Tactical Nuclear Weapons

by George Friedman - September 16, 2022

There has been endless speculation that Russia might use nuclear weapons in Ukraine. Given that Russian President Vladimir Putin has mentioned their use on several occasions, that concern is clearly justified. Given that mentioning something can either indicate intent or simply be a bluff, there is reason for scrutiny. Either way, a discussion of nuclear weapons is in order.

The first task is to define the two important classes of nuclear weapons: the strategic and the tactical. They differ in size, of course, although this is not as significant as it might appear. There are tactical nuclear weapons with power greater than the bomb dropped on Hiroshima. There are others whose yield is not much greater than a large artillery round.

The real distinction is the mission. Strategic weapons are designed to render the opposing nation unable or unwilling to resist by destroying its critical infrastructure and at least significant elements of its population. Tactical nuclear weapons are designed to add additional force to battles limited in scope and being fought for limited intents. A strategic nuclear attack on Ukraine would involve nuclear strikes on major cities, production facilities and transport. Its intent would be to rapidly render Ukraine unable to function. A tactical nuclear attack would be intended to destroy Ukrainian forces engaged in battle with conventional Russian forces. Both tactical and strategic nuclear weapons intend to defeat the enemy, but strategic weapons intend a definitive destruction of the enemy nation, while tactical weapons intend the defeat of more limited forces and hope to compel capitulation on a particular battlefield. The size of the nuclear weapon required for this could vary and might be larger than the Hiroshima bomb, and yet it still could be considered a tactical nuclear weapon. Again, it is not the weapon’s size but its mission that draws the line.

The United States developed tactical nuclear weapons in the 1960s. Their purpose was to deter or defeat a potential Soviet armored thrust into West Germany. The theory was that U.S. forces would withdraw from the front for several miles, and then the large-scale Soviet thrust would be annihilated by a tactical nuke. Since tactical nuclear weapons were expected to have limited fallout, U.S. armor could move forward through the gap(s).

Of course, massed artillery at the same distance could achieve the same end. The problem that the tactical nuclear weapon was intended to solve was the inevitable inaccuracy of conventional

weapons. An artillery piece had to know the precise location of its target as it fired, and then be able to hit it. This is difficult enough on its own, but the time between firing and impact complicated the mission, as the target could avoid the strike simply in the context of normal maneuvering. Moreover, Soviet counter-battery fire would likely descend, requiring rapid redeployment and making a second round impossible.

Tactical nuclear weapons overcame this problem by having a wider radius of destruction, though not too large or it would put the firing platform at risk. Other shortcomings include the blinding effect of a nuclear detonation on both sides, the (limited) radiation zone and the coming world of hurt as enemy aircraft came in to destroy the nuclear launcher. In solving one problem, tactical nuclear weapons would paint a target for the Soviets.

The development of precision-guided munitions (PGMs) made the tactical nuclear weapon even less useful. During Desert Storm, a Tomahawk cruise missile fired from a U.S. ship could hit a Baghdad building's third floor, the second building from the right. (This actually happened.) Initial guidance came from GPS, then TERCOM (or terrain contour matching). A picture of the ground and terminal point would be fed into the missile's computer along with directional instructions, allowing it to eliminate the accuracy problems that tactical nukes were trying to solve and to do so without necessarily creating a threat to its own troops.

PGMs, both in artillery shells and longer-range missiles, meant that fire could be laid down as needed without the need for a saturation attack. And the range they could achieve meant that the launch mechanism was not necessarily in danger after firing. In Ukraine, PGMs of various sorts are being used by both sides. In the early part of the war, Russian tanks were destroyed by anti-tank missiles. The Ukrainians were more widely dispersed, and even a tactical nuclear weapon would have had minimal effect. As that is now changing, the use of tactical nuclear weapons is conceivable, but the Russians have other means to achieve similar outcomes.

I feel at this point like the guy who relaxed and learned to love nuclear weapons. I plead not guilty. But the need for an area kill weapon has made the tactical nuke, with frequent collateral damage on its own side, much less compelling. In the many wars fought since the tactical nuclear weapon was introduced, it has never been used. This is due not to sentiment but to utility. The utility of large strategic nuclear weapons seems to be intact, but there are more effective ways to destroy targets without saturating the area. Of course, there is also the psychological effect of using them. But the tactical use of nuclear weapons always has political costs and raises questions about how the United States, always unpredictable, would react.

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