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THE RETURN OF TACTICAL NUCLEAR WEAPONS: LOWERING THE THRESHOLD

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Introduction

Tactical nuclear weapons held an ambiguous status in strategic discourse for several decades after the Cold War. They were acknowledged in arsenals and debated in arms control negotiations but widely treated as relics of a previous era's warfighting logic. A turning point came with the 1991 Presidential Nuclear Initiatives: the U.S. and Russia unilaterally pulled back thousands of short-range warheads, effectively agreeing that these smaller nuclear weapons were too risky to deploy and no longer militarily useful.[1] That consensus is now dissolving. From Russia's battlefield signalling during its war in Ukraine to China's rapid expansion of shorter-range missile systems, and from North Korea's diversification of delivery platforms to renewed American investment in low-yield sea-launched cruise missiles, the world's nuclear-armed states are once again treating tactical nuclear weapons not as embarrassing leftovers but as instruments of active strategic competition.[2]

This article examines the resurgence of tactical nuclear weapons as a phenomenon that is simultaneously doctrinal, technological, and political. It attempts to analyse the definitional problem of what and why tactical nuclear weapons matter for both deterrence theory and arms control. It also traces the post-Cold War trajectory, from the 1991

initiatives to the gradual erosion of the informal regime they created. It analyses contemporary shifts that led to the resurgence of tactical nuclear weapons, focusing on Russia's evolving nuclear doctrine, China's build-up, and the United States' response. The strategic consequences of normalising lower-yield nuclear options, particularly the lowering of the use threshold and the implications for global nuclear order and the prospects for renewed restraint, are also thrown into light.

The core argument is that the revival of tactical nuclear weapons is more than just a modernisation effort; it represents a profound shift in military doctrine with global repercussions. When nations build, deploy, and threaten to use low-yield nuclear weapons, they fundamentally alter deterrence strategies, ultimately increasing the risk of escalation. The erosion of the taboo against nuclear warfighting, even at the lower end of the yield spectrum, is the most consequential development in nuclear security since the end of the Cold War.

The Definitional Problem

The definitional ambiguity surrounding tactical nuclear weapons is not accidental but a functional complexity that carries immense political and legal consequences. The most commonly cited distinction between tactical and strategic nuclear weapons rests on three variables: range, yield, and intended mission. In the US-Soviet context, tactical weapons were broadly understood as those with ranges below 500 km for land-based systems and below 600 km for air- and sea-launched platforms, typically with yields in the sub-kiloton to low tens of kilotons range and intended for battlefield or theatre-level operations rather than attacks on an adversary's homeland.[3]

The definitional problem arises because none of these distinctions is technically stable. A weapon's yield can often be varied by selectively using its fissile stages. The same delivery platform may be capable of carrying either a conventional or nuclear warhead, a dual capability, which generates its own category of strategic instability.[4] France has long classified all its nuclear weapons as strategic regardless of range, on the basis that any nuclear use is strategic in effect.[5] China's classification of certain intermediate-range systems as strategic diverges from the US-Russian framework that would categorise

them as tactical.[6] North Korea's diversifying arsenal challenges both frameworks simultaneously.[7]

The practical consequence is that there exists no agreed international definition of tactical nuclear weapons, and therefore no agreed legal regime governing them. The Strategic Arms Reduction Treaties, from START I through to New START, covered intercontinental ballistic missiles, submarine-launched ballistic missiles, and heavy bombers: the classic strategic triad. Shorter-range systems, dual-capable aircraft, sea-launched cruise missiles, and land-based theatre weapons were deliberately excluded, both because verification was considered too difficult and because neither side was willing to constrain a category of weapons it regarded as militarily essential.[8]

This regulatory gap has grown more consequential as the weapons within it have multiplied. When New START expired in February 2026 without renewal, the last binding numerical constraint on US and Russian nuclear forces collapsed entirely. Outside the bilateral US-Russia framework, there has never been a multilateral instrument covering tactical nuclear weapons.[9] The NPT imposes no category-specific limits on the weapons of recognised nuclear-weapon states, and the Treaty on the Prohibition of Nuclear Weapons, while prohibiting all nuclear weapons for its signatories, has been rejected by every nuclear-armed state and their close allies.[10] Tactical nuclear weapons thus sit in a legal and regulatory vacuum that is matched by conceptual confusion about their role, risking precisely the catastrophic norm erosion that generations of arms control efforts sought to prevent.

