



A Call to Arms: Kim Jong Un and the Tactical Bomb

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A Call to Arms: Kim Jong Un and the Tactical Bomb

Having declared his nuclear deterrent “complete” following the testing of three intercontinental-range ballistic missiles (ICBMs) and a thermo-nuclear device in 2017, North Korean leader Kim Jong Un has been overseeing a period of qualitative nuclear modernization and quantitative force expansion. North Korea’s nuclear forces continued to grow during the short-lived period of diplomacy with South Korea and the United States in 2018 and 2019. In January 2021, in reviewing the accomplishments of the five-year period following North Korea’s Seventh Party Congress in 2016, Kim alluded to “tactical nuclear weapons” among other significant accomplishments concerning his nuclear forces during that era. This was a notable statement. Traditionally, North Korea has referred to its nuclear capabilities euphemistically as “strategic” weapons. When references to tactical nuclear weapons (TNW) would appear in state media, they would reference US nuclear capabilities; North Korea has never acknowledged that the United States withdrew its last nuclear weapons from the Korean Peninsula in December 1991.

Does Kim Jong Un intend to deploy tactical nuclear weapons? If so, how might these weapons manifest in the country’s existing nuclear forces and what challenges may arise for the United States and South Korea? This article examines North Korean claims to date concerning TNWs, explores the practical implications of these capabilities for Pyongyang’s strategy, and argues that these weapons are likely to be a component of the country’s growing nuclear force.

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The introduction of TNWs into North Korea's nuclear forces will have serious implications for escalation management on the Korean Peninsula and amplify the risk of nuclear use in a future conflict.

What Are Tactical Nuclear Weapons?

Because there is no standardized or international consensus definition of a “tactical nuclear weapon,” assessing Kim Jong Un's claims in early 2021 requires contextualizing what such a capability might mean for North Korea's nuclear forces. In other countries, these weapons—and their effects—are sometimes referred to as “nonstrategic” or “sub-strategic” nuclear weapons.

These definitions are often blurred. For instance, the United Kingdom's 1998 Strategic Defense Review defined a “sub-strategic” role for its Trident submarine-launched ballistic missiles in the form of a “limited strike that would not automatically lead to a full scale nuclear exchange”—presumably through the use of a lower yield.¹ In 2021, the UK Ministry of Defense noted that “none of the United Kingdom's nuclear weapons are designed for tactical use during conflict,” highlighting a gap in at least one country's view of “sub-strategic” and “tactical” effects.² The United States' 2019 *Nuclear Posture Review* interchangeably uses the terms “non-strategic,” “theater,” and “tactical” to describe these capabilities.³ The US Department of Defense's Dictionary of Military terms suggests that the tactical use of nuclear weapons refers to the “use of nuclear weapons by land, sea, or air forces against opposing forces, supporting installations or facilities, in support of operations that contribute to the accomplishment of a military mission of limited scope, or in support of the military commander's scheme of maneuver, usually limited to the area of military operations.”⁴ The Russian Federation distinguishes between non-strategic and tactical nuclear weapons, defining the latter as a subset of the former—specifically, nuclear systems that “are designed to engage objects in the tactical depth of enemy deployment (up to 300 km) to accomplish a tactical mission.”⁵ In the US-Russia context, the threshold delineating a strategic system was mutually understood to be any system “capable of ranges in excess of the shortest distance between the northeastern border of the continental United States and the northwestern border of the continental USSR,” as first noted in the SALT I Interim Agreement.⁶ Shorter-range systems, thus, were often understood by both countries to have a tactical, or warfighting, role. Elsewhere, Gen. Khalid Kidwai, a former director of Pakistan's Strategic Plans Division, has described his country's pursuit of “short range, low yield nuclear weapons, also dubbed tactical nuclear weapons.”⁷ The above definitions underscore several relevant parameters that might

define a TNW: deliberately reduced explosive yield, limited range, and perceived limited escalatory potential following use.

