



THE DPRK NUCLEAR PROGRAMME

NUCLEAR RISK REDUCTION POLICY BRIEF NO. 4

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HIGHLIGHTS

- Risk reduction efforts on the Korean peninsula should consider both the brinkmanship of the Democratic People’s Republic of Korea (DPRK) and regional and international reactions to it.
- Engagement with the DPRK inevitably raises questions about the potential for unintentionally endowing Pyongyang with nuclear legitimacy. Nevertheless, on balance, States should seek sustained and more extensive engagement with the DPRK, including through diplomatic initiatives and dialogue towards rebuilding trust and transparency, to reduce the risk of nuclear weapons use in the region.
- An expansive risk reduction approach—one that addresses nuclear and non-nuclear realms via unilateral, bilateral and regional initiatives—may also help improve Northeast Asia’s strategic outlook.

CONTEXT

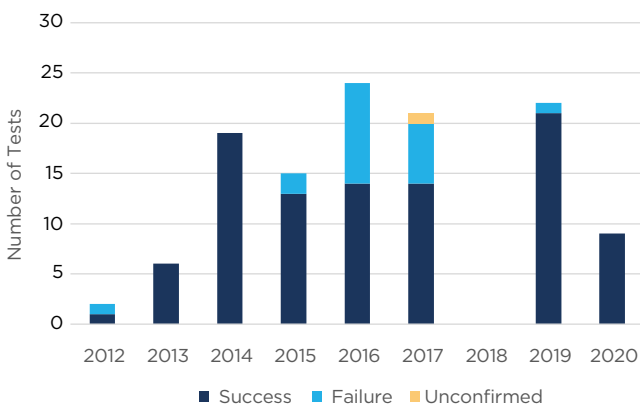
The accelerating pace of the DPRK’s nuclear and missile programmes, the persistently provocative behaviour of the Kim Jong Un regime, and a strategic environment marked by deep animosities among many players in Northeast Asia all contribute to the vulnerability of the Korean peninsula to complex nuclear dangers. To date, and in the absence of an effective regional security architecture, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the US alliance system, and various diplomatic initiatives have been the main means by which the international community has sought to limit risk of nuclear use on the Korean peninsula. But deteriorating strategic relations have placed these structures under strain. This brief outlines some of the nuclear risk drivers on the Korean peninsula, and other relevant factors, and suggests measures in support of nuclear risk reduction.

RISK DRIVERS

DPRK Capability and Opacity

The DPRK’s series of tests of increasingly sophisticated weapon systems indicate substantial advances in its nuclear and missile programmes over the past few years. Pyongyang appears to have made key improvements to its nuclear warhead designs, re-entry technologies, mobile missile launchers, submarine vessels, submarine-capable ballistic missiles, and—according to some—the miniaturization of nuclear weapons to fit ballistic missile warheads.¹ Meanwhile, Pyongyang’s strategic posture, although underpinned by stated defensive goals, is destabilizing because it relies on opacity and deliberate provocations to instil fear and uncertainty in adversaries. When adversaries mirror the DPRK’s destabilizing actions and rhetoric, as occurred early in US President Donald J. Trump’s Administration, the chance of deliberate or inadvertent military escalation and conflict increases.

DPRK Missile Tests Under the Kim Jong Un Regime²



DPRK CIRCUMSTANCES OF USE? OPEN-SOURCE SELECTIONS³

“[Nuclear weapons] serve the purpose of deterring and repelling the aggression and attack of the enemy against the DPRK and dealing deadly retaliatory blows at the strongholds of aggression until the world is denuclearized.”

“The nuclear weapons of the DPRK can be used only by a final order of the Supreme Commander of the Korean People’s Army to repel invasion or attack from a hostile nuclear weapons state and make retaliatory strikes.”

“The DPRK shall neither use nukes against the non-nuclear states nor threaten them with those weapons unless they join a hostile nuclear weapons state in its invasion and attack on the DPRK.”

“From this moment all the powerful strategic and tactical strike means of our revolutionary armed forces will go into preemptive and just operation to beat back the enemy forces to the last man if there is a slight sign of their special operation forces and equipment moving to carry out the so-called ‘beheading operation’ and ‘high-density strike’.”

¹ H. M. Kristensen and R. S. Norris, “North Korean Nuclear Capabilities, 2018”, *Bulletin of the Atomic Scientists*, vol. 74, special issue, 2018, <https://doi.org/10.1080/00963402.2017.1413062>.

² S. Cotton, “The CNS North Korea Missile Test Database”, April 2017 (updated 31 March 2020). Distributed by NTI. <https://www.nti.org/analysis/articles/cns-north-korea-missile-test-database>.