From the 1991 Initiatives to Regime Decay

The optimism generated by the 1991 Presidential Nuclear Initiatives was substantial. In September 1991, President George H.W. Bush announced the withdrawal of all US ground-launched tactical nuclear weapons worldwide, the removal of nuclear weapons from surface ships and attack submarines, and the stand-down of strategic bombers from continuous alert. Mikhail Gorbachev responded with parallel measures the following month, including commitments to withdraw and eliminate large categories of shorter-range weapons.[11] The measures were unilateral rather than legally binding and lacked

formal verification mechanisms, yet they achieved a genuine reduction: thousands of warheads were removed from forward deployment on both sides.

Yet the informality that made the 1991 initiatives politically achievable became a structural vulnerability. Without verification, neither side could confirm what the other had actually done. Considerable uncertainty remained about Russian implementation, particularly regarding the disposition of sub-strategic warheads in centralised storage.[12] More fundamentally, the initiatives created no legal obligation. They could be reversed by executive decision without treaty amendment, and the political conditions that had generated them were themselves reversible.

Those conditions began to reverse from the mid-1990s. NATO's expansion eastward, the wars in Yugoslavia, and the perceived deterioration of Russia's conventional forces combined to produce a reassessment in Moscow. Russian military thinking began to emphasise the compensatory role of nuclear weapons in offsetting conventional inferiority, a concept that acquired the shorthand label of ‘escalate to de-escalate,’ though Russian strategists often disputed whether that phrase accurately captured the doctrine's intent.[13] Whatever the precise formulation, the underlying logic was clear: tactical nuclear weapons were being repositioned as instruments that could plausibly be employed in a conventional conflict that was going badly for Russia, either to signal resolve, to achieve military effect, or to compel an adversary to halt operations.

The 2000 Russian Military Doctrine formalised the shift by providing for nuclear use in response to large-scale conventional aggression when the existence of the state was at stake. Subsequent revisions, including those in 2010 and 2014, refined the threshold formulations but retained the essential logic.[14] The practical implication was that Russia was developing and retaining a far larger sub-strategic arsenal than the 1991 initiatives had envisaged, while simultaneously using that arsenal as an instrument of coercive diplomacy.

On the American side, the trajectory was different but equally revealing. The 2018 Nuclear Posture Review, responding partly to Russian behaviour and partly to internal debates about deterrence adequacy, introduced two new low-yield capabilities: the W76-2 low-yield warhead for the Trident II D5 submarine-launched ballistic missile and a proposed

nuclear-armed sea-launched cruise missile. The stated rationale was that credible deterrence required the ability to respond to limited nuclear use with proportionate options, not just the prospect of massive retaliation.[15] Critics argued that introducing new lower-yield options in fact lowered the threshold for American first use and incentivised adversaries to take calculated nuclear risks.[16]

Contemporary Drivers of Resurgence

Russia: Doctrine, Ukraine, and Nuclear Signalling

Russia's invasion of Ukraine in February 2022 transformed the theoretical debate about tactical nuclear weapons into an immediate policy crisis. From the opening weeks of the conflict, Russian officials at the highest levels made explicit or strongly implied references to nuclear options, calibrated to deter Western military intervention.[17] President Putin placed Russia's nuclear forces on ‘special combat readiness’ in late February 2022, a formulation without a clear precedent in post-Cold War nuclear management.[18] Subsequent months brought a rhythm of nuclear signalling: references to specific weapons systems, exercises involving dual-capable platforms, and statements by senior officials characterising the conflict as existential in terms that tracked the declared threshold for nuclear use.