Another parameter concerns the delegation of use authority, which was particularly salient in early Cold War US thinking on nuclear use.⁸ US President Dwight Eisenhower once said of tactical nuclear weapons that “on strictly military targets and for strictly military purposes, I see no reason why they shouldn’t be used just exactly as you would use a bullet or anything else.”⁹ Eisenhower would go on to issue guidance to military commanders on the predelegation of nuclear use. Other countries see a similar delineation separating the tactical from the strategic. France, for instance, has reasoned that *strategic* nuclear weapons are those “whose use or threat of use only the highest authority of the State can resort, conceptually and structurally.”¹⁰

Prior to Kim Jong Un’s January 2021 statements on tactical nuclear weapons, Pyongyang appeared to take this approach to all its available nuclear weapons. Not only did Pyongyang treat its nuclear weapons as “strategic” capabilities, but a 2013 law adopted by the country’s Supreme People’s Assembly, codifying North Korea’s status as a nuclear weapons state, noted that “[t]he nuclear weapons of the DPRK can be used only by a final order of the Supreme Commander of the Korean People’s Army” (KPA), one of the many positions held by Kim Jong Un.¹¹ The 2013 law—a significant milestone in Kim Jong Un’s early power consolidation after coming to power in the final days of 2011—is unequivocal that all North Korean nuclear weapons can only be released at the behest of the KPA supreme commander. Despite this, the introduction of TNWs may create incentives for North Korea to consider alternative command-and-control arrangements to allow for the rapid generation of these forces.

Tactical nuclear weapons may create incentives for alternative command-and-control arrangements

Does North Korea Already Have Tactical Nuclear Weapons?

North Korea’s Eighth Party Congress convened in early January 2021. During Kim Jong Un’s leadership tenure, these events have adopted the prominence they once held under the early tenure of Kim Il Sung (through 1980). Kim’s father, Kim Jong Il, eschewed party congresses, which left a 36-year gap between the Sixth Party Congress, held in 1980, and the Seventh, held in 2016. North Korea’s party congresses have had wide-ranging agendas, covering

ideological, economic, and military matters. Between January 5–7, 2021, Kim Jong Un, in his capacities as the chairman of the ruling Workers' Party of Korea (WPK) and chairman of the State Affairs Commission of North Korea, reported on the economic and military achievements since the last party congress and laid out objectives for the future.

Speaking in the past tense, Kim, according to an official state media summary of his report, noted that “the already accumulated nuclear technology underwent a rapid development to minimize and standardize nuclear weapons and make them tactical ones and complete the development of a super-large hydrogen bomb.”¹² Later in his report, when addressing the testing of a new North Korean short-range ballistic missile system—what he referred to as a “super-large MLRS [Multiple Launch Rocket System]”—Kim said that the system’s testing was “followed by the development of ultra-modern tactical nuclear weapons including new type tactical rockets and intermediate-range cruise missiles with the most powerful warheads in the world.”

These statements marked the most authoritative claims to date concerning the realization of a North Korean tactical nuclear capability. Kim’s discussion of these capabilities in the context of achievements of the last party congress period meant that tactical nuclear weapons were not a future plan, but something that had already been realized over the course of North Korea’s nuclear testing and development campaigns from October 2006 to September 2017. Past North Korean statements concerning these tests have underscored the objective of developing increasingly compact, ballistic missile-mateable nuclear physics packages and higher-yield nuclear weapons (notably, in the case of the January 2016 and September 2017 tests).

Similarly, North Korea’s testing of new, short-range ballistic and quasi-ballistic missile systems in 2019 and 2020 has not been accompanied by language explicitly noting a nuclear delivery role. In many cases, these systems have been described as “tactical guided weapon[s],”¹³ with their internal North Korean designators left ambiguous. That same phrase—“tactical guided weapon”—had been used earlier in Kim Jong Un’s tenure to describe North Korea’s non-nuclear variant of the Soviet-origin OTR-21 *Tochka*, the KN02/Hwasong-11 *Toksa*, a close-range ballistic missile.¹⁴ The “super-large MLRS” Kim referenced was tested for the first time in 2019.