³ KCNA, “Law on Consolidating the Position of Nuclear Weapons State Adopted”, 1 April 2013, <http://www.kcna.co.jp/item/2013/201304/news01/20130401-25ee.html>; KCNA, “Crucial Statement of KPA Supreme Command”, 23 February 2016, <http://www.kcna.co.jp/item/2016/201602/news23/20160223-27ee.html>. (The CNA website is sometimes down.)

United States–DPRK Threat Perceptions

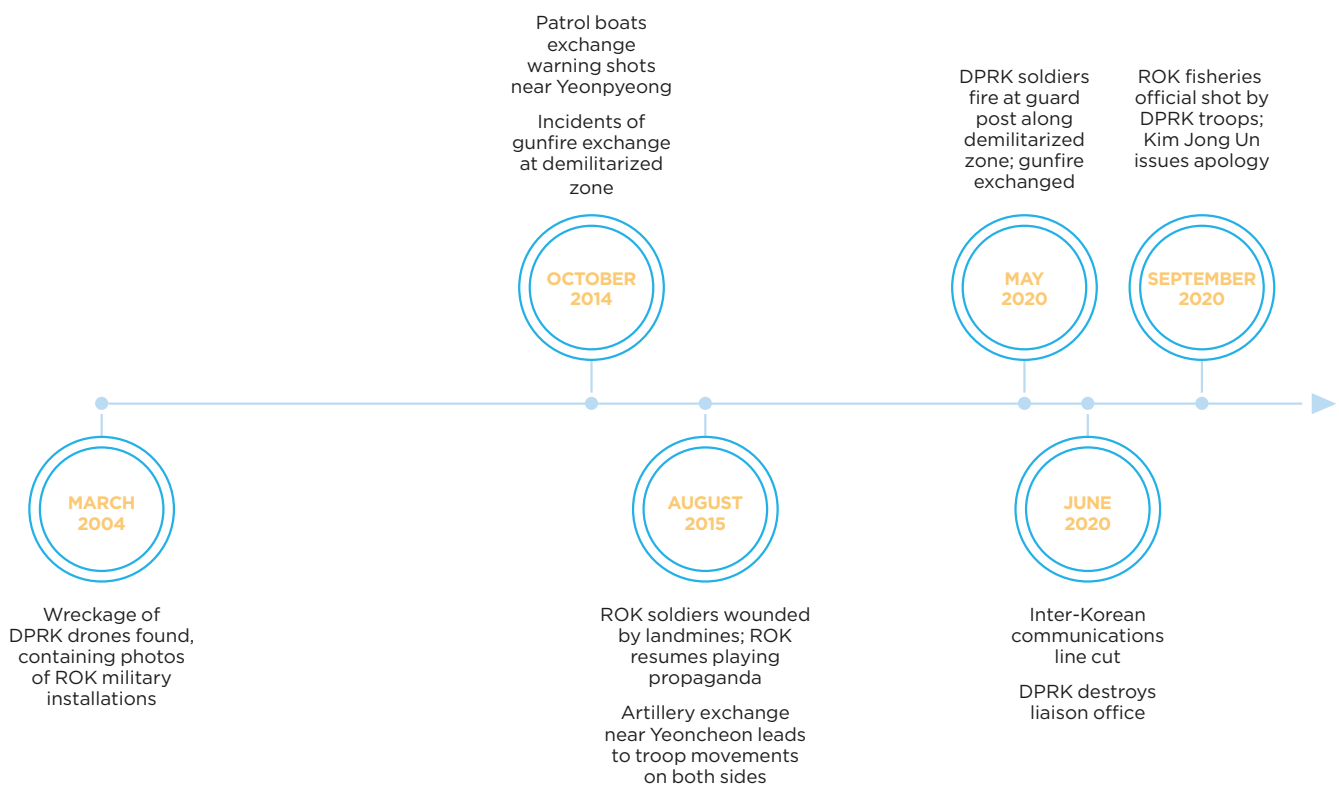
US leaders and defence officials have emphasized that “all options are on the table” in dealing with DPRK nuclear and missile developments; declassified documents show that this is not merely rhetoric.⁴ While the DPRK’s technological advances increase the costs of a US first strike and reduce its strategic appeal in theory, US war planning continues to envisage a role for nuclear weapons in the defence of Japan and the Republic of Korea.

Meanwhile, the US nuclear modernization programme includes work on the earth-penetrating nuclear weapons that would be needed in such a conflict.⁵ Awareness of these and other developments almost certainly heighten DPRK perceptions of threat. This awareness could also prompt a “use it or lose it” dilemma—and even provide sufficient incentive for a pre-emptive strike of its own—if the DPRK leadership believed that an attack was imminent and regime survival was at stake.

