

North Korea

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North Korea is a perennial problem in Asia because of the regime's consistently provocative behavior and enhanced missile, nuclear, and cyber capabilities, all of which pose a growing threat to the United States and its allies. These actions and capabilities, though not on the same existential scale as the threat posed by China or Russia, threaten to undermine not only regional stability and security, but the American homeland itself.

Pyongyang now has a spectrum of missile systems that threaten both the continental United States and U.S. forces and allies in Asia with nuclear weapons. On assuming power in 2011, Kim Jong-un accelerated nuclear and missile testing and oversaw an expansive diversification of North Korea's arsenal. He directed the North Korean military to develop a new strategy to invade and occupy Seoul within three days and all of South Korea within seven days. This would necessitate the early use of nuclear weapons and missiles against superior allied conventional forces.¹ New weapons overcame the shortcomings of their predecessors and now pose a far greater threat to allied forces in spite of advancements in missile defense systems.

Threats to the Homeland

In 2017, North Korea conducted three successful launches of the Hwasong-14 and Hwasong-15 ICBMs, demonstrating the ability to target the entire continental United States with nuclear weapons. In January 2021, Kim Jong-un announced an ambitious plan to develop multiple-warhead ICBMs, hypersonic glide warheads, tactical nuclear weapons, nuclear-powered submarines, military reconnaissance satellites, and long-range submarine-launched ballistic missiles (SLBMs).²

In March 2022, the regime conducted the first test of the massive Hwasong-17, the world's largest

road-mobile ICBM, which exploded at an altitude of 20 kilometers. Eight days later, the regime successfully launched an ICBM, which it claimed was the Hwasong-17.³ However, the U.S. and South Korea subsequently assessed that the second launch was actually a Hwasong-15, a model successfully tested in 2017. The missile flew considerably higher and farther than the 2017 Hwasong-15 launch.

The Hwasong-17 is assessed to carry three or four nuclear warheads and, combined with Pyongyang's recently confirmed ability to produce ICBM transporter-erector-launchers indigenously, conceivably could overwhelm the limited missile defenses protecting the American homeland. Currently, the U.S. is defended by only 44 Ground-Based Interceptors in Alaska and California and plans to add an additional 20 by the late 2020s.

To date, North Korea has launched all of its ICBMs on a highly lofted trajectory so that they would not fly over Japan. The regime could choose to be even more provocative by launching missiles in a normal trajectory over Japan; bracketing Guam with intermediate-range missiles (as it threatened to do in 2017); testing two long-range SLBM systems that have been paraded but not yet launched; or demonstrating the ability of an ICBM reentry vehicle to reenter the Earth's atmosphere successfully after a lengthy flight.

North Korea has conducted six nuclear tests, including a 2017 test of a powerful hydrogen bomb with an explosive yield approximately 10 times the yields of the Hiroshima and Nagasaki atomic bombs of World War II. In 2017, "the U.S. Defense Intelligence Agency (DIA), estimated [that North Korea had] a stockpile of up to 60 nuclear warheads."⁴ In addition, "[s]ome experts have estimated that North Korea could produce enough nuclear material for

an additional seven warheads per year,”⁵ and others have estimated that the number could be as high as 12 per year.⁶

In August 2021, the International Atomic Energy Agency assessed that North Korea had resumed operations at its Yongbyon nuclear reactor, which produces plutonium for nuclear weapons.⁷ Pyongyang also may have reprocessed nuclear fuel from previous reactor operations. In recent years, North Korea has expanded and refined manufacturing facilities for fissile material, nuclear weapons, missiles, mobile missile launchers, and reentry vehicles. By 2027, according to a RAND analysis, “North Korea could have 200 nuclear weapons and several dozen intercontinental ballistic missiles (ICBMs) and hundreds of theater missiles for delivering the nuclear weapons.”⁸

Pyongyang has created a new generation of advanced mobile missiles that are more accurate, survivable, and capable of evading allied missile defenses. Its evolving nuclear and missile forces increasingly give the regime the ability to conduct surprise preemptive first-strike, retaliatory second-strike, and battlefield counterforce attacks.

The collapse of the February 2019 U.S.–North Korean summit in Hanoi led Pyongyang to initiate extensive missile testing from 2019–2022.

- In 2019, North Korea conducted 26 missile launches, its highest-ever number of violations of U.N. resolutions in a year. That year, the regime unveiled five new short-range missile systems threatening South Korea, including a 400mm multiple rocket launcher (MRL); the KN-23 maneuverable missile, which is similar to the Russian Iskander; the KN-24 missile, which is similar to the U.S. Army Tactical Missile System (ATACMS); the KN-25 600mm MRL; and the Pukguksong-3 SLBM. The enhanced accuracy of these systems enables North Korea to accomplish counterforce operations with fewer missiles.
- In 2021, Pyongyang conducted more missile launches, revealing an additional five new missile systems, including a long-range cruise missile, an SLBM, an improved short-range ballistic missile, the first North Korean missiles launched from a train, and the Hwasong-8 hypersonic glide missile.⁹