At the time, however, North Korean statements concerning this new system did not explicitly suggest a nuclear delivery role.¹⁵ At the Eighth Party Congress, Kim indicated that “new type tactical rockets”—presumably the systems known to the US intelligence community as the KN23 and KN24—and new “intermediate-range cruise missiles” may serve as delivery systems for tactical nuclear weapons.

Apart from reviewing progress in tactical nuclear weapons development during the Seventh Party Congress era (2016–21), Kim also used his report to the Eighth Party Congress to underscore a wide-ranging set of nuclear and military modernization goals. He alluded to better nuclear warheads, multiple reentry vehicles (MRVs; “multi-warhead rocket,” per Kim), hypersonic “gliding flight warheads,” “new type ballistic rockets,” unmanned combat aerial vehicles (UCAVs), and military reconnaissance satellites, among other goals. With regard to MRVs and potential hypersonic gliders, Kim indicated that “preparations for their test and production” were underway. He further indicated that North Korea had completed studies into designing a nuclear-powered submarine. Tactical nuclear weapons were notably not mentioned in the context of these modernization goals, further underscoring that North Korea may have already developed these capabilities.

North Korea may have already developed tactical nuclear weapon capabilities

How Might North Korea Use Tactical Nuclear Weapons?

North Korea today seeks to deter a conventionally superior, territorially contiguous US-South Korea alliance from taking any adverse action against its interests, up to and including a massive campaign to forcibly remove the Kim regime from power. Based on observed operational exercises and authoritative doctrinal statements, Pyongyang reserves the right to use nuclear weapons first if deterrence fails, with the primary objective of degrading a joint US-South Korean campaign against its territory by striking a range of military targets on the Korean Peninsula and in Japan, where the United States also bases forces.¹⁶

North Korea would likely use many of the theater-range nuclear capabilities in its inventory to achieve these objectives while retaining its relatively small and minimally tested ICBM force in reserve to then threaten retaliation against the US homeland to deter nuclear retaliation in kind by the United States. If it did not expend the full array of its theater-range nuclear delivery systems in an initial strike, North Korea may also hold major population centers in South Korea and Japan at risk. In doing so, Pyongyang might hope to politically “decouple” the United States from its allies and terminate a conflict while preserving its regime.¹⁷

In broad terms, North Korea has adopted an asymmetric escalation nuclear posture, defined as a posture “explicitly designed to deter conventional attacks by enabling a state to respond with rapid, asymmetric escalation to first use of nuclear weapons against military and/or civilian targets.”¹⁸ This posture entails

numerous risks for North Korea, but it also presents a means-ends rational approach to meeting the country's national defense needs under existing resource constraints.¹⁹ For Kim Jong Un, whose overarching objective in a crisis will be to ensure his own survival, the bet on offer by creating unlimited stakes is to forgo nuclear use and face certain loss at the hands of the United States and South Korea, or to cross the nuclear threshold early and generate a chance—however small—of terminating the conflict on favorable terms and surviving. TNWs, if developed and deployed in North Korea, could augment Kim's strategy in important ways while introducing new challenges for his adversaries.

Tactical nuclear weapons could augment Kim's strategy in important ways

Given the definitional ambiguities associated with understanding TNWs, however, it is possible that Kim's January 2021 remarks simply marked a terminological shift in how Pyongyang understands its existing forces. For instance, the suite of nuclear-capable SCUD variants, the *Nodong*, newer, solid-propellant *Pukguksong-2s*, and the intermediate-range *Hwasong-12s* that formed the backbone of North Korea's known theater-range nuclear delivery systems—those that would

be employed early in a conflict—may be recast as “tactical” systems if Pyongyang sees their role as fundamentally for degrading offensive military capabilities available to its adversaries. By holding at risk US, South Korean, and Japanese military targets, North Korea could recast these systems as tools of nuclear warfighting, designed to degrade and defeat any attempt at a conventional invasion of its territory. In this scenario, the incorporation of TNWs would be done by fiat, requiring no further programmatic research, development, testing, or evaluation beyond what had already been completed by 2017. The remaining systems—primarily ICBMs, but also potentially North Korea's small SLBM force—could then be recast as “strategic” systems intended for countervalue use against the US homeland and South Korean and Japanese population centers. In substantive terms, this would represent little in terms of operational changes. Newer short-range TNW systems could be incorporated into the existing force, but the distinction between “tactical” and “strategic” would be largely semantic.