Alliance Commitments

Deep fault lines exist in strategic relations in and around the Korean peninsula, including the lack of a peace treaty formally ending the Korean conflict, the outstanding issue of Korean reunification, and hostile relations between the DPRK and Japan. Insecurities stemming from these tensions have driven behaviour that has perpetuated the cycle. Regular combined United States–Republic of Korea military exercises intended to signal alliance resolve have heightened risk. Pyongyang has often timed its missile tests to coincide with these displays.⁶ Such action-reaction dynamics could result in military confrontation, particularly if domestic political pressures come into play. The DPRK’s deliberate shelling of Yeonpyeong Island in November 2010 (following artillery exercises by the Republic of Korea) is an example of the type of low-level military exchange that, if poorly handled, could unleash alliance commitments that escalate to nuclear use.

Incidents along the DPRK–Republic of Korea (ROK) Border



⁴ J. McCurry, “Trump on North Korea: ‘All Options Are on the Table’”, *The Guardian*, 30 August 2017, <https://www.theguardian.com/world/2017/aug/29/donald-trump-on-north-korea-all-options-are-on-the-table>; A. Mount and A. Stowe-Thurston, “What Is US Nuclear Policy, Exactly?”, *Bulletin of the Atomic Scientists*, 18 April 2018, <https://thebulletin.org/2018/04/what-is-us-nuclear-policy-exactly>.

⁵ H. M. Kristensen and M. Korda, “Tactical Nuclear Weapons, 2019”, *Bulletin of the Atomic Scientists*, vol. 75, 2019, <https://doi.org/10.1080/00963402.2019.1654273>.

⁶ A. Panda and V. Narang, “Why North Korea Is Testing Missiles Again”, *Foreign Affairs*, 16 May 2019, <https://www.foreignaffairs.com/articles/north-korea/2019-05-16/why-north-korea-testing-missiles-again>.

ACCIDENTS AND THEIR AFTERMATH

The safety risks associated with the DPRK's nuclear and missile programmes are significant. The events of April 2017 highlight this risk: During a test firing from Pukchang airfield, what was identified as a Hwasong-12/KN17 intermediate range ballistic missile failed about a minute into powered flight, crashing in the DPRK city of Tokcho and damaging a complex of agricultural buildings near a residential area.⁷ The incident brings into focus the possibility of other accidents that could have serious or even catastrophic consequences, as liquid-fuel missiles like the Hwasong-12, Hwasong-14 and Hwasong-15 all use a highly volatile combination of chemicals that can produce massive explosions, depending on how they fail.

Recent developments in Pyongyang's missile testing programme are also worrying. The programme uses civilian facilities for ballistic missile assembly and testing. In 2017, ballistic missiles were launched from a sector of Pyongyang's Sunan airport, which serves as the country's entry point for most non-Chinese foreign visitors.⁸ An accident that occurs at Sunan airport or other civilian facility – leading to casualties among citizens and foreign nationals – could trigger a crisis.

Additionally, Pyongyang in recent years has test fired ballistic missiles over Japan. A missile malfunction over Japanese territory could be mistaken for an attack and spark a military response.⁹ This risk is exacerbated because the DPRK does not issue formal launch warnings and has both diversified its launch sites and concealed its missile launch preparations as a matter of course.

DPRK Missile Tests over Japan, 2017



⁷ Initial assessments of the missile identified it as a solid-fuel missile. See J.-M. Park and J. Kim, "North Korea Test-Fires Missile into Sea Ahead of Trump-Xi Summit", *Reuters*, 5 April 2017, <https://www.reuters.com/article/us-northkorea-missiles-idUSKBNI762XX>.

⁸ Security Council, UN document S/2019/171, 5 March 2019.

⁹ A. Panda and D. Schmerler, "When a North Korean Missile Accidentally Hit a North Korean City", *The Diplomat*, 3 January 2018, <https://thediplomat.com/2018/01/when-a-north-korean-missile-accidentally-hit-a-north-korean-city>.

RECOMMENDATIONS

Expand DPRK Engagement

Denying Pyongyang nuclear status makes sense from the perspective of upholding the NPT: Relaxing this position would set a negative precedent for handling future breakout crises. However, the urgent goal of nuclear risk reduction requires deeper levels of engagement with the DPRK, including through technical dialogue. The issue is that such a process could unintentionally bestow a level of legitimacy on Pyongyang's nuclear activities. Pursuing each goal without compromising the other is virtually impossible, creating a serious policy dilemma. Nevertheless, means of engagement could include the following:

United States: Expand the Summit Process. The United States–DPRK summits offer a vital communication channel and provide opportunities to incrementally manage risks without requiring formal change in nuclear postures on either side, including via reciprocal confidence-building measures (e.g. suspending joint military exercises and agreeing testing moratoriums). Next steps could include the development of a road map setting out specific risk reduction measures across nuclear and non-nuclear realms, including launching an expanded, regionally inclusive dialogue process focusing on cross-domain risk reduction. Expressing broad support for the process and urging its continuation, despite its difficulties, should be a priority for domestic legislators, political leaders and diplomats alike.