The November 2024 revision of Russia's nuclear doctrine lowered the declared threshold further. The updated document extended the conditions under which Russia would consider nuclear use to include conventional attacks supported by a nuclear-armed state, effectively expanding the scenarios in which tactical nuclear use might be contemplated.[19] The deployment of tactical nuclear weapons to Belarus, announced in 2023, extended the geographic reach of Russia's sub-strategic posture into NATO's immediate neighbourhood.[20] Whether these moves represented genuine doctrinal change or sophisticated coercive communication remains debated, but their effect on Western deterrence calculations and defence planning was substantial and concrete.

Russia's tactical nuclear arsenal is the largest in the world. Estimates place it at approximately 1,550 to 2,000 warheads across a range of delivery systems, including the

Iskander-M short-range ballistic missile, the Iskander-K ground-launched cruise missile, sea-launched cruise missiles of various types, and air-delivered weapons carried by aircraft such as the Su-24 and Su-34.[21] Many of these systems are dual-capable, meaning that in a crisis, an adversary cannot know with confidence whether an incoming Iskander is carrying a conventional or nuclear payload, a feature that compresses decision timelines and generates escalation risk independent of any explicit nuclear communication.

China: An Evolving Posture

China's nuclear posture has historically been characterised by a small, recessed deterrent maintained under a declared no-first-use policy, relying on assured retaliation rather than warfighting options. That posture is undergoing a fundamental revision. The People's Liberation Army is expanding its nuclear forces at a pace that has surprised Western intelligence assessments, with projections suggesting China could possess 1,000 or more warheads by 2030.[22] The expansion encompasses not only intercontinental systems but also intermediate-range platforms such as the DF-26, which is dual-capable and can reach US bases in the Indo-Pacific, and shorter-range systems with potential sub-strategic roles.

China has not formally revised its no-first-use declaration, but its military modernisation has produced capabilities that are difficult to reconcile with a purely retaliatory posture.[23] The development of a nuclear-capable hypersonic glide vehicle, the DF-17, the rapid expansion of silo fields in Xinjiang and Gansu, and the establishment of a nuclear-capable surface fleet all suggest a posture evolving toward warfighting capability, even if official doctrine has not explicitly acknowledged the shift.[24] For regional powers including India, the ambiguity of China's lower-yield delivery options presents a specific deterrence challenge that conventional force planning cannot fully address.

North Korea and the Sub-Strategic Turn

North Korea's nuclear programme has always been designed primarily for strategic deterrence of the United States and regime survival, but since 2019 it has accelerated a systematic development of shorter-range, lower-yield delivery systems that suggest an

emerging sub-strategic capability. The KN-23, KN-24, and KN-25 systems are short-range ballistic missiles and multiple-launch rocket systems that can reach targets throughout South Korea and Japan.[25] Kim Jong-un has stated publicly that tactical nuclear weapons are intended for use on the battlefield, and North Korea's 2022 nuclear use law formalised conditions under which sub-strategic options could be employed, including in response to non-nuclear threats to leadership survival.[26]

The North Korean case illustrates a broader proliferation dynamic: states facing existential conventional inferiority are developing tactical nuclear options not as supplements to a larger arsenal but as central instruments of deterrence. The logic that larger nuclear powers long applied to compensate for conventional weakness is now being replicated by smaller nuclear states, with potentially more dangerous results given shorter decision timelines, less developed command and control, and more volatile political leadership environments.[27]

The American Response and Its Dilemmas

The United States faces a structural tension in its response to the tactical nuclear resurgence. On the one hand, the logic of extended deterrence requires credible options across the full spectrum of potential nuclear use by adversaries. If an adversary calculates that the United States would not respond to limited nuclear use with nuclear force for fear of uncontrolled escalation, the credibility of the entire deterrence architecture erodes.[28] On the other hand, developing and deploying additional lower-yield options risks confirming exactly the logic that makes such weapons dangerous: that nuclear weapons can be used in a limited, controlled way for discrete military purposes.