- In 2022, North Korea again increased its missile testing and even exceeded 2019 levels. On June 5, according to U.S. Special Representative to the Democratic People’s Republic of Korea Sun Kim, “the DPRK launched eight ballistic missiles from various parts of the country, which would be the largest number of ballistic missiles ever launched in a single day by the DPRK.” All told, “North Korea has now launched 31 ballistic missiles in 2022, the most ballistic missiles it has ever launched in a single year, surpassing its previous record of 25 in 2019.”¹⁰

Pyongyang has test-launched its second hypersonic missile capable of evasive flight maneuvers. North Korean–released photos show a warhead design that is different from the Hwasong-8 tested the previous year. Both hypersonic missiles have detachable, maneuverable warheads that can fly at lower altitudes than standard ballistic missiles, which follow a more predictable parabolic trajectory. These characteristics make radar tracking more difficult and enable the weapons to evade allied missile defense interceptors.

The KN-18 and KN-21 Scud variants also have maneuverable reentry vehicles, and the KN-23’s flight profile showed evasive characteristics instead of a typical ballistic parabola. The KN-23 was flown at depressed trajectories, potentially between the upper reach of Patriot missiles and below the minimum intercept altitude for Terminal High Altitude Area Defense (THAAD), with a final pull-up maneuver that provides a steep terminal descent.¹¹ The KN-23 could also be used in a first strike against leadership, hardened command and control, or high-value military targets.

North Korea has successfully tested the Pukguksong-1 (KN-11); Pukguksong-3 (KN-26); and an unidentified SLBM, which could target South Korea and Japan, potentially with a nuclear warhead. In its October 2020, January 2021, and April 2022 parades, North Korea revealed the Pukguksong-4, Pukguksong-5, and Pukguksong-6 SLBM missiles.¹²

South Korea does not currently have defenses against SLBMs. Because the THAAD ballistic missile defense (BMD) system radar is limited to a 120-degree view that is directed toward North Korea, it cannot protect against SLBMs arriving from either the East or West Seas.¹³ The SM-2 missile currently

deployed on South Korean destroyers provides protection only against anti-ship missiles.

In 2022, the U.S. Intelligence Community assessed that Kim Jong-un will “continue efforts to steadily expand and enhance Pyongyang’s nuclear and conventional capabilities targeting the United States and its allies” and that these efforts will include “periodically using aggressive and potentially destabilizing actions to reshape the regional security environment in his favor.”¹⁴ In April 2022, Kim Jong-un vowed that he would augment his nuclear arsenal in “both quality and scale...at the fastest possible speed.”¹⁵ Some experts interpreted Kim’s speech as hinting at a new, more offensive nuclear doctrine, but Pyongyang has long declared that its nuclear arsenal was both a “trusted shield” and “treasured sword” for deterrence and preemptive attack against the United States and its allies.¹⁶

Threat of Regional War

In addition to its nuclear and missile forces, North Korea has approximately a million people in its military and several million more in its reserves. Pyongyang has forward-deployed 70 percent of its ground forces, 60 percent of its naval forces, and 40 percent of its naval forces south of the Pyongyang–Wonsan line. South Korea assesses that North Korean forces “maintain a readiness posture capable of carrying out a surprise attack on the South at any time.”¹⁷

North Korea has an extensive quantity of conventional forces, but the majority of their weapons are of low quality, having been manufactured from the 1950s to the 1970s. The ground forces have approximately 3,500 tanks, 2,500 armored personnel carriers, 8,600 towed and self-propelled artillery, and 5,500 multiple rocket launchers.¹⁸ North Korea’s tank inventory consists predominantly of 1950s-era and 1960s-era T-55 and T-62 tanks. It also has indigenously produced updated tank variants, but they remain outdated compared to South Korean and U.S. tanks, as do North Korea’s light armored vehicles, artillery, combat helicopters, and other ground force weapons.

North Korea has unveiled some new ground force weapons, including tanks and self-propelled artillery, at military parades in recent years, but it is unlikely that they have been deployed in more than limited numbers. Pyongyang has compensated for the large number of aging systems by prioritizing the

deployment of strong asymmetric capabilities that include special operations forces, long-range artillery, and a broad array of newly developed missiles, several of which are assessed to be nuclear-capable.

North Korea’s naval and air forces are similarly obsolete and underequipped compared with South Korea’s military. The North Korean navy has a limited number of aged surface vessels that have fared badly against South Korean naval forces in skirmishes along the maritime Northern Limit Line in the Yellow Sea. The navy has only two frigates and several hundred corvettes and other small coastal combatants.

Pyongyang has 71 submarines, but only one is a *Gorae*-class that is capable of firing ballistic missiles. The remaining force is composed of *Romeo*-class, *Sango-O*-class, and *Yugo*-class submarines.

The North Korean air force consists of 545 older combat aircraft that are no match for modern South Korean and U.S. aircraft. North Korean fighters include vintage Mig-15 *Fagot*, Mig-17 *Fresco*, Mig-19 *Farmer*, Mig-21 *Fishbed*, Mig-23 *Flogger*, and Mig-29 *Foxbat* aircraft.¹⁹ Even the relatively small number of third-generation fighter airplanes are of 1980s design.

