



CANADA AND THE INDO-PACIFIC INITIATIVE

Policy Brief

MARCH 2021

North Korea's weapons of mass destruction in 2021 and beyond

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Introduction¹

North Korea's relevance to the overall geopolitics of Northeast Asia has taken on outsized importance in the last five years. Between 2015 and 2017, North Korean leader Kim Jong-un considerably accelerated his ballistic missile and nuclear testing campaigns. It was also in 2017 that saw the most serious US-North Korea crisis since arguably 1994.

That year, North Korea crossed two critical qualitative benchmarks: it tested what appeared to be a fully staged thermonuclear weapon (Eaves 2017) and two separate intercontinental-range ballistic missile (ICBM) designs (*KCNA Watch* 2017). In 2018, Kim Jong-un turned to diplomacy with South Korea and the United States. Several summits later, however, structural conditions on the Korean Peninsula remain largely unchanged: North Korea's nuclear capabilities continue to grow in their depth and breadth, and the threat to the United States, South Korea, and Japan has grown accordingly.

In 2020, however, North Korea, like much of the world, found itself caught off guard by the seriousness of the COVID-19 pandemic (Hotham 2020).

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After the initial outbreak in China, North Korea quickly recognized the then-epidemic as a threat to its “national survival” and locked down its borders. In doing so, Kim Jong-un effectively provided the outside world with a natural experiment of sorts for what “maximum pressure” – the term that came to describe the last US administration’s preference for sanctions and economic pressure – might look like in practice (Cha 2021).

As the year went on, North Korea’s economic difficulties grew and were openly acknowledged by Kim Jong-un at high-level Workers’ Party of Korea events (Choe 2021). Separately, natural disasters and a poor food harvest have increased economic difficulties and heightened food insecurity (Radio Free Asia 2020). Today, North Korea’s internal situation is far from rosy. But as dour as the general situation may be, Kim has made no secret of his continued intention to sustain and expand his nuclear weapons capabilities (Panda 2021). This “treasured sword,” as North Korean state media have said, is being preserved at all costs.

The state of play

In November 2017, Kim Jong-un declared the accomplishment of a critical qualitative milestone in the development of his country’s nuclear forces. That month, the first – and to date only – test of the Hwasong-15 ICBM took place from Pyongsong. After that test, Kim deemed his nuclear deterrent “complete,” but this declaration was only partially true.

Kim’s acquisition of an ICBM capability in 2017 fleshed out North Korea’s nuclear strategy: by acquiring an even rudimentary capability to hold the US homeland at risk, Kim could endeavour to “decouple” the United States from its security guarantees towards South Korea and Japan. In effect, the dilemma he hoped this might pose for alliance managers in Washington would be one that bedevilled US alliances in Western Europe after the Soviet Union procured its ICBM capability. Just as French President Charles de Gaulle once asked whether the United States “would be ready to trade New York for Paris,” Kim hoped that Seoul and Tokyo might begin to cast doubt on US extended deterrence assurances (Rapp-Hooper 2019).

But November 2017 did not mark the end, but the beginning of a period of North Korean nuclear modernization. On the one hand, Kim authorized a massive quantitative expansion of his nuclear forces. During his New Year’s Day address on January 1, 2018, he called for the mass production of nuclear warheads and ballistic missiles – an order that has yet to be remanded to this day (NCNK 2018). As successive reports of the United Nations Panel of Experts on North Korea have pointed out, this directive has been followed to the letter.² North Korean missile launchers, in particular, have been seen rolling off the production lines. Warhead manufacturing, while difficult to detect through satellite imagery alone, also continues.

On the other hand, alongside this call for quantitative expansion, Kim authorized a process of quiet qualitative modernization. As Kim donned his new persona as an international diplomat in early 2018, North Korea's Academy of National Defense Science and the Workers' Party of Korea's Munitions Industry Department took on a lower profile in state media. But they remained hard at work.

The fruits of Kim's post-2017 modernization campaign first became apparent in May 2019. After the collapse of the February 2019 US-North Korea Hanoi summit, Kim returned to Pyongyang, embarrassed and angry. During his address to the 14th Supreme People's Assembly that year, Kim lamented what he saw as US obstinance (*KCNA Watch* 2019a). In May, Kim oversaw the testing of a new solid propellant short-range ballistic missile with manoeuvring characteristics. This missile, known to the US intelligence community as the KN-23, marked the start of a trend. Every single North Korea missile test since May 2019 – and, by extension, since the test of the Hwasong-15 in November 2017 – has involved solid rocket motors.

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In general, compared to their liquid propellant counterparts, solid propellant missile systems are more responsive, flexible, and survivable. Because the missile's propellant and oxidizer are cast into the airframe at the time of manufacture, the pre-launch preparation phase and required operational maintenance are considerably lower. In October 2019, North Korea tested the Pukguksong-3 submarine-launched ballistic missile from an underwater platform. This was yet another solid propellant missile. Two other missiles in the Pukguksong series were revealed at military parades in October 2020 and January 2021.