The W76-2, deployed on Trident submarines from 2020, was the first new US nuclear weapon deployed since the Cold War. Its existence was justified as a means of closing what some analysts called a ‘deterrence gap’ created by Russian low-yield options and doctrinal flexibility.[29] Critics, including many former senior officials, argued that the deployment in fact made nuclear use more thinkable rather than less by providing a lower rung on the escalation ladder that commanders and policymakers might be tempted to use.[30] The Biden administration's 2022 Nuclear Posture Review retained the W76-2 while

declining to pursue the nuclear-armed sea-launched cruise missile, a compromise that satisfied neither those who wanted maximum flexibility nor those who sought to resist sub-strategic proliferation.

Lowering the Threshold: Doctrinal and Strategic Consequences

The Usability Illusion

The central strategic danger of tactical nuclear weapons is the proposition that they are more usable than strategic weapons and that this usability makes them more valuable for deterrence. Both elements of this proposition deserve scrutiny. The claim that lower-yield weapons produce more controllable effects is technically true within narrow parameters: a 5-kiloton weapon detonated over an isolated military target produces a smaller immediate blast radius than a 150-kiloton weapon.[31] But nuclear weapons of any yield produce effects that extend well beyond the immediate blast: electromagnetic pulse, radioactive fallout, fires, and above all, the psychological and political effects of crossing the nuclear use threshold for the first time since 1945.[32]

The Council on Strategic Risks analysis of tactical nuclear weapons use scenarios identifies three principal pathways: use against a facility, use against military forces in the field, and demonstration detonation.[33] In each case, the analysis finds that the distinction between tactical and strategic effects dissolves in practice. A tactical nuclear strike would "fundamentally change the scope of a battle," as US Joint Chiefs guidance acknowledges, generating political and escalatory pressures that no targeting calculation can fully anticipate.[34] The assumption that an adversary will interpret a tactical strike as a signal of limited aims rather than as an act of war requiring full-spectrum retaliation is precisely that: an assumption, untested in any actual conflict, and contradicted by the history of nuclear crises in which both sides consistently overestimated the other's willingness to interpret communications as intended.

The usability argument is further weakened by the dual-capability problem. When a sub-strategic delivery system can carry either a conventional or a nuclear warhead, a defending state cannot confirm the nature of an incoming weapon until detonation. This

creates pressure to respond to any ambiguous tactical strike with nuclear options, on the grounds that waiting for confirmation may be too late. The resulting dynamic is one in which the mere existence of tactical nuclear weapons in a crisis increases the probability of nuclear use beyond any specific decision to employ them.[35]

Escalate to De-escalate: Logic and Critique

The Russian concept of using limited nuclear strikes to halt a losing conventional conflict and compel an adversary to negotiate from a position of fear has attracted extensive analytical attention. The underlying theory of victory is that a state facing conventional defeat can use a demonstrative or limited nuclear strike to signal resolve, raise the costs of continued conflict for the adversary, and create space for a ceasefire on acceptable terms.[36] This logic treats nuclear weapons as instruments of coercive bargaining rather than of physical destruction, and it assigns to the adversary a rational, proportionate response that may not materialise.

The critique of escalating to de-escalate is substantial. First, it assumes the adversary will interpret the nuclear strike as a signal of limited intent rather than as the opening of a general nuclear exchange, but there is no reliable mechanism for communicating that distinction in the extreme duress of a conflict in which nuclear weapons have already been used.[37] Second, domestic political pressures in the state that has been attacked may make de-escalation extremely difficult, regardless of the strategic logic: leaders who respond with restraint to nuclear attack face severe legitimacy costs.[38] Third, the logic creates its own proliferation incentive: if the credibility of nuclear coercion depends on the adversary believing the weapons might actually be used, then demonstrating that belief requires actions that themselves risk triggering the escalation the strategy is supposed to prevent.