In September 2018, the two Koreas signed a Comprehensive Military Agreement to ease military tension and build confidence. The agreement sought to reduce the danger that inadvertent tactical military clashes along the Demilitarized Zone (DMZ) might escalate to larger strategic conflicts. However, static defensive positions like fixed concrete bunkers and minefields are not threatening and have never been the source of military clashes on the peninsula. Rather, the greatest danger arises from the forward, offensively oriented disposition of North Korea’s forces and the regime’s history of making threats and initiating hostilities. The confidence-building measures implemented to date have not reduced North Korea’s tactical or strategic conventional military threat to South Korea, nor do they represent progress in denuclearization.

Due to a predicted shortfall in 18-year-old conscripts, South Korea has initiated a comprehensive defense reform strategy to transform its military into a smaller but more capable force to deal with the North Korean threat. Overall, South Korean military manpower will be reduced approximately 25 percent, from 681,000 to a planned goal of 500,000. The South Korean military currently has a total

strength of 555,000: 420,000 in the army, 70,000 in the navy, and 65,000 in the air force.²⁰ Seoul is compensating for decreasing troop levels by procuring advanced fighter and surveillance aircraft, naval platforms, and ground combat vehicles.²¹

Threat to the Commons

Pyongyang has developed an advanced cyberwarfare prowess that is surpassed by that of few other nations. From initial rudimentary distributed denial-of-service (DDoS) attacks against South Korea, the regime has improved its cyber programs to create a robust and global array of disruptive military, financial, and espionage capabilities.

North Korean leader Kim Jong-un has declared that cyber warfare is a “magic weapon” and an “all-purpose sword that guarantees the North Korean People’s Armed Forces ruthless striking capability, along with nuclear weapons and missiles.”²² In the run-up to a crisis or as an alternative to kinetic strikes, the regime could conduct cyberattacks on government and civilian computer networks that control communications, finances, and infrastructure such as power plants and electrical grids. Perhaps the proof of this can be seen in the regime’s use of such tools in peacetime. Pyongyang has conducted cyber guerrilla warfare to steal classified military secrets in addition to absconding with billions of dollars in money and cyber currency, holding computer systems hostage, and inflicting extensive damage on computer networks.

As its cyber proficiencies have evolved, Pyongyang has implemented ever more sophisticated techniques and prioritized financial targets to evade international sanctions and increase its ability to finance its nuclear and missile programs. In 2019, the U.N. Panel of Experts estimated that North Korea had gained a cumulative \$2 billion from cybercrime.²³ In 2021, North Korean hackers stole at least \$400 million worth of cryptocurrency.²⁴ In April 2022, the FBI announced North Korean hackers had stolen \$620 million of cryptocurrency from a video gaming company.²⁵

In 2017, it was reported that a “former British intelligence chief estimates the take from its cyberheists may bring the North as much as \$1 billion a year, or a third of the value of the nation’s exports.”²⁶ According to the U.N. Panel of Experts, the revenue generated from these hacks is used to evade sanctions and to support North Korea’s weapons of mass destruction and ballistic missile programs.²⁷

To the extent that the cyber domain is a “global commons” used by all people and countries, North Korea’s investment in and exploitation of cyberwarfare capabilities presents a very real threat in this domain.

Conclusion

North Korea’s nuclear and missile forces represent its greatest military threat. Its naval and air forces would not be expected to last long in a conflict with South Korea and the United States. Pyongyang’s ground forces, though consisting mostly of older weapons, are extensive and forward-deployed. Thousands of artillery systems deployed near the demilitarized zone could inflict devastating damage to South Korea, including Seoul, before allied forces could attrite them.

Greater North Korean nuclear capabilities could undermine the effectiveness of existing allied military plans and exacerbate growing allied concerns about Washington’s willingness to risk nuclear attack to defend its allies. Attaining an unambiguous nuclear ICBM capability could lead North Korea to perceive that it has immunity from any international response. Pyongyang could feel emboldened to act even more belligerently and seek to intimidate the U.S. and its allies into accepting North Korean diktats.

Pyongyang could use the fear of nuclear weapons to force South Korea to accommodate North Korean demands that it, for example, end bilateral military exercises and reduce U.S. force levels. The regime could use threats of nuclear attack to force Tokyo to deny U.S. forces access to Japanese bases, ports, and airfields during a Korean conflict.

Pyongyang is on the path to developing capabilities that go beyond deterrence to a viable true warfighting strategy. The regime might also assume that conditions for military action had become favorable if it believed the U.S. extended deterrence guarantee had been undermined. During a crisis, the threshold for use of nuclear weapons could be more easily breached.

This *Index* assesses the overall threat from North Korea, considering the range of contingencies, as “testing” for level of provocative behavior and “gathering” for level of capability.

Threats: North Korea

	HOSTILE	AGGRESSIVE	TESTING	ASSERTIVE	BENIGN
Behavior			✓		

	FORMIDABLE	GATHERING	CAPABLE	ASPIRATIONAL	MARGINAL
Capability		✓			

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