Apparently not satisfied with the Hwasong-15 as the capstone of his liquid propellant ICBM efforts, Kim also showed off a new, as-yet-unnamed ICBM at the October 2020 military parade. This apparently liquid propellant ICBM appeared to be the largest road-mobile missile of its type ever built in any country. Other major missile powers, including the United States, Russia, and China have eschewed massive road mobile liquid propellant ICBMs given the operational and safety concerns related to such systems.

By all accounts, Kim took the lull in tensions after 2017 to bide his time and expand the survivability and capability of his nuclear forces. Today, North Korea has a well-diversified, if poorly tested, nuclear force, with diverse means of delivery. As the International Atomic Energy Agency and the United Nations Panel of Experts have both testified in successive reports, North Korea con-

tinues to produce highly enriched uranium at the declared uranium enrichment plant at Yongbyon and likely at covert enrichment sites, including the suspected Kangson facility (Panda 2018).

Beyond his nuclear forces, many of Kim's newly tested missiles after 2017 are conventional – or “tactical” – in nature. These systems are largely intended to contribute to conventional warfighting against South Korea. Kim has reacted sharply to advancements in South Korea's military capability, citing Seoul's procurement of F-35A stealth fighters and new, precise conventional missiles as evidence of the Moon administration's apparent ill intent toward Pyongyang (KCNA Watch 2019b). Amid these advances, North Korea's capabilities remain completely unrestricted by any agreement and sanctions have not stemmed Kim's ability to continue to procure components from overseas to support critical programs.

In April 2018, days before his first meeting with South Korean President Moon Jae-in, Kim Jong-un unilaterally adopted a moratorium on nuclear and ICBM testing (Choe 2018). He attributed his decision to apparent technical sophistication of his programs, deeming further testing unnecessary. However, in December 2019, in a speech to the Fifth Plenum of the Seventh Central Committee of the Workers' Party of Korea, Kim explicitly renounced this moratorium (NCNK 2020).³ Because missile and nuclear tests grant North Korea valuable data to refine and improve the reliability of its nuclear weapons and delivery systems, there is great value in inducing Kim to reaffirm his April 2018 moratorium (Diepen 2019). Such a reaffirmation would not only prevent the potential resurgence of a 2017-style nuclear crisis, but also set the stage for possible negotiations that could further restrain North Korea's capabilities.



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At the start of 2021, at the 8th Party Congress of the Workers' Party of Korea in early January, Kim Jong-un unveiled a wide-ranging nuclear and conventional military modernization plan. He indicated substantial ambitions for nuclear force modernization, including through the pursuit of a more responsive and survivable solid propellant ICBM. He suggested that North Korea's missile engineers were nearing the testing phase for new types of missile payloads, including multiple warhead payloads.

For the first time, Kim also mentioned “tactical nuclear weapons” at this meeting – a concerning development for crisis stability and escalation management on the Korean Peninsula. North Korea is not known to operate such weapons. In general, smaller-diameter tactical nuclear weapons, which generally exhibit lower yields than their strategic counterparts, are inefficient in

their use of fissile material. If North Korea does pursue such a capability, it may be because its existing fissile material stockpiles are substantial enough to allow for investment away from strategic warheads. Separately, this could also require a return to nuclear testing by North Korea, as it seeks to develop and refine new warhead designs for tactical nuclear weapons.

Beyond these capabilities, Kim also discussed plans for a new military reconnaissance satellite, suggesting North Korea may seek to carry out a satellite launch – something it last did in February 2016. Kim also discussed a new 15,000 kilometre-range ICBM, which may be a reference to the new ICBM seen at the October 2020 military parade. Finally, he referred to a “hypersonic gliding flight warhead” and a new unmanned aerial system. While some of this “wish list” unveiled at the Party Congress this year will likely see testing either later this year or next year, some items may be further away or simply aspirational.

Near-term implications in Northeast Asia

Japan and South Korea

North Korea’s recent nuclear modernization push has coincided with the general collapse of the 2018-2019 period of US and South Korean diplomatic outreach to Pyongyang, and a precipitous (albeit unrelated) decline in relations between Seoul and Tokyo. While the two countries have generally diverged in their preferences for near-term engagement with Pyongyang, these divergences have been amplified in recent years. South Korea’s progressive government under President Moon Jae-in is determined to “institutionalize” diplomatic progress with North Korea (Kim 2020).

Meanwhile, Tokyo remains largely focused on pursuing North Korean disarmament as it recalibrates its defensive posture to better practice both deterrence-by-denial and deterrence-by-punishment towards Pyongyang (Hornung 2020). While the US-South Korea alliance also maintains its focus on rapid reaction deterrence, Seoul has prioritized the realization of near-term conditions-based transfer of wartime operational control from the United States to South Korea (Choi 2020).

In 2021, if North Korea does return to strategic weapons testing, as Kim Jong-un has suggested, threat perceptions between Seoul and Tokyo may once again align. Coupled with the Biden administration’s greater interest in proactive diplomatic trilateralism in Northeast Asia, the three countries could once again coordinate a strategy in dealing with Pyongyang. As part of the ongoing US North Korea policy review, both South Korea and Japan are being consulted.