The May 2025 India-Pakistan crisis provided a contemporary illustration of how quickly sub-strategic nuclear signalling can generate escalatory pressure.[39] Both states possess shorter-range nuclear-capable delivery systems, and the crisis produced the kind of compressed decision timelines and disinformation environment that the tactical nuclear

use literature identifies as escalation accelerants. The crisis passed without nuclear use, but the structural conditions that make such crises dangerous have not changed.

Command, Control, and the Dispersion Problem

One of the most dangerous features of tactical nuclear weapons is that their intended battlefield role requires a degree of dispersion and pre-delegation of launch authority that is fundamentally in tension with the centralised command and control that makes nuclear weapons safe. Strategic nuclear weapons are typically maintained under tight central control, with complex authorisation procedures designed to prevent unauthorised use. Tactical nuclear weapons, if they are to be available for battlefield use on short timelines, require some degree of pre-delegation to lower-level commanders.[40]

The dangers are compounded in regional contexts. India and Pakistan both possess sub-strategic nuclear delivery systems and have developing command and control structures that, while improving, are less mature than those of the established nuclear powers. North Korea's command and control is both highly centralised and highly vulnerable to decapitation, creating pressure for pre-delegation precisely in the crisis scenarios where the risks are greatest.[41] The smaller the arsenal and the less secure the political environment, the greater the danger that tactical nuclear weapons will be used through miscalculation, misperception, or command dysfunction rather than deliberate decision.

Implications for Global Nuclear Order

The Erosion of the Non-Use Norm

Perhaps the most consequential long-term effect of the tactical nuclear resurgence is its impact on what scholars have called the nuclear taboo: the accumulated normative inhibition against nuclear use that has held since Nagasaki in 1945.[42] The taboo is not a legal prohibition; no treaty forbids nuclear use by nuclear-armed states in all circumstances. It is rather a shared understanding, reinforced by decades of practice, that nuclear weapons occupy a qualitatively distinct category from conventional weapons and that their use is categorically different from conventional warfare.

Tactical nuclear weapons, by virtue of being designed for battlefield use and described in military doctrines as options for discrete military tasks, challenge this categorical distinction. When states publicly articulate conditions under which lower-yield nuclear use would be contemplated, when they develop and test delivery systems specifically optimised for sub-strategic missions, and when they signal the possible use of such weapons in live conflict contexts, they are engaged in a gradual normalisation of nuclear warfighting that erodes the taboo without formally abandoning it.[43]

The normative erosion is cumulative and asymmetric. Each state that moves toward a more flexible nuclear posture provides justification for others to do the same.[44] The 2018 US Nuclear Posture Review's introduction of new low-yield options was explicitly justified partly as a response to Russian tactical nuclear expansion; Russian expansion had itself been justified partly as a response to NATO conventional superiority and missile defence. The action-reaction dynamic in tactical nuclear postures mirrors the classic arms race logic, but with the additional danger that each iteration moves the overall system closer to a point at which the non-use norm can no longer bear the weight placed on it.

Arms Control Prospects

The prospects for formal arms control of tactical nuclear weapons remain poor. The fundamental obstacles are technical, political, and strategic. Technically, verification of sub-strategic warheads is extremely difficult: unlike intercontinental ballistic missiles, which are large, expensive, and maintained in identifiable facilities, tactical warheads can be stored in central facilities and deployed rapidly without observable preparation.[45] Politically, no nuclear-armed state has shown willingness to accept constraints on its sub-strategic forces in the current environment. Russia has explicitly linked any discussion of tactical weapons to US forward-deployed systems in Europe, while also demanding limits on missile defence and conventional precision-strike capabilities.[46] China has refused any nuclear arms control discussions until the US and Russian arsenals are reduced to comparable levels.[47]

Informal measures short of formal treaties offer more realistic near-term possibilities. The 1991 Presidential Nuclear Initiatives demonstrated that unilateral parallel declarations

could achieve significant reductions when political conditions were favourable. Renewed transparency measures; hotlines and crisis communication channels specifically designed for sub-strategic contexts; and mutual declarations of restraint in specific regions or scenarios could reduce escalation risk even without formal verification.[48] The challenge is that the political conditions that made the 1991 initiatives possible, including a moment of genuine partnership between Washington and Moscow after the Cold War's end, do not exist in 2026 and show no signs of returning in the near term.