This approach, however, is unsatisfying—particularly given Kim's association at the Eighth Party Congress of TNWs, specifically with the new “super-large MLRS,” new tactical rockets, and a new intermediate-range cruise missile. The state media paraphrase of Kim's description of the achievements of the Seventh Party Congress also underscored that medium-range missiles, alongside ICBMs, constituted a “strong and reliable strategic deterrent.” Kim's primary concern through November 2017 appears to have been the completion of his

“strategic” deterrent in the form of realizing a rudimentary ICBM capability. With that task having been successfully completed and the subsequent quantitative expansion since 2017, North Korea may have been seeking all-new nuclear weapons designs and potentially even renewed nuclear testing to support the pursuit of new weapons systems, including possibly introducing meaningfully new TNW capabilities into its arsenal over the last few years.

Will North Korea Conduct More Nuclear Tests?

If North Korea seeks lower-yield warheads for its short-range systems, it may seek to carry out additional nuclear testing. Although this is far from certain, further nuclear testing cannot be ruled out. In April 2018, ahead of his summit meetings with South Korean President Moon Jae-in and US President Donald J. Trump, Kim adopted a self-imposed moratorium on long-range missile testing and nuclear testing. In May 2019, North Korea, in the presence of some international reporters, destroyed the tunnel entrances to parts of the Punggye-ri nuclear test site—the country’s sole known nuclear test site. After the failed February 2019 Hanoi summit, Kim repudiated this moratorium explicitly at the Fifth Plenum of the Seventh Central Committee of the Workers’ Party of Korea in December 2019.²⁰ Despite its superficial dismantlement of parts of the Punggye-ri site, it is likely that North Korea could reconstitute this site for renewed nuclear testing in a relatively short amount of time.²¹ Testing could also take place at an alternative, as-yet-unknown test site.

Between 2006 and 2017, North Korea has been highly selective about its decision to proceed with nuclear testing, recognizing that each test would invite significant international condemnation—including from its regional partners, China and Russia. As Japanese political scientist Narushige Michishita has argued, North Korea has crossed significant technical milestones in its pursuit of a robust missile and nuclear capability over the course of multiple, discrete “military-diplomatic campaigns.”²² This trend has held through the last major bout of strategic weapons development in the country between 2013 and 2017. The decision to resume testing would thus be sensitive not only to technical objectives, but to Pyongyang’s broader diplomatic and national security strategy. The country’s renewed rapprochement with Beijing after a relatively cool period in bilateral ties between 2014 and 2017—accelerated after the failed US-North Korea February 2019 Hanoi summit—may particularly moderate any interest in additional nuclear testing.²³ However, the disappointing outcome for Kim in Hanoi also led to a policy review of sorts in North Korea, resulting in a broader emphasis of self-reliance in national defense and an expectation that international sanctions would likely persist in the long run. Pyongyang’s subsequent actions in early 2020 and beyond to cope with the effects of the

COVID-19 pandemic accelerated this autarkic turn and have engendered a form of economic isolation previously unseen in North Korea.

Testing may not be absolutely necessary. For instance, it is possible that North Korea could already have developed and manufactured untested nuclear weapons designed to be accommodated atop smaller diameter delivery systems than its known nuclear-capable systems. Even if North Korea should determine that it requires especially lower-yield nuclear weapons for smaller diameter delivery systems, the need to return to nuclear testing is not absolutely necessary. A potentially appealing alternative in the absence of testing would be to pursue a rudimentary “gun-type” nuclear physics package, of the sort used in the *Little Boy* bomb by the United States against Japan in 1945. The relative simplicity

