."

What is a tactical nuclear weapon?

“Strategic” warheads have enormous yields and would be able to level a city. Then there is the “nonstrategic,” or “tactical,” warhead. These are smaller, though still able to inflict considerable death and destruction.

Aside from their size and yield, the key difference is in how they are intended to be used. A strategic weapon is designed to strike with devastating might as part of a grand strategy during wartime. This has been the traditional nuclear fear in Washington and Moscow — a Dr. Strangelove-esque nuclear doomsday scenario.

But tactical nuclear weapons are, in theory at least, designed to be used as part of a battlefield plan. That doesn’t mean they are narrow in effect. Some types have a variable yield, which would allow their explosive power to be calibrated to a specific attack; others, dubbed “neutron bombs,” were designed to spread radiation with only a minimal blast.

Many experts disagree that there is actually a clear distinction between tactical and strategic nuclear weapons, in part because even smaller bombs can emit massive radiation, along with the inevitable risk of escalation.

“The only mission for nuclear weapons, definitely in this war, is to either kill a lot of people or to show that you are willing to escalate and kill a lot of people. Period. There is nothing else,” Pavel Podvig, an expert on Russia’s nuclear forces at the U.N. Institute for Disarmament Research, wrote on Twitter in response to an earlier version of this article.

What do we know about Russia’s tactical nuclear arsenal?

Many countries, including the United States and the Soviet Union, invested heavily in tactical weapons during the Cold War. Both Washington and Moscow unilaterally downsized their nuclear programs after the fall of the Soviet Union.

An arms control treaty, called New START, negotiated by President Barack Obama and Russia’s then-President Dmitry Medvedev in 2010, limited both countries to the deployment of 1,550 nuclear warheads on ballistic missiles and bombers. However, the smaller tactical weapons are not governed by this deal, nor any other international agreement.

A report released in February by the Federation of American Scientists found that Russia had a stockpile of approximately 4,477 nuclear warheads in total. Of this number, roughly 1,588 were strategic warheads that had been deployed, while 977 were in storage but ready to use. Russia had roughly 1,912 nonstrategic warheads that the report says are also in central storage, though FAS notes that these storage sites may be close to bases with operational forces (a further 1,500 warheads were considered retired but still “largely intact”).

A ‘small’ nuclear missile

The 9K720 Iskander missile system, known to NATO forces as the SS-26, is capable of delivering “tactical” nuclear weapons as well as standard explosive warheads. The Russians appear to have Iskanders deployed in Ukraine.

9M723 Ballistic Missile

Range: Approx. 300 miles

The booster rocket stage and the warhead are both maneuverable in flight for precise targeting

MZKT launch/support truck

The United States, meanwhile, has 1,644 strategic nuclear weapons deployed, as well as 100 tactical weapons that are deployed in Europe. It has a further 1,984 warheads in storage — of which 130 are tactical.

Are tactical nuclear weapons of particular importance to Russia?

In the late 1990s, facing economic problems that left their traditional army in tatters and the humiliating military stalemate with separatist leaders in Chechnya, Russian leaders appeared to have refocused on nuclear technology.

In 1999, Putin, who was then secretary of the Kremlin Security Council, said that after a meeting with then-President Boris Yeltsin, the Russian leader had endorsed “a blueprint for the development and use of nonstrategic nuclear weapons,” according to reports from the time.

Western analysts argue that in recent years Putin has created what became known as an “escalate to de-escalate” doctrine, though Russian documents did not use this phrase. In a report released in early March, the Congressional Research Service described that alleged doctrine.

“Russian statements, when combined with military exercises that seemed to simulate the use of nuclear weapons against NATO members, led many to believe that Russia might threaten to use its nonstrategic nuclear weapons to coerce or intimidate its neighbors,” the CRS report stated.

Adam Mount, director of the Defense Posture Project at the Federation of American Scientists, said that the weakness of Russia’s conventional weapons systems might explain potential reliance on nuclear threats.

“In general, if a country can achieve its objectives without nuclear weapons, it will,” Mount said. “Nuclear weapons are tools of the weak.”

Why are some experts worried about nukes in Ukraine?

No country has used nuclear weapons in a war since the United States dropped two nuclear bombs on Japan in 1945. However, Russian officials have made repeated comments about nuclear weapons. Putin announced on Feb. 27, just days after he invaded, that he had moved Russia’s nuclear deterrent forces into alert.

Russia has also shown off new missile technology during its invasion of Ukraine, including an air-launched ballistic missile called Kinzhal that can travel at hypersonic speeds, as well as a long-range cruise missile called Kalibr.

Both missiles are considered dual-capable, Mount said, meaning they could carry a conventional weapon or a nuclear warhead — a significant problem for Western militaries, as they might not know it is a nuclear strike until one explodes. But so far there is no sign that Russia has moved its tactical warheads out of storage, Mount added.

Bidgood said that she rated the risk of nonstrategic weapons in Ukraine as low, but increasing.

‘Tactical’ nuke could still wreak grievous destruction

“Putin seems to feel confident that he can use veiled threats and signals to escalate and de-escalate to suit his needs,” said Bidgood, speaking at the start of the conflict. “But that’s a very dangerous game and one that can easily lead to miscommunications and misinterpretations.”

Mount said that the public anxiety over the use of nuclear weapons in Ukraine “has far outstripped the actual risk,” so far at least. “The risk increases as Putin becomes more desperate, but the fact remains that nuclear use would not help him win the war or cause Washington to abandon Kyiv,” Mount said.

It is not clear how the United States would respond if Russia detonated a tactical nuclear weapon. Ukraine is not a NATO ally and it is not bound by treaty to protect it. But U.S. officials have spoken of how seriously they would take such an instance.

In 2017, then-Air Force Gen. John E. Hyten took exception to the idea that tactical nuclear weapons are really in a different category than strategic nuclear weapons. Hyten, who was at that point overseeing U.S. nuclear weapons as the chief of U.S. Strategic Command, described how the United States could respond if another country used them.

“It’s not a tactical effect, and if somebody employs what is a nonstrategic or tactical nuclear weapon, the United States will respond strategically, not tactically, because they have now crossed a line, a line that has not been crossed since 1945,” Hyten said.