Regional Architectures and Extended Deterrence

The tactical nuclear resurgence has placed particular strain on extended deterrence commitments. NATO's burden-sharing arrangements, under which US nuclear weapons are forward-deployed in five European states and deliverable by allied aircraft, face pressure both from within the Alliance, where doubts about credibility have resurfaced, and from Russia, whose tactical arsenal and doctrine are designed in part to create decoupling between European allies and the US strategic deterrent.[49]

In Asia, extended deterrence faces different but equally serious challenges. US assurances to Japan and South Korea rest partly on the credibility of nuclear options, but neither country hosts forward-deployed US nuclear weapons, and both have populations with strong anti-nuclear sentiments that constrain policy options. The combination of North Korean tactical nuclear development and Chinese strategic expansion has generated serious debate in both Japan and South Korea about whether extended deterrence commitments remain credible and about whether indigenous nuclear capabilities should be reconsidered.[50]

For South Asia, the tactical nuclear dimension is particularly acute. Pakistan has explicitly developed sub-strategic capabilities, including the Nasr short-range ballistic missile, to address Indian conventional superiority under the Cold Start doctrine.[51] India's declared nuclear doctrine of no-first-use and massive retaliation sits uneasily with the reality of Pakistani tactical nuclear options: if Pakistan used a Nasr against Indian forces crossing the border, India's choice between massive retaliation, which would trigger Pakistan's strategic arsenal, and non-retaliation, which would validate nuclear coercion, presents a

genuine doctrinal dilemma.[52] The trilemma involving China, India, and Pakistan means that any development in one leg of the triangle affects the stability of the others.

Conclusion

Tactical nuclear weapons are dangerous not primarily because of the physical destruction they can cause, though that destruction is real and far-reaching even at lower yields, but because of what their existence and use would mean for the international order that has kept nuclear weapons out of active conflict for eight decades. Every step toward normalising sub-strategic nuclear warfighting, from doctrinal revision to capability development to signalling in live conflicts, moves the global nuclear system toward a threshold that, once crossed, cannot easily be recrossed.

The argument made by proponents of new tactical nuclear capabilities, that flexible lower-yield options strengthen deterrence by making threats more credible, rests on an empirically fragile foundation. It assumes adversaries will interpret limited nuclear use as a signal rather than an act of war, that escalation can be controlled once the nuclear threshold is crossed, and that the introduction of new sub-strategic options will not generate matching investments by adversaries. None of these assumptions is warranted by historical evidence or by the logic of nuclear crises, which have consistently shown that miscalculation, misperception, and the compression of decision timelines make controlled escalation an aspiration rather than a strategy.[53]

The path back from this edge is not obvious. Formal arms control of tactical nuclear weapons faces obstacles that are unlikely to be overcome in the current geopolitical environment. But the alternative, continued competitive development of sub-strategic capabilities accompanied by escalating doctrinal flexibility and normalised nuclear signalling, is a trajectory with a discernible destination. Reducing the risk requires, at minimum, sustained attention to crisis communication mechanisms; renewed investment in verification technology that might eventually make sub-strategic arms control feasible; and, above all, a collective political decision among nuclear-armed states that the short-term deterrence advantages of tactical nuclear flexibility are not worth the long-term

systemic risk of treating nuclear weapons as battlefield tools.[54] That decision has not yet been made, and the window for making it may be narrowing.

Declaration

I declare that this manuscript is being submitted exclusively to CENJOWS for publication consideration, is original, and has not been published or submitted elsewhere. I further certify that it contains no classified, restricted, or sensitive information and is based entirely on open-source material suitable for publication in the public domain.

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