Returning to nuclear testing is not absolutely necessary

of the “gun-type” design grants a considerable advantage in the lack of a need to test (the *Little Boy* design did not undergo a full-scale nuclear explosive test²⁴), but it also introduces a particularly significant drawback: weapons of this type are generally highly inefficient in their use of fissile material—specifically, highly enriched uranium (HEU) as plutonium (Pu-239), is not suitable. In the context of

Pakistan, which also deploys TNWs, analysts have drawn attention to the possibility of a gun-type design for the *Hatf-IX Nasr* nuclear-capable close-range ballistic missile (CRBM)—a system with a mere 70-kilometer range—but also note that Pakistan’s own fissile material constraints may render this option less likely.²⁵

North Korea has long faced acute fissile material constraints, but its continued enrichment of domestically mined uranium could significantly increase the near-term availability of fissile material (HEU) for potential TNW applications. Indeed, the open contemplation of TNWs by Kim may indicate that Pyongyang perceives its existing and anticipated near-future HEU stocks to be sufficient for both its desired number of strategic warheads and their tactical counterparts. US intelligence estimates as of 2019 suggested that North Korea was accruing enough fissile material for 12 nuclear warheads annually.²⁶ But even if HEU stocks today are greater than in the past, no nuclear state today is known to maintain gun-type nuclear weapons given the inefficiencies associated with the design. There is little reason to expect that North Korea might buck this trend.

Over time, as North Korea’s uranium enrichment complex has grown, plutonium in particular appears to be a greater constraint as an input into the country’s nuclear weapons. The reprocessing of spent fuel rods from the 5 MW(e) gas-graphite reactor at Yongbyon remains the sole source of plutonium for nuclear weapons in North Korea. This reactor, which first reached criticality in 1986,

may be nearing the end of its life. Kim Jong Un offered to dismantle the reactor, alongside other facilities related to plutonium and HEU production at Yongbyon, at the February 2019 Hanoi Summit with US President Donald Trump. While fissile material constraints are likely still a factor for Pyongyang, despite advances, it is unlikely that the availability of material stocks will be the determining factor in whether or not North Korea will choose to return to nuclear testing. Political and diplomatic factors are likely to be more significant.

The other alternative for small-diameter tactical nuclear weapons designed—a plutonium-based linear implosion bomb—thus appears to be an unlikely choice for Pyongyang. The linear implosion design has been used in especially small nuclear weapons, including the exceptionally low-yield (70-100 tons TNT equivalent) US W48 nuclear artillery shell, which weighed just 54 kilograms with a diameter of 155 mm and was manufactured starting in the early 1960s. Peculiarities of the W48's design and manufacturing process created complications in the system's maintenance and dismantlement, resulting in a notable 1992 incident that featured a cracked plutonium pit in a W48 warhead.²⁷ While North Korean warhead manufacturing and maintenance practices remain unknown, it is unlikely that Pyongyang has pursued such a path given its plutonium constraints and the complexities of this particular design.

Given the undesirable inefficiencies of the gun-type design and the material constraints around linear implosion, the most parsimonious solution for TNWs in North Korea remains a standard spherical implosion fission bomb—potentially modeled on the device shown by Pyongyang publicly in March 2016.²⁸ Independent mensuration analysis of North Korean photographs exhibiting such a bomb has found that the implosion design weapon showed alongside Kim Jong Un in March 2016 has a diameter on the order of 530 mm, making it suitable for potential mating with North Korea's newer short-range ballistic missiles, including the KN23 and KN24 missiles—each of which has a warhead section diameter of at least 800 mm, if not more.²⁹

A new short-range ballistic missile (SRBM) tested in March 2021 could also be a candidate system. North Korea claims that its March 2021 SRBM is designed to deliver a 2,500-kilogram conventional payload.³⁰ Pyongyang may have developed multiple implosion design bombs, which leaves open the possibility of smaller-diameter warheads. With the exception of North Korea's sub-kiloton first nuclear test in October 2006, which is widely thought to have been a fizzled detonation,³¹ none of Pyongyang's subsequent tests appear to have been designed to especially minimize yield for a potential TNW application. But the design information gleaned over these tests likely leaves sufficient confidence among North Korean weapons designers that potential explosive yields could be minimized if Pyongyang seeks to pursue TNWs for its newer ballistic missiles.