An uncooperative China

Successive US administrations have been unsuccessful in convincing the Chinese government to apply the full force of its economic leverage on North Korea. Despite the close economic relationship between Pyongyang and Beijing, the North Korean leader is fundamentally distrustful of Beijing's intentions. Despite this, the two sides have seen a general warming of ties since 2018, when Kim Jong-un first met Chinese leader Xi Jinping (Myers and Perlez 2018). The 2020 border lockdown, meanwhile, has largely choked off much of the cross-border trade with China, reducing Beijing's economic leverage.

A higher-level problem has emerged for the United States, however. Amid the intensification of so-called great power competition with China, US and Chinese interests on the Korean Peninsula have diverged further than ever. Even as the two sides continue to support denuclearization, China's top strategic interests in North Korea concern the regime's overall stability and the avoidance of Korean reunification under terms favourable to South Korea (and, subsequently, the United States). In this environment, leaning on China for a cooperative approach to the North Korean issue is unlikely to succeed.

Nevertheless, insofar as sanctions policy is concerned, the United States will – and should – continue to seek Chinese compliance with UN Security Council resolutions. This will take on added importance if and when North Korea reopens its borders and returns to pre-2020 trading practices.

Policy recommendations

The schism between non-governmental and intelligence assessments of North Korea's decision-making pertaining to its nuclear forces has sharply diverged in recent years. The near-universal assessment outside government decision-making bodies that Kim Jong-un is unlikely to trade his nuclear capabilities for finite benefits should inform policy. This need not require that the now near-three-decade-old goal of "denuclearization of the Korean Peninsula" be set aside, but that it become a longer-term goal. In the shorter-term, governments should recognize that the top priority in Northeast Asia should be the avoidance of a nuclear war.

North Korea's nuclear warheads and delivery systems, even if tested in a limited manner, represent an unacceptable source of risk. The first principle of policy in the short-term thus should be nuclear risk reduction with North Korea. This should come with an acknowledgement that the problem of North Korea's nuclear weapons can no longer be classified as a problem of non-proliferation, but as one of arms control and disarmament. Based on this general recommendation, in the short-term, the United States, South Korea, Japan, Canada, and others should take the following steps:

- Conduct a comprehensive review of North Korea policy, informed by strategic intelligence analyses of Kim Jong-un's decision-making pertaining to his nuclear forces. The United States is already doing this under the Biden administration, but South Korea, Japan, Canada and others should follow.
- Review the efficacy of the current international sanctions regime against North Korea, with a focus on implementation, in particular. Sanctions need not be scrapped as a policy tool given that they represent an important source of leverage. North Korea has sought sanctions relief specifically in recent negotiations, revealing the continued relevance of this tool as leverage.
- The United States, in particular, should conduct a high-level review of inadvertent nuclear escalation risks on the Korean Peninsula, exploring in particular how non-nuclear US and South Korean capabilities may contribute to early nuclear employment risks from North Korea. A declassified portion of such a review should offer a high-level US assessment of North Korean nuclear strategy, which should be briefed to allies.
- The United States and South Korea should maintain a focus on rapid reaction deterrence on the Peninsula while continuing the process of seeking conditions-based transfer of wartime operational control.
- Focus, in the near-term, on creating incentives for North Korea to refrain from returning to nuclear or long-range missile testing. Such incentives could involve a post-policy review unconditional offer for exploratory working-level negotiations in a US-North Korea bilateral context.

About the author



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Panda was a Korea Society Kim Koo Fellow, a German Marshall Fund Young Strategist, an International Institute for Strategic Studies (IISS) Shangri-La Dialogue Young Leader, and a Carnegie Council on Ethics in International Affairs New Leader. He has worked at the Council on Foreign Relations and the Liechtenstein Institute on Self-Determination at the Princeton School of Public and International Affairs.

A widely published writer, Panda's work has appeared in the *New York Times*, the *Washington Post*, *Foreign Affairs*, *Foreign Policy*, the *Bulletin of the Atomic Scientists*, the *Diplomat*, the *Atlantic*, the *New Republic*, the *South China Morning Post*, *War on the Rocks*, *Politico*, and the *National Interest*. Panda has also published in scholarly journals, including *Survival*, the *Washington Quarterly*, and *India Review*, and has contributed to the IISS *Asia-Pacific Regional Security Assessment* and *Strategic Survey*. He is editor-at-large at the *Diplomat*, where he hosts the Asia Geopolitics podcast, and a contributing editor at *War on the Rocks*.

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Endnotes

- 1 The views expressed in this policy brief reflect the author's alone.
- 2 See, for example, the 2020 Panel of Experts mid-term report at https://www.un.org/securitycouncil/sanctions/1718/panel_experts/reports.
- 3 According to the NCNK report, Kim said “the DPRK has found no grounds to be unilaterally bound any longer by the commitment with no other party to honour, and this has put a damper on its efforts for disarmament and the non-proliferation of nuclear weapons across the world.”

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