Republic of Korea: Continue Rapprochement Efforts.

Communication channels can include continued face-to-face trust-building meetings between Republic of Korea President Moon Jae-in and DPRK leader Kim Jong Un, and further efforts by Moon as intermediary in the United States–DPRK summit process. Other initiatives have included the 2018 crisis hotline between Seoul's presidential Blue House and Pyongyang's State Affairs Commission, and the 2018 Inter-Korean Military Agreement, which seeks to reduce conventional military risks along the Military Demarcation Line. Finding ways to consolidate, implement and expand these and other initiatives in the non-nuclear sphere presents a major challenge for President Moon, especially in the face of provocative episodes from the DPRK – which often prefers direct talks with the United States – and pressure from Republic of Korea domestic constituencies. The international community can help by issuing statements of support, and by engaging in dialogue – including among themselves – on how third parties can assist.

China: Engage on Safety. Experts believe Chinese pressure due to Beijing's concerns about the Punggye-ri test site (where Pyongyang conducted five of its six nuclear tests) played a key part in the Kim Jong Un regime's decision to dismantle the site in May 2018.¹⁰ If true, it might bode well for future joint action on nuclear risk reduction, especially if there is progress on denuclearization on the Korean peninsula. This could include confidence-building and transparency measures, as well as expert-level bilateral workshops on nuclear safety. More radical longer-term proposals are also worth considering. One presented as “a necessary evil” is that international missile experts train their DPRK counterparts in damage control and critical repair of launch systems; another is that an intergovernmental oversight body focusing on missile safety be established.¹¹

¹⁰ S. Hecker, “Why Did Kim Jong Un Blow Up His Nuclear Test Site?”, *Washington Post*, 30 May 2018, <https://www.washingtonpost.com/news/theworldpost/wp/2018/05/30/north-korea-test-site>.

¹¹ M. Auslin, “Trump Should Help North Korea Keep Its Nukes Safe”, *The Atlantic*, 5 November 2017, <https://www.theatlantic.com/international/archive/2017/11/trump-help-nuclear-north-korea/544664>.

Further Stigmatize Nuclear Use

Inflammatory threats of all kinds and by all sides can contribute to the kind of environment ripe for crisis onset and nuclear escalation. Kim and Trump both have records of reckless bellicosity. States in the region that currently rely on the United States for their security, such as Japan and the Republic of Korea, could consider using their combined political leverage to try to rein in the US president's intemperate outbursts, just as China is expected to admonish Kim. These States could also restrict the role of nuclear weapons in their defence doctrines by stigmatizing their use except as weapons of last resort and by pledging—together or separately—that they would not welcome any deployment of US tactical nuclear weapons on their territory.

Explore Regional Strategic Considerations

Prepare Crisis Responses. For States with a vested interest, and with potential high-level participation from Japan and the Republic of Korea, a priority agenda item should be a joint coordinated response to potential DPRK regime collapse, including the question of how to secure its dispersed and expanding nuclear and missile facilities in aboveground and underground locations. The fact that this crisis planning dialogue can take place without the need for difficult negotiations with the Kim leadership and within a pre-existing diplomatic process – formal or informal – increases its feasibility. This is especially so as nuclear-weapon States in particular have an interest in preventing unauthorized access to Pyongyang's nuclear arsenal and have a responsibility to demonstrate leadership in fostering strategic stability.

Explore Regional Frameworks. The situation on the Korean peninsula takes place against the context of broader strategic stability in Northeast Asia, East Asia and the Indo-Pacific. As such, engagement requires inclusive, regional dialogues with input and support from East Asian States, particularly given the relationship between their strategic expectations, US behaviour in the region, and the way this is perceived by Pyongyang. This would help foster a shared understanding of cross-domain misperception, overreaction and escalation scenarios. In these venues, additional confidence-building could centre on pre-notification of nuclear and missile tests (including information-sharing on test locations and flight paths), notification of accidents involving nuclear and missile activities, and issuance of clearer, more consistent statements on nuclear doctrine. These actions would help increase predictability and prevent some of the most dangerous triggers of crisis escalation.



Staff Sgt. Richard Colletta/Public Domain

About this brief

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