Finally, albeit inconclusive, North Korea's own description of the design objectives of some of its previous nuclear tests (notably, the May 2009 and September 2017 tests) included language indicating a potential interest in varying explosive yield.³² But it remains possible that North Korea could have no intention of deploying TNWs with lower yields and may choose instead to define these systems by their shorter range and warfighting role alone. North Korea has yet to offer clarity about which systems will be assigned TNW missions, but even if it were to do so, it is probable that its designated TNW delivery systems could be dual-capable (conventional and nuclear).

Escalation Potential on the Korean Peninsula

For 33 years beginning in 1958, the United States continuously based tactical nuclear weapons in South Korea, initially to offset the Korean People's Army's numerical advantages in conventional forces. The composition of specific systems changed frequently and peaked at around 950 warheads in 1967.³³ As the Cold War ended, US President George H.W. Bush and Soviet leader Mikhail Gorbachev each issued reciprocal unilateral pledges to pull back their deployed tactical nuclear weapons worldwide. The US implementation of these Presidential Nuclear Initiatives (PNIs) involved removing the last US nuclear weapon from South Korean soil in December 1991, after which then-South Korean President Roh Tae-woo publicly declared that "there do not exist any nuclear weapons whatsoever anywhere in the Republic of South Korea."³⁴

The departure of these weapons created the enabling environment in which the two Koreas signed the Joint Declaration on the Denuclearization of the Korean Peninsula on January 20, 1992.³⁵

**South Korean
interest in the
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ment of US tactical
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has grown**

This marked the first international agreement to bear the phrase "denuclearization of the Korean Peninsula," which had previously been used by North Korean leader Kim Il Sung.³⁶ At the time of the 1992 declaration, it was South Korean territory that had most recently hosted nuclear weapons; even as the two Koreas concluded the agreement, North Korea did not acknowledge Roh's December 1991 declaration of a lack of nuclear weapons on South Korean soil.

In more recent times, interest in the potential redeployment of US tactical nuclear weapons to South Korea has grown—particularly among ROK political

conservatives.³⁷ The conservative Liberty Korea Party's (LKP) 2017 presidential election platform supported the "redeployment of tactical nuclear weapons on the Korean Peninsula through consultations with the United States."³⁸ (LKP has since dissolved and merged into a broader conservative coalition party, the United Future Party.) In 2020, the liberal People's Party voiced support for a "NATO-style ROK-US nuclear sharing system," which would require basing US nuclear weapons on the Korean Peninsula.³⁹ Certain prominent South Korean conservative politicians have additionally implied that, should the United States not redeploy tactical nuclear weapons to the Korean Peninsula, Seoul may be more prone to pursuing an independent nuclear deterrent.⁴⁰ The renewed salience of US tactical nuclear weapons in South Korean debates on national defense reflects growing concern in Seoul amid North Korea's considerable qualitative advances in nuclear weapons delivery under Kim Jong Un.

In the three decades since the end of the Cold War and the departure of US nuclear weapons from the Korean Peninsula, North Korea has continued to insist that these weapons are present in South Korea as a cudgel against both Seoul and Washington. "The DPRK demands the denuclearization of the whole Korean peninsula including the dismantlement of nukes in South Korea," an official spokesperson noted in 2016.⁴¹ After the completion of the Trump administration's North Korea policy review, a spokesperson for the General Staff of the Korean People's Army said it was US policy to "constantly keep tactical nuclear weapons deployed in South Korea."⁴² North Korean state media has argued that the United States based nuclear weapons on the Korean Peninsula as early as August 1950 and has turned South Korea "into the world's biggest nuclear arsenal."⁴³ Similarly, Pyongyang has implied that the basing of tactical nuclear weapons on the Korean Peninsula during the Cold War marked a unilateral violation of the 1953 Korean War armistice by the United States.⁴⁴ Following Pyongyang's overt pursuit of nuclear weapons after the collapse of the Agreed Framework in 2002, references to US tactical nuclear weapons on the Korean Peninsula have often featured in North Korean statements on denuclearization—primarily to imply the need for the United States to withdraw specific assets and extended nuclear deterrence from South Korea.

Beyond the consequences for denuclearization, the introduction of tactical nuclear weapons into North Korean nuclear forces would have important implications for escalation dynamics on the Korean Peninsula. While some assumptions regarding TNWs in North Korea will be sensitive to Kim's eventual choices on command and control—primarily his decision whether and when to delegate nuclear employment authority in a crisis—these capabilities may lower the threshold for nuclear use. North Korea's envisaged nuclear force size remains unknown, but the possibility of a significant TNW inventory in the future could considerably raise nuclear dangers on the Korean Peninsula.

First, despite Kim Jong Un's apparent preference for assertive control over his nuclear forces, TNWs may create incentives for predelegation—if not in peacetime, then in a crisis. Kim may perceive signaling predelegated nuclear employment authority early in a crisis as enhancing general deterrence in his favor, indicating to South Korea and the United States that any perceived offensive mobilization could be met with nuclear use.

Predelegated TNWs may be widely geographically dispersed, and an attack on these units could serve as an escalatory tripwire for broader nuclear theater-level nuclear use. US nuclear strategist Thomas Schelling described the brink in brinkmanship not as “the sharp edge of a cliff where one can stand firmly, look down, and decide whether or not to plunge,” but as “a curved slope that one can stand on with some risk of slipping.”⁴⁵ TNWs may allow North Korea to further manipulate the curve of this slope toward increasing steepness in a crisis. As North Korea's confidence in its broader strategic nuclear deterrent grows, TNWs could further lower the threshold for nuclear escalation on the Korean Peninsula, allowing Pyongyang greater scope for limited conventional military activity in a crisis. While Kim's preference for highly assertive control in peacetime is strong, his incentives to disperse and delegate KPA nuclear-capable units in a crisis should not be overlooked.⁴⁶

In a way, North Korea may incidentally adopt NATO's mid-1950s posture toward TNWs. The alliance, amid concerns about its conventional shortfalls against the Soviet bloc, sought to “ensure the ability to carry out an instant and devastating nuclear counteroffensive by all available means and develop the capability to absorb and survive the enemy's onslaught.”⁴⁷ This appeared to manifest in practice through predelegation of nuclear use authority for short-range systems.⁴⁸ The vast gulf in conventional capabilities between the US-South Korea alliance and North Korea should similarly strongly incentivize Pyongyang to adapt its asymmetric escalation posture with TNWs in this way.

In a crisis or conflict, tactical nuclear weapons may be prone to unauthorized and/or accidental release

In practical terms, this posture would require North Korea to build the ability to quickly and securely generate its TNW forces early in a crisis—precisely so it might credibly enforce its redlines. Kim could choose to retain his existing apparent preference for assertive control in peacetime, but TNWs could force difficult choices in a crisis. To fully avail of the perceived deterrence and potential war-fighting advantages of TNWs, Kim may need to tolerate dispersed nuclear weapons storage

and potentially shirk the sort of negative controls⁴⁹—technical and organizational measures that are designed to make unauthorized or accidental nuclear

use less likely—that might otherwise be in use with strategic units, allowing for the rapid deployment and, if necessary, release of TNWs. In a crisis or conflict, North Korean TNWs thus may be prone to unauthorized and/or accidental release versus their strategic counterparts. Procedural negative controls, such as a two-man rule in the field, could attenuate some of this risk.

TNWs may also introduce new pre-launch ambiguity questions into escalation management on the Korean Peninsula.⁵⁰ With the exception of its older SCUD-derived nuclear delivery systems, each of North Korea's newer nuclear delivery systems—including all of its medium-, intermediate-, and intercontinental-range missiles—are thought to be solely nuclear-capable. The most promising candidate systems available to Kim for TNW deployment—including the KN23, KN24, and the March 2021 SRBM—may also deploy with conventional payloads. Given early-use pressures for North Korea to generate and use TNWs in a crisis, planners in the United States and South Korea are likely to seek the destruction of as many potential TNW units as early as possible. In pursuing this objective, targeting is likely to depend on poor indicators of the potential nuclear role of any given unit, creating considerable challenges. Without robust indicators, planning may proceed under the assumption that the potential nuclear delivery role of any given unit may correlate to its proximity from known nuclear weapon storage sites.

The uncertainty and ambiguity associated with characterizing specific dual-use systems in a crisis could result in inadvertent escalation. For instance, in a limited crisis where North Korea has no intention to resort to nuclear use but has employed dual-use short-range missile systems, alliance counter-battery fire could unintentionally strike a TNW-capable unit. Without clear lines of communication available, Kim may conclude that his nuclear forces are being deliberately targeted and that the United States and South Korea have expanded war aims and therefore authorize nuclear use, begetting inadvertent nuclear escalation in what may otherwise have been a bounded crisis.

Finally, North Korea's nuclear weapons designs are not known to adhere to robust safety and surety standards, which raises the possibility of a nuclear detonation arising as a result of an external single point shock (such as a conventional missile attack).⁵¹ This resulting detonation, in the fog of war, may be interpreted in North Korea as the outcome of a US nuclear attack. By deploying TNWs and *indicating the possibility* of predelegation (even without *actual* predelegation), Kim might manipulate these risks in his favor, hoping to dissuade his adversaries to the south of taking action against his forces that might result in unintended and potentially unlimited escalation.

Toward Threat Reduction and Arms Control

Policymakers should prioritize tactical nuclear weapons in any threat reduction or arms control process

The introduction of tactical nuclear weapons in North Korea would represent the most meaningful development in the country's nuclear force structure since its initial ICBM tests in 2017. The logic of nuclear strategy and North Korea's strategic predicament suggest that a turn toward

the potential near-future development and deployment of TNWs would be unsurprising. Nevertheless, these weapons would represent a new source of risk on the Korean Peninsula and present important challenges for how the United States and its allies plan for a conflict. The prospect of early North Korean nuclear use in a conflict is not new, but the ongoing quantitative growth in Pyongyang's nuclear forces and qualitative shifts in its available capabilities—including TNWs—present substantial complications. Because of the serious-

ness of these risks, policymakers should prioritize the inclusion of TNWs in any process of threat reduction or arms control with North Korea.

Averting nuclear use on and around the Korean Peninsula remains a primary US policy objective, and the Biden administration has vaguely emphasized an interest in making "practical progress that increases the security of the United States, our allies, and deployed forces."⁵² While much has yet to be revealed about Kim's intentions for his tactical nuclear weapons, policymakers in Washington, Seoul, and Tokyo can scarcely afford to leave these North Korean capabilities unexamined. Even short of direct diplomacy or a process of bilateral threat reduction, the United States and its allies should avoid presenting Kim Jong Un with incentives to accelerate the production and deployment of TNWs. While formal restraints are preferable, shaping Kim's choices in peacetime can have tremendous value.

While the status of specific capabilities remains ambiguous, Kim has made clear in January 2021 that he intends to turn sharply toward tactical nuclear weapons, among many other new capabilities also announced at the Eighth Party Congress. Absent serious diplomacy with North Korea in the short term, policymakers in allied capitals should not only consider the implications of these capabilities for escalation and deterrence on the Korean Peninsula, but also contemplate how they might shape Kim's future choices about his force size and command-and-control practices. Above all, Washington and Seoul should resist calls to mirror North Korea's introduction of TNWs by reintroducing US TNWs to the Korean Peninsula. Instead, the alliance should plan for

contingencies involving North Korea's use of these capabilities while maintaining a high level of conventional readiness. If and when negotiations with North Korea might resume on threat reduction, TNWs should be addressed directly. While the road to denuclearization will remain long, seeking a TNW-free Korean Peninsula is a valuable near-term objective.

Notes

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